

# ICET 2016

## 60th WORLD ASSEMBLY

Teachers for a Better World:  
Creating Conditions for Quality Education -  
Pedagogy, Policy and Professionalism

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The University of the West Indies  
Kingston, Jamaica

### 60th YEARBOOK OF TEACHER EDUCATION

Edited by Dr. Carol Hordatt Gentles

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**60th Yearbook of Teacher Education**  
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## INTRODUCTION

Welcome to the ICET 2016 Yearbook. This is an annual online, open access, peer reviewed collection of papers that represent the conference proceedings. Delegates were invited to submit papers that spoke to one of the conference strands:

- Improving the preparation, lifelong growth and development of educators at all levels
- Preparing educators for tomorrow's challenges
- Assuring teacher quality
- Closing the gap and building the teaching profession
- Ensuring inclusiveness

The papers published here were submitted to the Conference Editorial Committee for consideration as refereed papers. Each was subjected to a double-blind peer review process. Authors were required to make modifications as recommended by reviewers and to present their papers at the conference before their submissions were deemed eligible for inclusion in the Yearbook. A list of non-refereed papers presented at the conference can be found at the end of this book. I do hope you will enjoy reading this yearbook.

## CONFERENCE CHAIR'S REPORT

The ICET 60th World Assembly was held at the Jamaica Pegasus Hotel in Kingston, Jamaica from July 18th to 22nd, 2016. Hosted by the School of Education of the University of the West Indies in partnership with the Teachers Colleges of Jamaica (TCJ), it welcomed 200 local, regional and international delegates to focus on the theme Teachers for a Better World: Creating Conditions for Quality Education; Pedagogy, Policy and Professionalism. The aim of the conference was to bring together educators, policy makers, researchers, NGOs, public/private stakeholders and learners to network and share their research, experiences and knowledge on various aspects of educating for teaching. This was achieved through the presentation of over 120 papers, eight symposia, a vibrant poster session and four interactive workshops. Delegates also enjoyed a welcome reception, Jamaica Night, hosted by Shortwood Teachers College and partied until midnight at the Gala Dinner held in the Talk of the Town Restaurant of the Pegasus hotel.

The 2016 World Assembly was a particularly special event because it marked the sixtieth anniversary of the conference and it was the third time it had been hosted by Jamaica — a notable accomplishment for such a small country. The significance of this was underscored by the delivery of a remarkable keynote address by Professor Emeritus The Hon. Errol Miller titled Teacher Education in the Commonwealth Caribbean and the Power of the Marginalized. Professor Miller began by relating the theme of the Assembly “to the genesis and essence of the education of teachers as it evolved over the first hundred plus years of its creation”. He then went on to provide a brief history of teacher education in the Caribbean and established how it was linked to “the genesis and essence of teacher education since it began to spread beyond Germany and France just under 200 years ago.” Miller argued that “the story of Commonwealth Caribbean teacher education tells a story of teacher education from the perspective of the marginalized and not the powerful countries”. He then shared lessons that might be “learned

from Commonwealth Caribbean teacher education that may have relevance with respect to the current challenges facing teacher education in contemporary global society.”

Support for the conference came through local sponsors as well as from the UNESCO International Task Force on Teachers who funded the participation of five Caribbean teacher educators from Guyana, Belize, Barbados, St. Vincent and Grenada. The International Task Force on Teachers for Education (ITFT) also sponsored a keynote address by Mr. Hiromichi Katayama, from its Secretariat, on The International Task on Teachers for Education 2030: Contributing to the Conditions for Quality Education. This provided a critical, global perspective on current issues in teacher education. The third keynote address Empowering teachers to embrace diversity and difference: The Jamaican Experience was delivered by Dr. Hixwell Douglas, Educational Consultant. Drawing on his own experiences as a highly successful educator who is visually challenged, he reminded delegates that differences should be celebrated and used as a source of learning. He said that schools should actively engage diversity and maximize the opportunities offered to teach the value of differences. He also highlighted an educational issue unique to the Caribbean — the marginalization of males, and the importance of meeting their needs through our pedagogy.

The 60th World Assembly also offered an opportunity for ICET to present two prestigious awards. The first was the Frank H. Klassen Lecture award presented to Professor Errol Miller. An invitation to deliver this lecture is an honour accorded only to exceptional educators of global stature. Professor Miller received the award in recognition of his outstanding leadership and contribution to education. In his reply, Professor Miller expressed his deep appreciation for the award, noting that he felt humbled to receive an award that commemorated Dr. Klassen, who, as noted by ICET’s President, Dr. James O’ Meara, “was a long-standing ICET President who led the transformation of ICET from a committed group of teacher educators into the global voice of the teacher education community.”

The second award was the inaugural Darrell Bloom award presented in absentia to Professora Nelly Aleotti Maia for sustained services to the promotion of educator preparation. This award named after Darrel Bloom acknowledges his service and commitment to strengthening the role and impact of ICET through his strong leadership. Nelly or “the grandmother of ICET” as she is affectionately known, is a dear, cherished and long-standing member of the ICET community who has served ICET with passion, grace and commitment to its ideals and goals for over fifty years.

Another special feature of the conference was the official launch of a publication titled *Redefining Teacher Education for the Post-2015 Era: Global Challenges and Best Practices* (2016). Edited by Maria Assunção Flores and Thuwayba Al Barwani, the book was specially produced by ICET to commemorate its 60th anniversary. The book offers “international perspectives, frameworks and a wealth of insights, models and case studies from around the globe that serve to create an understanding of the role of teacher education in the Post-2015 education agenda.” A key contribution to this book is the first chapter, which documents the history of ICET.

A special mission of the 60th World Assembly was to include participation of the private sector to stimulate strategic thinking about the role of public/private partnerships in working for improved quality in the Caribbean. To this end, fifty private and government stakeholders were invited to a breakfast forum with the aims of (a) deepening private sector understanding of the significance of supporting the

education and continuous professional learning of teachers and to (b) build strategic capacity among public sector stakeholders to secure private sector support. This event was funded by the Global Coalition for Change.

Reviews and feedback from delegates suggest that ICET 2016 was a great success. New networks and partnerships were established and long lasting friendships were formed and renewed. Reports from the conference rapporteurs suggest that the quality of presentations was very high and that dialogue and conversations around the conference themes were stimulating and engaging.

As the curtain falls on ICET 2016 with the launch of this publication, we wish the organizers of ICET 2017 in Brno, Czech Republic, all the very best.

Blessings and one love from Jamaica.

Dr. Carol Hordatt Gentles

*Conference Chairperson & Editor*

*April 2017*



Professor James O'Meara  
*President ICET*

It is my great pleasure and privilege to welcome you to the 60th World Assembly of the International Council on Education for Teaching. As we come together to celebrate this important event, I would like to share three brief stories about the history of ICET before concluding by discussing some exciting developments linked to the future of ICET.

### **WHEN DID THE INTERNATIONAL COUNCIL ON EDUCATION FORM?**

#### **WHAT DOES THE NAME MEAN?**

ICET as a concept began during an international teacher congress held in Copenhagen in August 1952. Key events during the congress included the formation of the World Confederation of Organizations of the Teaching Profession (WCOTP) and a commitment to form a group to prepare summary reports of opinions and current practices with regard to selected topics, including Education for Teaching. In 1953, a small group of teacher educators attending the WCOTP Assembly in London, formed the International Council on Education for Teaching (ICET). Over the next five years the group continued to meet during WCOTP Assemblies. Dr. William J. Haggerty, President of the State University of New York at New Paltz, was elected President of the organization for a three-year term in 1958. Haggerty described the purpose of ICET in 1961 as to bring persons interested in teacher education together and to publish material about the way teachers are prepared in different parts of the world.

### **HOW IS ICET CONNECTED TO THE AMERICAN ASSOCIATION FOR THE COLLEGES OF TEACHER EDUCATION (AACTE)?**

During 2015, ICET and the AACTE committed to re-energizing a relationship that began in 1968. During the ICET World Assembly in Dublin newly elected President David J. Johnston, from the University of London, reported that generous financial assistance from AACTE provided the opportunity to create a permanent ICET secretariat at the offices of the AACTE in Washington DC. The move to Washington prompted the establishment of a Board of Directors led by Edward C. Pomeroy from AACTE. Many of our local delegates would recognize the name of the first Board Member-at-Large, Aubrey S. Phillips. In 1972 he held the position of Senior Lecturer in the School of Education at the University of the West Indies.

### **WHY DOES ICET HAVE THE FRANK H. KLASSEN LECTURE AND DARREL BLOOM AWARD?**

During this year's World Assembly Professor Errol Miller will deliver the Frank H. Klassen Lecture in recognition of his outstanding leadership and contributions in education. Dr. Klassen was a long-standing ICET President who led the transformation of ICET from a committed group of teacher educators into the global voice of the teacher education community. Professor Miller, described locally as an 'Educator Extraordinaire', is known for his leadership in the implementation of major educational reforms such as free secondary and tertiary education; the integration of schools serving children with various disabilities into the public system and the addition of grades 10 and 11 to 66 three-year secondary schools.

The 60th World Assembly will also mark the inaugural awarding of the Darrell Bloom award for sustained services to the promotion of educator preparation. Darrell Bloom, an active leader within ICET and the immediate Past President of ICET, is known to many of us assembled here today. Darrell's service as President from 1998 through to 2012 ensured the continuation of ICET's commitment to bring persons interested in teacher education together and to publish material about the way teachers are prepared in different parts of the world. When the winner of this award is announced later this week, I am confident you will agree that this person characterizes the same levels of sustained services to the promotion of educator preparation as Darrell Bloom.

### **ICET IN THE EDUCATION 2030 ERA**

In 2016, ICET continues to be a global voice of the teacher education community. Over the past twelve months, evidence of this recognition includes invitations to participate in UNESCO High Level Expert meetings including: the World Education Forum 2015, Korea; the International Forum for Partnerships; the Qingdao Declaration, China; the 8th Policy Dialogue Forum of the Teacher Task Force (TTF), Mexico, the Global Education & Skills Forum, Dubai; and the Teacher Education Knowledge Mobilization Summit for the UNESCO Education 2030 Framework for Action, England.

Over the last twelve months supported and motivated teachers reflected the key messages guiding our efforts. During the past year the Secretariat served as a critical friend to the US-based WoLakota Teacher Leader Project. This collaboration between the US Department of Education and Technology and Innovation in Education (TIE) focused on supporting early stage teachers to reduce teacher attrition — a UNESCO indicator of low motivation — in tribal and public schools serving Native American communities. The project plans of the WoLakota team include providing professional development to retain 375 teachers in high-needs schools over five years. The team has also set a goal of 75 percent of these teachers achieving National Board Certification.

Today, our leadership and contributions to teacher education focus on the UNESCO priorities of Gender Equality and Africa. This year the Secretariat established a collaboration with the Forum of African Women Educationalists (FAWE) and the Association for the Development of Education in Africa (ADEA). Our collaboration involved hosting a meeting to recognize the winners of the most significant change stories (MSC) about innovative programmes to advance girls in secondary education in Africa. In 2017 we have plans to continue collaboration with ADEA and FAWE by hosting a meeting to recognize the winners of the most significant change stories (MSC) about innovative programmes to support and encourage girls in secondary education to become inspiring teachers in Africa.

During this World Assembly, due to the generous support of the International Teacher Taskforce on Education 2030, we will engage with local educational leaders and Education Officers from across the Caribbean. In line with the mission of the taskforce, we share thoughts about policies to support teacher training and ongoing professional development so all learners will have access to a high quality education in which educators are appropriately qualified and recognized as motivated and committed professionals and practitioners.

Later in the week, due to the generous support of the Global Coalition for Change (GCC), we will host a breakfast for local business leaders to introduce guests to the Framework for Business Engagement

in Education. This three-year sponsorship of the Business Engagement in Teacher Education Breakfast by the GCC creates a forum for business leaders interested in teacher education to join us at the next three World Assemblies. We hope to use this forum and the framework, developed by UNESCO, UNICEF, the UN Global Compact and the UN Special Envoy for Global Education, to raise awareness about how local businesses can contribute to teacher education programs to further improve the capacity of teachers to improve the educational experiences and outcomes of their learners.

The recent history of ICET contains stories of innovations and new collaborations. I would like to assure you that while the Education 2030 era will continue to reflect these themes, as President of ICET, I am committed to working with the Board to sustain the traditions established during the last 60 World Assemblies. ICET will continue to host World Assemblies to provide a forum for persons interested in teacher education to come together to share knowledge about the way teachers are prepared in different parts of the world. During these assemblies we will continue to recognize the thought leaders and servants to the promotion of educator preparation worldwide. After these assemblies we will publish the Yearbook of Teacher Education to disseminate these ideas to those who are unable to attend.

In closing, I would like to remind all that the secret to the sustained success of ICET lies in the strength of the ties formed during and between World Assemblies. I encourage you to use this week to reconnect with old friends and reach out to make new friends. Approach our Board Members to learn about Board Membership. Finally, I challenge you to continue to develop and share your knowledge so we can continue to advance our understanding of the education required for teaching in the 2030 Era.



David Mandzuk, Ph.D.  
*Chair, International Council on  
Education for Teaching*

Dear Delegates,

As the Chair of the ICET Board of Directors, it brings me great pleasure to welcome you to this year's World Assembly and of course, to Jamaica, home of this year's hosts, the School of Education at the University of the West Indies and the Teachers' Colleges of Jamaica (TCJ), a consortium of eight Jamaican teachers' colleges. I would also like to note that 2016 marks the third time in 60 years that Jamaica has hosted the world assembly so I know we will be in good hands as we gather in Kingston.

As many of you will know, ICET is an international non-governmental organization (NGO) that brings together educators and particularly, teacher educators from around the world — to share best practices, to discuss innovative research, and probably most importantly, to discuss how the issues, challenges, and opportunities we all face play out differently across international contexts. ICET has many unique features and three of these are of particular note: its relatively small size, its inclusive scope, and the opportunities it affords us to meet in different parts of the world each year so that we can learn from one another and learn more about education and teacher preparation across trans-national contexts. If this is the first time you have attended an ICET world assembly, I would encourage you to learn more about the organization by speaking to one of the Board members while you are here and consider becoming a member on a go-forward basis.

I would like to take this opportunity to thank Dr. Carol Hordatt-Gentles and her conference organizing committee, her colleagues from both the School of Education at the University of the West Indies and the Teachers' Colleges of Jamaica, for the countless hours they have invested to make this year's event a success. Those of us who have organized conferences know how much time, energy and effort these events require and I know that Carol and her team have created an exciting and innovative program that will be intellectually stimulating and will provide many opportunities for us to either re-connect or get to know one another socially.

On behalf of the ICET Board of Directors, I wish you a successful and engaging conference and hopefully, some time to explore the island while you are here!



Professor Stafford Griffith  
*Director, School of Education,  
UWI, Mona*

The twenty-first century teacher must develop a wide range of skills for critical thinking, problem-solving and decision-making. The model educator must be insightful and proactive and must be prepared to respond to the rapidly changing needs of students who are having increasing access to information, thanks to advances in ICT. The teacher is challenged to utilize new approaches to teaching which take into account the characteristics of this new generation of learners.

The ICET conference provides an excellent forum for discourse on these and other related issues. It provides a critical space for the sharing of ideas from a wide cross-section of experts. Such discussions have the potential to generate new knowledge based on research and reflection that will help in preparing teachers to better respond to the new generation of learners.

The School of Education in the Faculty of Humanities and Education at the University of the West Indies, Mona Campus, is very pleased to be associated with this initiative. This is a very timely conference for the School of Education, given its current efforts at reform of its courses and programmes at the undergraduate and graduate levels to better respond to its important role of preparing educators in Jamaica and the rest of the Caribbean to improve learning at all levels of the education system.

We are confident that the deliberations of the conference will result in the sharing of best practices and lead to new strategies for preparing teachers of the highest quality. We expect that the information shared at this conference will enhance pedagogy, policy and professionalism in education systems across the international community.



Yvonne E. Clarke  
*Dean –  
Teachers Colleges of Jamaica*

It is my esteemed pleasure to contribute a message to our conference booklet. I am delighted that this conference is hosted by The School of Education, of the University of the West Indies, Mona, and the Teachers' Colleges of Jamaica (TCJ). This important event is part of the International Council on Education for Teaching 60th World Assembly, focusing on the theme: Teachers for a Better World: Creating Conditions for Quality Education; Pedagogy, Policy and Professionalism.

The objective of the International Council on Education for Teaching is to provide a multinational platform/forum where the latest trends in education can be presented and discussed in an affable environment and practitioners can learn from each other. Presenters will be able to share their experiences, research results and their knowledge with educators, policy makers, researchers, NGOs, public/private stakeholders and learners, on various aspects of teacher education. I believe that the ideas and best practices shared in the sessions will impact responses to issues affecting education regionally.

The 2016 International Conference brings together some of the brightest minds in education with scholars, researchers, entrepreneurs and other key players in public and private organizations. It is our hope that one of the main outcomes of this conference will be, that it aids in stimulating partnerships for improved teacher quality in the Caribbean, thus providing an opportunity for critical transfer of knowledge and expertise; and the creation of a reservoir of available skills and competencies in the region. Our country, and indeed the Caribbean region, has been eager to embrace such a unique and critical opportunity and I am pleased to see that this forum has been initiated to answer the call.

While we may be at different stages of development in our respective countries, our aim and commitment to ensuring high quality services are provided to our citizens is universal. Being part of a wider international community presents us with the opportunity to learn from each other and to contribute to international debates through ICET conferences, webinars, newsletters, journals and the internet. We are grateful for the tremendous support that we have received for this conference, as is expected, from our colleagues and administrative leaders. We are particularly heartened by the support of members of the business community; whose financial contributions along with their ideas and involvement will undoubtedly serve to make this conference a truly unique combination of scholarship and practice. Congratulations to the team of organizers of this conference, we look forward to the strengthening of the networks and partnerships among members of ICET.

Finally, we would like to wish all our visiting participants a pleasant stay in Jamaica and safe return home. I hope that ICET 2016 will be a conference you all will pleasantly remember. We hope we will meet again at the International Council on Education for Teaching Conference 2017.



Mr. Norman Allen  
*President,*  
*Jamaica Teachers Association*  
*(2016-2017)*

Education is a dynamic process that is critical to the growth and development of any society. The quality of education, therefore, must be seen as an important variable that must be constantly under scrutiny by practitioners, academics, governments and employers. Of significance to any discourse on education must be the quality of our teachers. In fact, one could argue that teachers, good teachers, do make the difference. It therefore brings to focus how relevant your theme is, “Teachers for a Better World: Creating Conditions for Quality Education – Pedagogy, Policy and Professionalism”.

It is our desire that all participants will benefit from the deliberations and exchange of best practices. This conference will hopefully cause all of us who are educators to embrace the view that education, void of quality, is significantly compromised and may even be deemed useless.

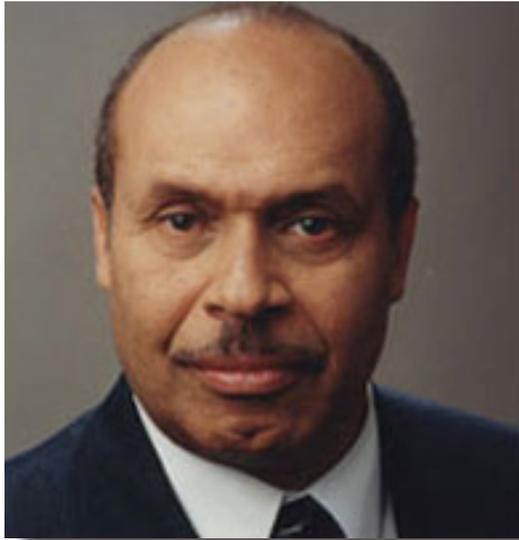
Consequently, this conference must be more than a talk shop. It must bring workable solutions to much of the issues. It must be a call to action. Action that will impact the educational landscape positively.

I commend all the planners, sponsors and participants and hope that, indeed, we will see a better world as a result of our efforts.

**THE  
FRANK H. KLASSEN  
LECTURE**

**§**

**Professor Emeritus  
The Honourable Errol Miller**



**PROFESSOR EMERITUS THE HONOURABLE ERROL MILLER** is currently Chancellor of the Mico University College, Jamaica. He was Professor of Teacher Education at the Institute of Education, UWI from 1981 to 2005 and has been Professor Emeritus since 2006. He is a former Principal of the Mico University College, Past President of the Jamaica Teachers' Association, former Permanent Secretary of the Ministry of Education and, from 1984-89 was an Independent Senator in the Jamaican Parliament. Professor Emeritus Miller has served as Director of several innovating projects in education, including the Caribbean Centre of Excellence for Teacher Training. He has also served as Chairman and member of several boards related to public service in Jamaica, the Caribbean and internationally, including being the former Chairman of the Electoral Commission of Jamaica.

Professor Miller is the author of 17 books and monographs, 30 chapters of books and over 70 papers and reports in peer-review publications. He is the recipient of numerous awards and honours for contribution to education and public service including two Fulbright Fellowships for Senior Academics; Jamaican national honours, Commander of the Order of Distinction and Order of Jamaica; the University of the West Indies, Vice Chancellor's Award for Excellence; UWI Doctor of Laws Honoris Causa; the UWI Alumni Association Pelican Award 2006; Jamaica Teachers Association Honour Roll and the Albert Shanker Education Award for 2004 by Education International. Professor Miller is a member of the Bethel Baptist Church in Half-Way-Tree Jamaica since July 1956 and is a lay preacher. He is married to Sharon and has two sons Garth and Ye Kengale, one daughter, Catherine and four grandchildren.

# Teacher Education in the Commonwealth Caribbean: The Power of the Marginalized

With this introduction given by Dr. Christopher Clarke, everything from this point onward must be downhill. Being the last speaker, in the interest of time and seeing that it has been so oft repeated, allow me to say: *all protocols observed*. I wish only to draw attention to the presence of Senator the Honourable Ruel Reid, Minister of Education and to Dr. Mavis Gilmore and Mrs. Maxine Henry-Wilson (previous Ministers of Education), the empathy between them and the fact they are not all on the same political side. Both Dr. Gilmore and Mrs. Henry-Wilson presided over major reforms in teacher education which have had a positive impact on teacher education in Jamaica. One can only hope that Senator Reid will follow in the path of his predecessors. Further, we must note that Dr. Mavis Gilmore delivered the keynote address at the World Assembly in 1986 – Cultural Diversity and Global Interdependence: Imperatives for Teacher Education.

This morning, the city of Kingston is basking in glory. The sixty World Assemblies of ICET have been held in forty-five cities across the world. This is because ICET World Assemblies have returned to eleven cities: twice in eight cities and three times in three cities. The three cities that enjoy this remarkable triple privilege of hosting ICET World Assemblies are Washington DC in the United States, Rio de Janeiro, Brazil and Kingston, Jamaica. As a fifth generation Kingstonian, allow me to express Kingston's gratitude and pride. ICET first returned to Kingston after 15 years, and now again after 30 years. We hope that this is not an arithmetic progression. Kingstonians would be very disappointed if the next ICET World Assembly held in Kingston was 45 years hence.

I first met Dr. Frank Henry Klassen in 1971, introduced by my mentor, the late Professor Aubrey Phillips who was very involved in both the World Confederation of Organizations of the Teaching Profession (WCOTP) and ICET. Later, in 1983-84, it was my privilege and great learning experience, to have served with Dr. Klassen on the ICET Team that carried out the External Terminal Evaluation of the CXC/USAID Secondary Curriculum Development Project. Dr. Klassen was a titan of teacher education. In his 24-year stint as Executive Director of ICET he became the voice of teacher education in the world. I am more than humbled to be delivering the Frank H. Klassen Lecture this morning and to receive the medal.

## DEFINING THE COMMONWEALTH CARIBBEAN

The Commonwealth Caribbean is defined linguistically by the English language; historically by British colonization, slavery and indentured service; geographically by the Caribbean Sea which washes the shores of 17 of the eighteen states that are counted in its composition. The sub-region stretches from

Belize located on mainland Central America through the islands of the Caribbean Sea to Guyana located on the South American mainland. The Commonwealth Caribbean is marked by a unique set of cultural and demographic features. The basic demographic is peoples of the Old World of Africa, Europe, India, China and the Mediterranean forming the mainstreams of Commonwealth Caribbean societies while the earlier arrivals, the Amerindians, where they continue to exist, are invariably marginalized.

The body polity consists of marginal majorities of descendants of Africa and/or India and dominant minorities of European, Mediterranean, Chinese and mixed ancestries.

The cultural milieu is that of a swirling vortex of creolization which has compromised the distinctive verities of tribe, caste, class and dynasty of the Old World, thus increasingly unfitting Old World peoples of the Caribbean to return to the continents from which their ancestors came and increasingly fostering common bonds of Caribbean identity, solidarity, belonging, civilization and destiny. Sex, rum, greed, Christianity, the Bible, heroic resistance and music are catalysts of creolization. Like the rest of the Caribbean, the Commonwealth Caribbean is a front runner in multiracialism in the world and in understanding the common humanity of all mankind.

They are modern societies of modest means. Criteria defining modernity include representative democracy, public education, capitalist market economy, civil service bureaucracy, and values of freedom, individualism and equality. Representative democracy in the Commonwealth Caribbean has evolved in sync with Britain itself. Barbados has had an elected Assembly that has operated continuously since 1639 with the holding of General Elections as prescribed by its constitution. Similarly, Jamaica has held General Elections, with the exception of 18 years, since 1661. The creation of the sugar plantation economy ensured that Caribbean colonies were part of capitalist market economies since the latter half of the 17th century. Education in the Commonwealth Caribbean dates back to the latter part of the 17th century, hence there are several schools that have operated continuously for more than 250 years. Public education systems and provision for the mass of the population dates back to 1834. The values of freedom, individuality and equality have characterized every era of Commonwealth Caribbean societies.

Lands of different sizes with shared history, common language and similar demographics separated by various amounts of sea and marked by different dialects and generous doses of insularity.

## **RECITING THE GENESIS AND ESSENCE OF EDUCATION FOR TEACHING**

Milestone anniversaries are times to reflect upon genesis and essence in order to renew identity and contemplate destiny. At this 60th Anniversary World Assembly we can do no less than to reflect, if even briefly, on our antecedents, take account of the dynamic forces at work in our time and to seek to determine what should be the focus of our assertions and exertions that are consistent with our genesis and essence.

The title of this lecture is: Teacher Education in the Commonwealth Caribbean: The Power of the Marginalized. The intention is four-fold. First, to relate the theme of this Assembly to the genesis and essence of the education of teachers as it evolved over the first hundred plus years of its creation. Second, to establish that teacher education in the Commonwealth Caribbean has been connected to the genesis and essence of teacher education since it began to spread beyond Germany and France just under 200 years ago. Third, that Commonwealth Caribbean teacher education tells a story of teacher education from the perspective of the marginalized and not the powerful countries. Fourth, to share some lessons

learned from Commonwealth Caribbean teacher education that may have relevance with respect to the current challenges facing teacher education in contemporary global society.

Writing was first invented in a temple of ancient Sumer around 4,000 BCE as priests sought means of maintaining their integrity as they presided over barter exchanges between linkages living in proximity but wary of each other. Economic exchange required divine sanction and sacred vow, invoking trust. Priests came to find that trust needed to be bolstered by objective verification. It took another 1,000 years, around 3,000 BCE, before the first *edubba* of Uruk, Sumer was invented to teach the scribal art as kings required their own scribes to administer and document affairs of their courts, including accounting for tributes and taxes. The *edubba* admitted children and graduated adults. The *edubba* was a school, a scriptorium and a library rolled into one. Teaching, publishing and the storage and retrieval of script were the trinity that marked this fundamental transformation in the history of civilization. The medium for writing was clay tablets.

Teaching became one of the occupations of priests schooled in the scribal art, and schools became an institution within the clerisy of every religion with a written script. All available evidence indicates that didactics and pedagogy have their genesis in religious orders, of men and women who devoted themselves to teaching. Exact dates and definitive histories of teacher training within religions are still problematic. However, it would appear that for centuries, or even thousands of years, scribes and scholars taught without any preparation for teaching. Royal schools for courtiers and grammar schools preparing students for universities were taught by scholars or clergy with a classical education but no training to teach. The common view which prevailed was that those scholars and priests who taught were born teachers.

The history of formal teacher training for laymen is more certain. Institutions were created in the closing decades of the 17th century which educated and trained laymen as teachers. In the 230 years since then, teaching has become a predominantly layperson occupation and formal teacher education the modality for educating the teaching profession. It is important at this 60th ICET World Assembly to recite the emergence of formal education for the teaching profession.

In 1684 Jean-Baptiste de la Salle, Roman Catholic priest and founder of the Institute of the Brothers of Christian Schools, founded an *ecole normale* in Rheims, France for the sole purpose of training laymen to teach in free schools for the poor, in order to deliver to the latter good quality education. De la Salle's motivation came from his inability to meet the growing demand for teachers from among priests. He encountered great opposition from his aristocratic family because he, a member of the second estate, fed and boarded young men of the third estate in the family residence. Violating these social barriers was a scandal too much to bear. His family took him to court and evicted him and his Institute. De la Salle also encountered strong resistance from the ecclesiastic authorities of France and Rome because his rule for the new order barred priests, and anyone intending to be a priest, from being a Brother. A new religious community was being formed that usurped an occupation that was within the priesthood. Teachers of the Christian schools serving the poor would be taught by dedicated laymen trained and committed to teaching. De la Salle persisted despite the opposition. The Christian Brothers and the *ecole normale* survived his death because of continued demand for quality teaching in service of the poor and marginalized.

The spread of the Normal School as the worldwide institution for educating and training teachers, however, is most accurately traced to Saxony, Germany and to the work of Augustus Hermann Franke of the University of Halle. Banned from lecturing at the University of Leipzig and expelled by the civil authorities of the city of Erfurt because of the evangelist fervor of his preaching, in December 1690 Franke accepted the non-salaried post of Professor of Greek and Oriental Languages at the University of Halle and, for income, the post of pastor of the Lutheran Church at Glaucha.

Starting out of concern for orphan children of the city, some of whom were engaged in crime, and in response to demands by parents of different social ranks, between 1694 and 1697 Franke established an educational complex consisting of:

- An Orphan Asylum and a day school for outcast children offering elementary education.
- A Royal School for children of rich and noble families, the profits of which helped to fund the Orphan Asylum.
- A Latin school for boys of the city of Halle, which was self-financing.
- A German school for parents who did not desire a classical education for their children, which was also self-financing.
- A Teachers' Seminary to train poor young men to be teachers of the lower levels of all schools of the complex. In return for their board and training, teachers trained by the Seminary committed to teach for three years in the complex.
- A book establishment which published the classics and school books for the complex and the general trade, the profits of which also helped to finance the orphanage.
- A printing press that published Bibles at an affordable price.
- A library of over 20,000 volumes for use in the schools of the complex.
- An apothecary's shop, started as a medicine chest for the poor, but which served the general community, the profits of which helped to support the complex.
- A house for widows.

Franke's education complex had the appearance of 'edubba 2.0'. It incorporated the evolution in schooling from being single level to being multiple levels as well as the technological invention of printing. The complex had schools at the elementary, secondary and tertiary levels and served all ranks of society. The printing press and book establishment had replaced the scriptorium as the mechanism of publishing. The library housed books made of paper and not clay tablets or scrolls of parchment.

There is no evidence to suggest that the Teachers' Seminary created by Franke at Halle, Germany in 1697 was an imitation of the *ecole normale* established by de la Salle in Rheims, France thirteen years earlier. Coming from different circumstances, both de la Salle and Franke appeared to have organically devised almost identical solutions to the demand for teachers who were not clergy. The core elements of the new paradigm were: residence in an educational institution designed to meet the norms for schooling and teaching for two to three years; advanced instruction in the disciplines taught in schools; instruction in education as a science; instruction in methods of teaching as an art; and increasing practice of teaching skills in a school that modelled the norms of schooling. Modelling norms of schooling was at the heart of training laymen to become teachers.

Franke's complex became the template for the public education systems that were developed in German states over the course of the 18th century, led by Prussia. The series of religious wars in Germany which culminated in the Thirty-Year War 1618–1648, which is estimated to have killed up to 40 percent of Germans, ended in détente between Roman Catholics, Lutherans and Calvinists. Going forward, the German language, religious pluralism and piety, the inner religion of the heart, would take precedence over intolerant denominational orthodoxy and Latin as the glue of living together peacefully. It would be possible to be German as well as to be Roman Catholic or Lutheran or Calvinist. German, the vernacular language, would be the medium of instruction and the principal national solvent in which all else would be dissolved, and schooling and teaching would be the chief mobilizing agents of German citizenship, irrespective of Lander and denominational allegiance. Public education would be denominational having Lutheran, Roman Catholic and Calvinist streams which mirrored the same elements.

The legal framework for the public system of education in German states also established teaching as a public profession with teachers being held in high esteem. The following were stipulated by law:

- Compulsory elementary schooling, different types of secondary schools and access to tertiary education.
- Teacher training in Teachers' Seminaries prior to employment in any school or university.
- The establishment of sufficient numbers and types of Teachers' Seminaries to provide the required training for elementary, secondary and university teachers.
- Preparatory schools or courses to bridge the gap between elementary schooling — which ended at age 14 years — and the minimum age of entry to Teachers Seminary, which was 17 years.
- A system of examinations and inspection to ensure that teachers were competent and were of good character and conduct.
- Remuneration for teachers had to be commensurate with compensation in other fields that employed educated labour.
- All year employment and security of tenure for life for faithful teachers.
- A system of promotion by which faithful teachers could rise, with appropriate pecuniary reward.
- Financial allowance in times of sickness or infirmity, pension in old age and death benefits for family.
- Exemption from military service in peace time and recognition as public functionaries.
- Frequent attendance at conferences and association meetings for mutual improvement and exchanges for professional development.
- Books and periodicals to ensure that teachers kept abreast of advances in teaching.

Courses on Didactics and Pedagogy were common in German universities and theological colleges. In some German states such courses were mandatory for students of theology, since clergymen of the different denominations served on school committees. By 1735, the state of Prussia had established 51 Teachers' Seminaries. In other words, in about 40 years after Franke's experiment at Halle, Prussia had established a comprehensive, coherent, cohesive and integrated system of public education, inclusive of mandatory pre-service education for teachers. Other states such as Hanover, Wirtemberg and Saxony

followed Prussia. By the end of the 18th century there were more than 100 Teachers' Seminaries in Germany, Austria, Switzerland and Northern Europe.

During the opening decades of the 19th century the German system of education became the object of international interest and observation, as well as imitation of several of its aspects, particularly education for teachers. This was because the verities of traditional society had been disrupted by the American Revolution; the French Revolution; the Napoleonic War that loosened Spanish and Portuguese hold over their colonies leading to wars of independence in Latin America; the industrial revolution starting in Britain; manhood suffrage and massive immigration into the United States; extending of voting rights to the middle class men in Britain; and the abolition of slavery in Haiti and in the British Empire. These all demanded expansion of democracy; the creation of citizenries with individual rights; expansion of literacy; and nation-building. Schooling and teacher education were indispensable to all of these.

### THE SPREAD OF TEACHER EDUCATION FROM GERMANY AND FRANCE

Following the Napoleonic War when, ironically, French officials decided to reform and expand education (including teacher education) in the republic, they turned to Prussia, their adversary in war, rather than to Brothers of the Christian schools. The first estate of the aristocracy and the second estate of the clergy had collapsed into the third estate, causing some disruptions in how education was previously structured and provided. French officials looked outside of France for answers and found them in the Prussian state system, including teachers' seminaries. It must be noted that the schools of the Brothers, including their *ecoles normale*, had declined as a result of the turmoil and secular orientation of the revolution, but had not disappeared. They showed resilience in the aftermath of the revolution. By 1833 there were 43 *ecoles normale* in France — secular, except for ten which were run by Brothers of Christian schools. There was also the famed *Ecole Normale Superior* founded in Paris in 1797. In the 1830s, Germany and France were leaders in teacher education in Europe. However, it was not only the translated French name, Normal School, but the German structure and experience that were adopted and adapted by the Anglophone world.

The Anglophone world came late to elementary education for the mass of the population and also to formal teacher education. In England, in 1805, elementary schools were established for children of the working classes. The monitorial system was the first attempt to prepare teachers. An adult taught some of the most able students, who then taught a number of their peers. At best this was a very primitive form of peer-tutoring. This was Britain's first attempt at teacher training. Normal schools were first grafted onto the monitorial system. However, faced with the paucity of qualified students to enter the normal school, the pupil-teacher system was implemented in 1846. The essential feature of the pupil-teacher system was that bright youngsters of thirteen years were apprenticed to headmasters for a period of about four years. The normal school became the terminus of a closed system of education for the working class whereby able elementary school students, at age thirteen years, were apprenticed to headmasters for four to five years — after which some entered normal schools to be formally trained as teachers, while others remained as untrained teachers. In 1838 there were only three Normal Schools in England: Borough Road, Home and Colonial Normal School and the Central Schools of the National Society of Westminster. The famous Battersea Normal School was founded in 1839.

England adopted the normal school as the modality to produce professional teachers for elementary schools but did not adopt the Prussian template of teaching as a profession that required formal education and training for elementary, secondary and university teachers prior to employment. Formal training was only required for elementary school teachers. Secondary school teaching was an occupation for untrained university graduates and grammar school leavers prior to entry to university or other employment.

This pattern for teaching, which was devised in England, became the norm in the British Empire. Elementary schools were staffed mainly by pupil-teachers and some trained teachers supplied by normal schools. Grammar schools were staffed by untrained university graduates and a generous number of their most able school leavers. Not to be missed is that England, a much richer nation, adopted a much cheaper approach to staffing its schools than Germany and France.

The United States adopted and adapted state normal schools to prepare professional teachers for common school. The first normal in the United States was founded in Concord, Vermont by Samuel Read in 1823 as a private institution. The first state-funded normal schools were founded in Massachusetts in 1839 under the leadership of Horace Mann, the father of the Common School movement. By the end of 1839, Massachusetts had three state normal schools: West Newton, Bridgewater and Westfield.

### **Sources of Normal Schools in the Commonwealth Caribbean**

Normal schools in the Commonwealth Caribbean came from two separate sources. The first source was through the Moravians who started a normal school in 1833 in St. Elizabeth in rural Jamaica. It was established to train white and brown ladies as teachers as a hedge against concubinage. However, this school was soon closed and the resources redeployed to establish the Fairfield Normal School to train black and brown male teachers for the elementary schools established following apprenticeship in 1834, and leading up to the abolition of slavery in 1838.

The Moravians were the first to send Protestant missionaries to the New World, first to the Danish colonies in the Caribbean in 1735 and the English colonies in North America and the Caribbean beginning in 1754. The instigator of this development was Count Nicholas Ludwig von Zindendorf of Saxony German, Bishop of the Moravians. Count von Zindendorf had been a student of the Royal School of Augustus Franke's complex at Halle. In other words, Commonwealth Caribbean teacher education has direct connection to Franke's experiment in Halle, Germany, through the Moravian Church.

The second source was the Lady Mico Charity in England. Sir Samuel Fowell Buxton, an Anglican, was chairman of the Charity. He was later called the Great Emancipator, because he was the member of the House of Commons who, in 1823, tabled the first Bill to abolish slavery in the British Empire. With the passage of the abolition Bill in 1833, Buxton succeeded in re-directing the resources of the Lady Mico Charity in England to establish elementary schools and normal schools to educate the children of the newly freed in the Empire. Between 1836 and 1837 four Mico Normal Schools were established: one each in Antigua, Guyana, Jamaica and Trinidad. Mico elementary and normal schools were Christian but non-denominational. Their Boards included Anglican, Methodist, Presbyterian, Moravian and Baptist clergy. Teacher education in the Caribbean, through Mico, has direct connection to the abolition of slavery. This connection to emancipation tied normal schools to marginality, as was the case in France, Germany, Britain and the United States.

In 1839 there were five normal schools in the Commonwealth Caribbean: two in Jamaica and one each in Antigua, Trinidad and Guyana. The Commonwealth Caribbean had more normal schools than England and the United States, and was on the frontier of the spread of normal schools from their origins in France and Germany to the rest of the world as the main institution for providing professionally trained teachers. The Commonwealth Caribbean normal schools followed the paradigm. They were residential, accepted students who were 17 years or older, were of two years duration, followed the standard curriculum of normal schools and had attached to them at least one model school in which trainees practiced pedagogy.

Hopefully I have established that institutions for the formal education of laymen as teachers were invented out of a moral imperative to foster citizenship as the glue of living together peacefully. Further, Normal schools and the teaching occupation were avenues of upward social mobility for those from among the poor and marginalized sectors of the society that they were designed to serve. What normal schools were designed to do, and what they were, reinforced each other. Being and doing comingled in the normal school.

Normal schools and elementary education were employed to transform warring believers into German citizens of non-political faith and former members of the third estate in France into citizens with rights, duties and patriotic spirit similar to those of the landed aristocracy that had been displaced. In Britain, normal schools and elementary education became tools to address the social fallout of the Industrial Revolution and to expand the franchise to all middle class and most working class men. In the United States, Normal and Common Schools became tools of expanding manhood suffrage and governance beyond the aristocrats of learning, and making Americans out of immigrants from Europe. In the Commonwealth Caribbean, normal schools and elementary schools were employed in creating citizens with rights in proposed free societies. In 1838, the enslaved were property by law. As of August 1, 1838, the former enslaved legally became citizens with rights. Elementary and normal schools were part of the infrastructure of freedom and the means of effecting the social transformation. Education for teachers had its genesis and essence in addressing societal transformation, particularly in relation to the marginalized.

## THE THEME, GENESIS AND ESSENCE OF TEACHER EDUCATION

The theme for this 60th Assembly is *Teachers for a Better World: Conditions for Quality Education, Pedagogy, Policy and Professionalism*. Hopefully it has been established that quality education, professionalism and pedagogy are aboriginal in the genesis and essence of teacher education. They are the technical foundations of education for teachers. ICET World Assemblies have implicitly acknowledged this fact by explicitly addressing these aboriginal elements directly: *Quality Education* in Rio in 1963, Cairo in 1989, Singapore in 1990, Muscat in 1997, San Diego in 2007 and Muscat again in 2009; *Pedagogy* in Glasgow in 2011 and Oshawa in 2014; *Professionalism* in Vancouver in 1967 and Hong Kong in 2004. Further, almost all 60 World Assemblies have addressed these foundational elements indirectly.

The uniqueness of the theme of this World Assembly rests in its stem: Teachers for a Better World. However, while policy is included in the sub-title of the theme, the social imperative is unclear. The policy question becomes: Teachers for a better world for whom? Policy is never neutral and is largely

outside the control of teacher educators. It is this question that I wish to explore from the perspective of the Commonwealth Caribbean experience.

Policy is the twin brother of power. Policy is the back side of the coin of power. Power is the capacity to prevail, even against opposition and dissent. Power serves its own, unless constrained by moral imperative. Power is not what power says, but what power does. The soothing voice of power often comes with brutal and bloody hands. Power must always be understood in social context and within timeframes. Power is invariably the resultant of global and local vectors. Policies shaping teacher education are directly related to the intersection of global and local power in a particular place at a specific time. The history, sociology and governance of the Commonwealth Caribbean, including teacher education, counsel caution and wariness in dealing with power and policy in order to better understand their intentions and to enter upon strategic engagement.

## **GLOBAL AND LOCAL POLICY AND THE EVOLUTION OF TEACHER EDUCATION IN THE COMMONWEALTH CARIBBEAN**

I am fully aware that we are in the era of opinion polls, focus groups and word clouds striving for instant answers, and that there is great impatience with history. However, throughout my professional career I have found great wisdom in applying to social systems the observation of Alfred North Whitehead, philosopher of science and education, about systems of electrons. Whitehead claimed that if you wanted to know where any system of electrons was going, you needed to take account of at least two vectors. First, where that system of electrons was coming from and second, what were the dynamic forces presently impacting that system. I therefore crave your indulgence in applying that approach.

At the end of the 18th century, Commonwealth Caribbean states were colonies in the British Empire, which was then the dominant global power. Called the West Indies, they had been prized possessions of the Empire because of sugar. However, that golden era of sugar was coming to an end. Senior members of the English Cabinet warned the nabobs in the West Indies that the end of the age of free trade was on the horizon. West Indian sugar would no longer enter the British market on preferential terms. With the abolition of the slave trade in the British Empire in 1807, the signs were clear that slavery would come to an end in the 19th century. Slave labour had been the principal factor in the bottom line which made West Indian planters among the richest men in the Empire. However economists, led by Adam Smith, maintained that free labour would be more efficient than slave labour.

In the first three decades of the 19th century the battle lines were drawn between contending groups in England and in the West Indies. In England plantation owners, merchant houses that financed plantations, those who lived their leisured lives funded by annuities from plantations and the West Indian lobby in the House of Commons and the Lords, lined up against humanitarians, evangelicals, radical and liberal politicians and economists. The contending groups in the West Indies mirrored England except that they were multiracial. English plantation owners and their Scottish managers formed the ruling elite in the colonies. They were equal opportunity exploiters of labour beginning with English, Scottish and Irish bond-servants and continuing with enslaved Africans. They firmly believed that the colonies belonged to them because their predecessors had made the colonies what they were. At the beginning of the 19th century this ruling elite was increasingly opposed by English and Scottish missionaries of dissenting Protestant denominations as well as by Jews, free Coloureds and Blacks seeking their civil rights.

Further, the ruling elite exercised strong hegemony in governance over white small settlers and that segment called free people: Jews, Blacks and Coloureds. Seizing the moment, the free people mounted a sustained movement for their civil and political rights in the second and third decades of the new century. Hoping to co-opt them on their side, the oligarchy conceded these rights. In Jamaica, free Blacks and Coloureds gained those rights in 1830 and Jews in 1831. Jamaica became one of the first states in the world in which White, Black, Coloured and Jewish men 21 years or older were entitled to vote and be elected to political office based on the same common criteria of property ownership. Britain enfranchised middle class men in 1832.

The enslaved decided the timeframe for the end of slavery in the British Empire by an unprecedented strike in Western Jamaica in Christmas 1831 in which they demanded pay for their labour. Strike turned into rebellion and rebellion into the passage of the Abolition Act in Britain in 1833, a period called Apprenticeship beginning in 1834 and the abolition of slavery in 1838.

Although, like the British constitution, it was never written, West Indian planters came to the belief that the continuation of preferential duties for West Indian sugar into the British market was the quid pro quo for the abolition of slavery. Slavery was abolished in 1838 and West Indian sugar continued to receive preferential treatment.

## **THE THREE MAIN ERAS OF POWER AND POLICIES SHAPING TEACHER EDUCATION IN THE COMMONWEALTH CARIBBEAN**

Three periods defined power and policy in the Commonwealth Caribbean: first, emancipation in 1838; second, the Morant Bay riot in 1865; and third, self-government beginning in the 1944 general elections in Jamaica, conducted on the basis of universal adult suffrage and representative government. Each of these three periods requires some brief outline of broad policy in teacher education.

### **Post-Emancipation Policies:**

#### **Denominational and Secular Teacher Education, 1838-1944**

The newly freed in 1838 embraced emancipation with joy. They sought no revenge of their abusers. Rather, they moved forward enthusiastically to make full use of the promise and the possibilities of freedom and citizenship. The planter elite moved forward looking backward, with malice, seeking to re-create the conditions of slavery in the free society in attempting to make sugar great again.

At emancipation Bahamas, Jamaica, Barbados, and the Leeward Islands had been British colonies for one hundred to two hundred or more years. They were predominantly Protestant. Grenada and St. Vincent had become British colonies in 1763 but had rebellions against British rule in the 1790s and were largely Roman Catholic. Trinidad, a Spanish colony settled by the French, became a British colony in 1797 and was largely Roman Catholic. Guyana and St Lucia had become British colonies in 1814. St Lucia was French and largely Roman Catholic. Guyana was Protestant but had Dutch heritage.

Imperial policies in the post-emancipation period had to take account of Caribbean diversity, as outlined, as well as make situational adjustments related to the contending factions in the different colonies. However, there were three overarching imperial policies which obtained throughout the colonial period. These were: Anglicization mainly through the English language; creating loyal British subjects mindful

of their station in society; and maintaining public order. It must be noted that the English equated the newly freed to the working class in Britain and did basically the same to both.

In 1835 the British parliament approved 20,000 pounds, the Negro Education Grant, to establish elementary and normal schools in the colonies. The grant was disbursed in even amounts over the first five years, starting in 1836, and then phased out by decreasing amounts over the next five years. The expectation was that governments in the respective colonies would phase-in funding for their public education systems and then assume ongoing responsibility. Interestingly, the British Parliament approved the exact amount for advancing public education in Britain.

Given the fact that emancipation was imposed against objections from the planting elite and obstruction from colonial assemblies, the Imperial government partnered with Christian denominations in implementing public education through the Negro Education Grant. The Anglican Church and the Mico Charity received lion shares of the grant, while denominations such as the Moravians and the Methodists received modest amounts, while Baptists in Jamaica refused the grant and embarked on self-financing of their elementary schools, theological college and later normal school through a combination of fees, regular contributions from local churches and grants and personnel from their Missionary Society.

In Jamaica, for example, planter opposition to emancipation morphed into obstruction at every point. The Colonial Office came to the conclusion that the old white oligarchy was incapable of governing the free society and recommended Crown Colony Government. The British Cabinet recommended to the House of Commons the suspension of the Jamaican Constitution. The West India lobby in London engineered the defeat of the Bill. This brought down the government of Lord Melbourne in 1839. Chastened, the Colonial Office retreated from imposing on decision-making by assemblies. When the Negro Education Grant began to be phased out in 1841, colonial governments only provided token amounts for public education. The gravamen of their position was that the Imperial Government had imposed abolition despite their objection and had partnered with denominations. The education of the newly freed was not in their interest. The Imperial government and denominations needed to continue what they had started.

While the Imperial government continued to fund public elementary education in England, it opted out in the colonies. The Negro Education Grant was a one-time provision that was never repeated. The Anglican church and the Mico Charity, having been the greatest recipients, were most adversely affected. Many Anglican schools closed. Mico resorted to its resources and closed its normal schools in Guyana and Trinidad in 1841 as well as all its elementary schools, except in St. Lucia.

To their great credit, the missionary societies of the dissenting Protestant denominations remained in partnership with the newly freed. They became the architects of public education in the sub-region. The Baptist example of funding their elementary schools, theological college and normal school through contributions, grants and fees became the default.

Antigua and Jamaica have had an unbroken record of teacher education up to the end of the colonial period. In both islands teacher education was predominantly denominational and Protestant, with Mico and Moravian institutions being central to continuity. By 1865, Jamaica had six normal schools: two Moravian; one Anglican, one Mico, one Baptist and one Presbyterian. Jamaica became the centre for teacher education in the western Caribbean. Up to 1899 the Mico and Moravian normal schools in Antigua were the sources of formal teacher education in the Eastern Caribbean. After the Mico institution

was closed in 1899, the Rawle Training Institute was created by the Anglican Codrington Theological College in Barbados in 1912 to fill the gap. The Rawle Training Institute served the Eastern Caribbean in the same manner as the Mico Normal School had done. Barbados joined Antigua in serving teacher education in the Eastern Caribbean. The Anglican Rawle Institute was superseded by Government Erdiston Teachers College in 1948.

After the Mico Normal School in Trinidad closed in 1841, Trinidad then sent teacher trainees to Mico Normal Schools in Antigua or Jamaica. However, in 1852 the Governor established a Government Normal School in Trinidad, and Ward Schools at the elementary level, which offered free secular education. The seeming contradiction of imperial policy supporting both fee paying denominational public education in Antigua and Jamaica and free secular public education in Trinidad is best understood with respect to the imperial policy of anglicizing the peoples of the colonies. Even dissenting Protestant denominations could be relied on to execute the anglicizing imperative; but not the Roman Catholic Church, still holding to French connections, as was the case in Trinidad and St Lucia. As would be expected, the Roman Catholic Church in Trinidad objected to secular schooling and operated its own schools without government support.

By the closing decade of the 19th century, the Catholic church accepted the anglicising policy of the Imperial government. The Mico elementary schools in St. Lucia, which had continued to operate with support from the Imperial government, were closed. The Crown took over the closed Mico schools and handed them over to the Catholic church to operate as denominational schools. This is one of the rare cases where non-denominational schools, with state support, were converted into denominational schools run by a denomination.

Denominational teacher education was pioneered in Trinidad by the Canadian Presbyterian church in the 1890s. Indian parents did not support the free secular ward schools. The Canadian Presbyterian church started missions to serve and convert the expanding Indian population. From about 1868, the church founded mission schools that taught both English and Hindi. In 1892, the church established a Presbyterian Theological Seminary to train Indian pastors for their missions. In 1894, the Canadian Presbyterian church, with government and planter support, established a Normal School to train teachers for its mission schools. Denominational teacher education in Trinidad, at its founding, served children of indentured Indians in the same manner as it had done for freed enslaved Africans in Antigua and Jamaica. The normal school offered the first avenue of entry to a non-manual occupation.

The Roman Catholic church, which had operated schools for decades, was permitted to establish a normal school to train female teachers in 1895. In 1902, the church was allowed to found a normal school to train male teachers. Secular and denominational normal schools then formed the structure of teacher preparation in Trinidad.

After the Mico Normal School in Guyana was closed in 1841, Guyana sent teachers to be trained in Antigua, Jamaica, Trinidad and Barbados. Teacher education in Guyana did not resume until 1928 when the colonial government established a non-residential teacher training centre for in-service teacher education. This training centre was updated in 1942 to become the Government Teacher Training College, later renamed the Cyril Potter Teachers College. Unlike the other colonies, Guyana had no history of denominational teacher education. Guyana came late to teacher education and when it did, offered secular teacher education.

The significance of normal schools in the Commonwealth Caribbean, which were rebranded as Teachers' Colleges by the turn of the 20th century, is that apart from theological colleges, they were the only form of tertiary education that existed in the sub-region prior to the era of self-government. Unlike Latin America and North America, no liberal arts colleges or universities were founded in the Commonwealth Caribbean. Elementary school, normal school and theological college became articulated and formed the major avenue of upward social mobility in the sub-region to children of African and Indian ancestry. Further, after the secondary education system was established for the children of middle and upper classes, elementary school teachers and ministers of religion leveraged their education to gain further education for themselves or to facilitate their children in gaining access to higher schooling — leading to access to university education outside of the region in England or Scotland or Canada, in the case of Trinidad.

### **The Failure of Elected Government:**

#### **Failure to Govern for the Common Good of All**

Knowing that some of the enslaved had accumulated capital through income earned from markets selling provisions as well as from artisan trades, a Baptist and Quaker alliance in England in the 1830s started to purchase lands in Jamaica, with the agreed intention of making these lands available to freed slaves on a not-for-profit basis. The alliance also developed a holistic concept of sustainable Christian communities separate from plantations. The foundational elements of these communities, called free villages, were: land tenure; home ownership; a church which often doubled as a school; family based on marriage; small farms supplying the domestic market; and participation in the democratic process. The Baptist/Quaker free village idea was adopted and implemented by all dissenting Protestant denominations. By 1844 there were 116 free villages across the island with 18,365 houses which housed approximately 90,000 or about 30 per cent of the newly freed. The most ardent participants in and supporters of denominational public education — elementary school, normal school, and theological seminary — came from this new segment of the society. Moreover, following the planter-inspired defeat of the Melbourne Government in England in 1839, missionaries of dissenting denominations in Jamaica, led by Baptists, mounted a massive campaign to register smaller settlers and free villagers to vote in general elections for the assembly to replace the white planter oligarchy.

Free trade became a reality in 1846 with the Sugar Duties Equalization Act. The price of sugar declined sharply. Several merchant houses in London financing the sugar trade went into bankruptcy. Inefficient plantations went into foreclosure. Some were either sub-divided and sold by lots or sold at rockbottom prices. London's loss was Kingston's gain, as local merchants gained market share in financing the sugar trade. Moreover, Kingston's merchants imported cheaper goods from North America to supply surviving plantations and the newly freed who had left the plantations. Free villagers bought lots, more affluent coloureds and Jews bought plantations. Local ownership increased at all levels.

The voter registration campaign succeeded. As a result of the General Elections of 1849, Coloureds, Blacks and Jews became the majority in the Assembly, and Whites the minority. However, the planting interest prevailed. Many Coloureds and Jews had become planters and merchants, whose economic interests depended on the export of sugar. The only major change was that a Jew became the Speaker of the Assembly.

In the 1840s, Black artisans, Coloured shopkeepers and Jewish retailers in Kingston formed a coalition — labelled ‘the Kingston Rabble’ by their detractors — that was successful in electing Jewish, Coloured and Black men to the Kingston Common Council who effectively loosened the monopoly of the White and Coloured ruling elite on making patronage appointments. Emboldened by this success, in 1850 the Kingston Rabble moved into the neighbouring parish of St David, formed an alliance with some of the leaders in free villages with the aim of ousting the white planting elite from the vestry and local government, and to elect Coloured and Black men to the Assembly.

The new ruling multiracial elite in the colony was determined to maintain the status quo it inherited. Similarly, the rival multiracial alliance of the Kingston Rabble and free villagers was equally determined to change the status quo. The two were on a collision course. The crash came in October 1865 when a protest march ended in a two-day riot in Morant Bay, the capital of the Parish of St Thomas-in-the-East. Eighteen people were killed on the first day, including several officials of the Parish, including the white Custos of the Parish and the second Black man to have been elected to the Assembly. The Governor responded by declaring martial law for 30 days, authorized a reign of terror by British troops and local militias and empaneled military tribunals which ordered the execution of hundreds. In addition, the troops destroyed over 1,000 homes, many chapels, schools and numerous shops. They also seized the cash, goods, horses and other possessions of those alleged to be rioters or supporters. In effect, the reign of terror decapitated the free village leadership and political opponents in St Thomas-in-the East.

The leaders of the protest-turned-riot who were killed, those summarily executed, and those humiliated by flogging or detention, all shared the same characteristics. They were formerly enslaved, but twenty-seven years after emancipation, were in the prime of their lives. There were several elementary school teachers among them. They were the success stories of emancipation. They were literate and educated men, comparatively well-off economically, politically active, socially conscious, community minded, outspokenly critical of corruption in central and local government, bias in the legal system, the corrupt administration of the justice system, unfair taxation, manipulation of the electoral system and malpractices in land tenure. They were the political opponents of the oligarchy in the parish and the colony, including the governor. Many were Baptists and Methodists motivated by deeply held religious beliefs. They risked the success they had achieved for themselves, against the odds, in order to give those who had been left behind the opportunity to do the same for themselves. They rejected second class status for themselves and demanded equality for all.

It is obligatory to note that the two contending groups did not remain homogenous over the period 1840–1865. Several leaders of the Kingston Rabble were seduced by patronage appointments by governors. Charles Price, the second black man elected to the assembly, was a contractor and became the beneficiary of government contracts. George William Gordon, son of a Scottish planter and slave mother, became one of the richest men in the country as a result of the economic fall-out following emancipation and the Sugar Duties Equalisation Act. In his second coming as a member of the Assembly from St Thomas-in-the-East, Gordon became the de-facto leader of the opposition against the ruling elite and the most vociferous and strident opponent of the governor. Price was killed by the rioters at Morant Bay. Gordon was executed by the state by order of the governor and without a fair trial. Indeed, it was Gordon’s execution that caused the outrage in England.

The governor was recalled to England in December 1865. A Commission of Enquiry was set up which reported promptly in April 1866. The only fact in dispute was the number of people killed and

executed. The most conservative counts were those of the Commission of Enquiry of 439 killed, 97 per cent male, and a newspaper, which had correspondents embedded with the troops, which put the number at 1,013. Up until the Morant Bay riot in October 1865, and inclusive of the Indian Mutiny in 1857, the English followed the Roman practice with respect to rioting — flog the rank and file and fling the ringleaders off the Tarpeian Rock. This was power exercised in the personalist idiom: open, transparent, honest and brutal.

Governor Eyre defended his actions on the basis of insurrection by black and mixed race men challenging British rule. The fact is that all involved were loyal British subjects. Further, the oligarchy and their sympathizers, and rioters and their sympathizers were multiracial, only varying in the average shade of pigmentation.

A robust and vigorous debate followed in England, as to whether Governor Eyre was a champion who had saved Jamaica from becoming another Haiti or should be charged for murder. The English intelligentsia was very deeply divided. Protagonists demanding the prosecution of Eyre included Charles Darwin, Thomas Henry Huxley, Herbert Spencer, John Stuart Mills, Professor Goldwin Smith of Oxford and Charles Buxton of the House of Commons. Defenders of Eyre included Charles Kingsley, Alfred Lord Tennyson, Charles Dickens, Thomas Carlyle and John Tyndall, eminent Physicist. The debate centred on race and the rule of law in the Empire. It ended on a stalemate. Eyre was never prosecuted, but his career ended. However, going forward there were three Caribbean and empire-wide outcomes of the small town riot at Morant Bay:

- Beginning with Jamaica in December 1865, and with the exception of Barbados, elected assemblies in the sub-region voluntarily relinquished governance and invited the Crown to govern directly through single chamber Legislative Councils comprised of Crown-appointed members.
- Crown colony government immediately embarked upon an agenda of reforms to address the grievances expressed by the Kingston Rabble and the free villagers, but applied across the sub-region. These included: significant funding for public education; major reforms of the judiciary, policing and public health; the creation of civil services; and the disestablishment of the Anglican Church.
- No governor in the British Empire employed martial law to eliminate political opponents of the ‘darker’ races within the colonies. Power shifted to the materialist idiom: covert, manipulative, anonymous, allowing deniability while using material means to ostracize and punish opponents.

### **The Failure of Crown Colony Government: Failure to Govern for the Common Good of All**

Increased funding for public education from 1870 to 1900 was a great boon for public education. Elementary education and normal schools were expanded. By 1900, Jamaica ranked 14th and Barbados 15th in the world in the provision of elementary education to their populations. These two colonies were only surpassed by nine countries of Western Europe, Australia, New Zealand, the United States and Canada. High school education was fully established across the sub-region, with students sitting examinations set by Cambridge University. High schools across the sub-region relied heavily on teachers recruited mainly from Britain. The disestablished Anglican Church took on a socially activist role and

became one of the leaders in girls' education. The Roman Catholic Church, previously excluded, also became a significant education provider, especially in the education of girls. While previously, colonies established boys' high schools, by the turn of the 20th century the orientation was to establish high schools for girls.

Dissenting Protestant denominations, which had partnered in and had pioneered public education, were experiencing division from within as 'native' teachers and ministers challenged missionaries concerning policies and purse. For example, in 1892 the government in Jamaica introduced free elementary education which meant that the state paid the costs of operating public schools. However, because of ownership of the plants, denominations continued to manage schools and had the power to hire and fire teachers. However, elementary school teachers, who were 90 per cent male, objected to the power of school managers to fire teachers for not doing church work. They founded the Jamaica Union of Teachers in 1894. These trophies of missionary grace now challenged their main partner in empowerment. Missionary societies retreated.

In 1865 Jamaica had six normal schools, five training male teachers and one training female teachers. By 1900 there was only the Mico Normal School training male teachers and three training female teachers: one government, one Moravian and one Roman Catholic. The Mico Normal School in Antigua, which trained male teachers, was closed — leaving the Moravian Female Teacher Training School. The Rawle Training Institute in Barbados was coeducational. In 1902, Trinidad had four teacher training institutions: one owned by the government which had one section training male teachers and another section training female teachers, the Presbyterian institution which trained male teachers, one Roman Catholic institution which trained female teachers and another that trained male teachers. The Commission on Education, 1914 to 1916, recommended the closure of all institutions training male teachers. This was in exchange for offering black, brown and Indian boys bursaries to attend high schools. A similar scheme had been introduced in England in 1907. The government college did not close its male section. The Presbyterian Normal School finessed the situation by starting to admit female students in 1916. The Roman Catholics closed their male college in 1831, after its principal died. By the 1930s, the three centres of teacher education in the Commonwealth Caribbean — Jamaica, the Eastern Caribbean and Trinidad — were all structurally biased against training male teachers. The parsimonious states sought no financial advantage from this shift in the gender of teachers. From as early as 1900, male and female elementary school teachers in Jamaica were paid the same salaries.

Crown colony government started out by addressing the agenda that had been advocated by those who embraced the promise and the possibilities of free societies premised on citizenship and equality. Many of the leaders of this movement had paid with their lives in 1865 or had been humiliated by flogging and unjustified detention. However, by the end of the 1880s the Crown had reversed itself. The basis of the reversal was the posture of the Colonial Office on inferiority of the darker races of the Empire. This was eloquently expressed by James Anthony Fourde in his book the *English in the West Indies*'. The rebuttal, *Fourdacity*, by J. J. Thomas, elementary school teacher of Trinidad, made no difference to imperial policymaking.

The economic downturn of the 1890s provided the opportunity for the Crown to change sides. The Crown assumed greater responsibility for public education in the colonies by introducing free elementary education across the sub-region by 1900. However, expenditure on education was capped to no more

than ten per cent of government revenue. Many small schools were closed. Policies were implemented to bend education to serve the interests of agriculture, particularly sugar. The curriculum of elementary schools were amended to include agricultural and vocational training. In Jamaica, the Government Farm School was established in 1910 and in Trinidad the Imperial College of Tropical Agriculture was founded in 1921.

However, by the 1930s Crown Colony Government had alienated many of the graduates of teachers colleges and the high school system that it had created. Central to their grievance was that the Crown imported talent from Britain to head and hold the vast majority of senior posts in the public service. British recruits were the headmasters and headmistresses of secondary schools, the principals of teachers colleges, the heads of departments and senior ranks of the civil service and of the police force. This essentially placed ceilings on how far educated locals could rise in their aspirations for upward social mobility.

Across the sub-region, teachers' college graduates and high school leavers, who had gained access to university education abroad, became the chief nationalists stridently advocating sovereignty for colonies. When riots related to the fallout from the Great Depression occurred across the sub-region in the 1930s, the Crown confronted general disorder. This, plus the diminution of its imperial power as a result of World War II, prompted the Crown to voluntarily concede constitutional reforms to return to elected governance in the colonies through universal adult suffrage, representative government and the hand-over of the leadership of the civil service from British officials to nationals.

Crown colony government faltered for the same reason that elected assemblies did after 1865. It failed to govern for the common good of all by choosing to serve itself and the ruling elites of the colonies. As was the case in Jamaica in the period leading up to the riot in Morant Bay, the chief political opponents of the Crown were those who had been successful in the education system created, including teacher education.

## THE ERA OF DEMOCRATIC GOVERNANCE: 1944 TO THE PRESENT

The era of democratic governance in the Commonwealth Caribbean began with general elections in Jamaica in December 1944 — conducted based on the principles of universal adult suffrage and responsible government. All persons 21 years or older were eligible to vote and to offer themselves as candidates. Only Britain and New Zealand had universal adult suffrage at that time. Other colonies in the sub-region followed on the same constitutional basis.

In the 72-year period since elected representatives had to face an electorate of all the people, education policies have been implemented every five years, resulting in the following:

1. The establishment of university education in the sub-region, beginning with the University of the West Indies in 1948.
2. The creation of indigenous capacity to train secondary school teachers, first through UWI in 1953.
3. Almost every state without a Teachers' College established one, and those with colleges expanded existing colleges and in Jamaica and Trinidad founded new colleges.

4. Teacher education became the supplier of trained personnel for almost every occupation requiring educated personnel, as thousands of trained teachers left teaching for opportunities that opened up in the new nations.
5. Sub-regional teacher education capacity was created to meet demands for all levels and for all types of teachers. Teacher education and the teaching profession in the sub-region is fully ‘Caribbeanized’.
6. From being a new importer, the Commonwealth Caribbean has become a net exporter of teachers. Its graduates have proven to be effective teachers internationally.
7. The Commonwealth Caribbean is on the global frontier of the changed status of women in society. Over the last 50 years, girls and women on average have performed better than boys and men at every level of the education system. Education credentials have been leveraged into jobs, jobs into income, and income into homeownership and other symbols of socioeconomic advancement. Women have shattered glass ceilings in the public sector and in several areas of the private sector. The middle classes across the region are predominantly female.

Between the 1950s — when ministerial government was inaugurated — and the 1980s, public education and teacher education were propelled on a trajectory of policies which expanded schooling at all levels, improved quality and integrated and articulated all levels of education. Government became the major provider of teacher education. Secular education became the primary modality. Denominations retreated to chaplaincies in colleges and schools.

Since the 1980s, public education and teacher education have been confronted with declining public resources, in real terms, to fund education. Governments faced with annual fiscal deficits, rising national debt, economic downturns, IMF structural adjustment programmes with their pre-conditions, now place increasing priority on policies premised on the notion that fixing the economy and curtailing rising crime takes precedence. Further, while the school age populations have been declining over the last 20 or so years, the savings have gone to subsidize budgets and not accrued to the benefit of public education or teacher education.

As a result, only some countries of the Commonwealth Caribbean have attained the goal of all teachers entering the teaching profession being previously trained as teachers. Some of the countries achieving this goal have had setbacks along the way. For example, in the mid-1980s Jamaica reached 95 per cent and was in full sight of having 100 per cent of its primary school teachers being college trained. This coincided with the implementation of rigid IMF structural adjustment programmes. The college training the largest number of primary teachers was closed. It took 10 years from this capacity to be reinstated and another 10 years before the goal of a fully college trained primary teaching force was achieved. The Bahamas, Barbados, and Trinidad are the other countries of the sub-region which have achieved fully college trained teachers at the primary level. In these countries, new graduates from colleges training teachers are faced with unemployment.

### **Widening Faultlines in Democratic Governance in the Sub-region**

Faultlines emerging in democratic governance in the Commonwealth Caribbean can be summarized briefly as follows:

- a. The failure of the development paradigm. After 50 years, the result is almost un-payable public debt, persistent fiscal deficits and increasing determination of national policies by external agencies, despite protestations to the contrary.
- b. The recurring impotence of elected governments to keep faith with their electorates. The Commonwealth Caribbean pattern is to regularly change the political parties forming the government through the ballot box. However, changes between governing and opposition parties often mean more for the persons elected than those who elected them.
- c. Increasing inequality. Surveys of living conditions across the region show that the education gap between the richest and the poorest quintiles is narrowing, while the income and wealth gap is widening. Tertiary education is fast becoming the principal differential at the same time that the cost of colleges and universities place access outside the reach of the poorer quintiles.
- d. The steady delinking of education from upward social mobility through the escalation of credentials required for jobs, downsizing in the public and private sectors, and unemployment among highly qualified mature adults.
- e. High unemployment among educated young people, especially those from backgrounds of social disadvantage. Many students are leaving from the geographical and socioeconomic origins of their parents, taking and more elevated educational routes, but ending at the same socioeconomic destination.
- f. Warring inner city communities, over which states have minimal control, with alarming rates of annual carnage.
- g. A growing underclass of young men, many of whom embrace a culture of death.

### **COMMONWEALTH CARIBBEAN PARTNERSHIP PARADIGMS IN TEACHER EDUCATION**

Since 1953, when ministerial government began to be inaugurated, the sub-region has devised paradigms to isolate and insulate the education and certification of teachers from direct political influence and control as well as to ensure high standards. Consistent with their history, ten states in the Eastern Caribbean and five states in the Western Caribbean have formed separate partnerships with the University of the West Indies (UWI), the regional university. The main elements of the partnership are:

- Ministries of Education retain policy direction and management of their national colleges.
- Ministries have devolved matriculation requirements, duration of programme, curriculum, quality assurance, validation and award of credentials to UWI Schools of Education at the Mona and Cave Hill Campuses.
- UWI has created, through its Ordinances: Joint Boards of Teacher Education comprised of principals of colleges, representatives of Ministries of Education, representatives of Teachers Unions and of the UWI. The chairmanship of Joint Boards resides with the UWI.
- UWI provides leadership, research and development, and policy advice in support of teacher education in these states

These partnerships have existed and evolved over the last 60 or so years and have created significant social capital in the sub-region. This includes collaborative relationships between both Joint Boards.

Consistent with their histories, Trinidad and Tobago and Guyana have created national partnerships for teacher education. While they share some features of the functional cooperative partnerships in the Eastern and Western Caribbean, their spheres of operations are national.

Trinidad and Tobago started in the 1950s with a Ministry Board of Teacher Education with members from colleges training teachers, the Teachers Union and the University of the West Indies, St Augustine. Teacher education has now been devolved to three universities: The University of Trinidad and Tobago; the University of the West Indies (St. Augustine campus); and Southern Caribbean University, a Seventh Day Adventist institution.

In Guyana, the Ministry of Education has maintained the mechanism which validates teacher education offered by the Cyril Potter College of Education established in 1942. Teacher education programmes offered by Cyril Potter are fully articulated with the University of Guyana, next door.

## **THE COMMONWEALTH CARIBBEAN:**

### **LESSONS LEARNED WITH RESPECT TO POWER, POLICY AND MARGINALIZATION**

The optimistic slogan for teacher education when it was first established in the Caribbean in the 1830s could well have been ‘Teacher education for a better Caribbean: Conditions for quality, pedagogy, policy and professionalism’. With the benefit of 183 years of hindsight, there are numerous lessons related to power, policy, marginality and marginalization that are crystal clear. These lessons are best categorized and listed succinctly.

#### **Imperial and Local Power**

1. Imperial power is fickle. Despite the galvanizing force of imperium, its agents are not monolithic, and hence its actions are highly unreliable because its interests change with the imperatives of different times and situations as well as personnel. Accordingly, imperial power will abscond from coalitions, change sides more than once, is vulnerable to its own internal contradictions and prone to believe its own propaganda. The most effective approach is to make the best use of imperial policy support when and while it lasts.
2. Local power is always the outcome of contestation between contending groups. The default is for those having the advantage to hold on to that advantage for as long as feasible. Patronage is a principal means of rewarding supporters and of seducing or silencing opponents. Local power will accept the hegemony of imperial power if this allows it to retain control. Further, when a contending group succeeds in grasping power from its holders, while its initial action may promise change, a common tendency is for the new holders to quickly cave in to the perquisites and privileges of the status quo. Accordingly, hopes of transformation pinned on ascriptions of place of birth, race, colour, class, political party and political ideology most often disappoint. These are all vanity.
3. The decisive force for change has been the agency of the marginalized in carving out their own space for advancement, despite the odds. Free villagers set up parallel communities to planta-

tions. Elementary school teachers socialized and assisted their students in setting their sights higher than manual agricultural labour. Some teachers used the education provided by the teachers' college to access occupations outside of teaching. Some teachers and students used their education to migrate and to find opportunities elsewhere. Others became activists who confronted the powers that be at Morant Bay and as nationalists demanding independence. These are all examples of cross-purpose between policymakers and participants in education. Terms such as dysfunctionality, inefficiency, brain drain, disloyalty and ingratitude reflect the perspective of power and not of the marginalized in society.

4. The most reliable partners of the marginalized in society have been persons of different social stations who by reason of conviction and conscience find common cause and commit to work with them in hurdling the obstacles they face. In this circumstance, place of birth, race, color, class, gender and all other such ascriptions are immaterial. However, when constructive, collaborative, cooperative and meaningful actions are undertaken across these social divides, which invariably involves real risks and dangers, bridges of understanding, bonds of solidarity, shared identities emerge that manifest our common humanity and embrace the common good of all. Further, people of conscience and conviction are more likely to sustain their efforts and therefore provide sources of continuity across political regimes and generations.
5. The most effective coalition for transformation is between those enjoying social advantage who live their lives for more than themselves and those of the marginalized who, having advanced in society, decide to use their success not as a symbol of superiority, but as a means of improving the life chances of those who have been left behind. This coalition seeks to change the play and not just the players.
6. The timeframe required for social transformation goes beyond policy timeframes of five, ten or even fifteen years. Real societal transformation is oft times outside the lifetimes of the individuals who initiated them. Institutions are needed to connect individual contributions across generation and policy time frames. To contemplate education for teachers without an institutional framework is to engage in abstraction. The genius of de la Salle and Franke was to connect individuals and institutions. The lasting contribution of dissenting Protestant denominations and Mico in the Commonwealth Caribbean is the institutional structure they created.

### **The Nature of Marginality**

Like all other social and societal phenomena, marginality is neither absolute nor necessarily permanent. It is an aspect of society with which to contend.

- Marginality does not define our humanity or determine who we are.
- Marginality presents obstacles, but is not the final arbiter of becoming.
- Marginality is not a social disease or a terminal condition.
- Marginality is a social condition of society that can be changed.
- Marginality is rooted in inequities and injustices in society that must be confronted by people of conscience determined to achieve justice and equity.

- Marginality is not a justification for evil.
- The great pitfalls of marginality are helplessness, hopelessness, meaninglessness and alienation, because these make marginal people vulnerable to manipulation by the centralized.
- Almost all Caribbean peoples have roots in marginality. The history of Commonwealth Caribbean peoples is most accurately written from the perspective of the rise of the marginalized.

### **Collaborators Perpetuating Marginality**

Perpetuation of marginality in any society is the consequence of all or some of the following:

- a. Political parties and governments that use political power principally for the benefit of their members, supporters and financial backers.
- b. Corporations run by their directors and managers primarily for their own benefit despite rhetoric to the contrary.
- c. Schools and colleges run for the benefit of principals, teachers and lecturers.
- d. Churches run for the well-being of their bishops, pastors, elders and deacons.
- e. Unions that serve mainly the interests of their leaders and delegates.
- f. Multilateral and bilateral agencies run primarily to serve their own agendas, despite their lofty rhetoric.

### **The Power of the Marginalized**

The power of the marginalized exists in:

- An indomitable spirit that refuses to be broken by circumstances.
- Embracing life and a culture of life, and rejecting a culture of death.
- Confounding stereotypes of marginality by not conforming to them.
- Confronting assertions of inferiority by commitment to competence.
- Engaging with contemporary challenges constructively and creatively.
- Seizing opportunities with integrity, imagination and inventiveness.
- Taking the moral high ground in transactions with the powerful.
- Persevering despite setbacks.

The experience of Commonwealth Caribbean teachers and teacher education, is that sustained exertion of the power of the marginalized prevails. Commonwealth Caribbean societies today have been built largely by the strivings of those who were initially marginalized. In this regard, teachers and teacher education have been principal agents, and this is particularly so with respect to peoples of African and Indian ancestries.

## THE CONTEMPORARY GLOBAL SITUATION

Human civilization is at Edubba 4.0. Microchips, digital technology, fiber optics and satellite technology have combined to create information technologies with internets, intranets and clouds. Schools and learning can take place online, synchronously or asynchronously or some mixture of both, given the playback modality. Documents and data can be stored and retrieved almost instantly. Online libraries are vast, allowing easy access to a store of knowledge without leaving home. Books, periodicals and other materials can be published and distributed globally, even without editorial filter or fact check. These new technologies are disruptive, offering possibilities to both the centralized and the marginalized, given the fact of anytime and anywhere connectivity. Teaching, librarianship and publishing are being fundamentally restructured. The question arises, to serve what ends?

Two hundred years after teacher education began to spread outside of Western Europe, global power has changed fundamentally. The British and French empires are no more. Colonies have become sovereign nations, which currently number about 196. Democracy is now the default paradigm of governance. The United States is the reigning superpower among nations alongside regional powers in Africa, Asia, Europe and Latin America. However, not even American democracy can dictate the actions of multinational corporations and banks providing international financial services. Sovereignty of the people is almost at the mercy of corporations. There is a great divide between electorates and multinational corporations and banks operating within national borders. While communication, news, money, learning, publishing, document and data transfers, entertainment and rockets now cross national borders with amazing speed, the movement of most people is constrained by national requirements for permits and visas, involving months or years to process. Wealth can be transferred in minutes but poverty is imprisoned locally, even in the powerful nations.

At the same time, within many nations power, wealth and resources are being concentrated in fewer and fewer hands. As Fareed Zakary has written, there is the Rise of the Rest and the Decline of the West. Socioeconomic inequality is galloping, especially in the older modern societies, including the Commonwealth Caribbean. Sanitized terms such as the ‘working poor’ and the ‘new poor’ dull the reality of what is taking place in suburbs. Those in Western countries who believe that these countries belong to them by reason of ancestry, blame aliens for their plight. The fact is that more and more people — aged and young, especially young men — are being marginalized, although they are better educated.

Nationalism as the glue of peaceful living together appears to have run its course. Citizenship is constantly being compromised by those holding power and wealth. Many are retreating from public secular education, which is the prime instrument of nationhood. Moral clarity is in retreat as might and wealth are deemed right and good.

What of teacher education in this era? Are there any insights from the Commonwealth Caribbean experience that may be useful? Allow me to merely list a few.

## GOING FORWARD

Jean-Baptiste de la Salle and Augustus Hermann Franke were right on a number of levels. Teacher education must prepare teachers for schools providing education for all social ranks of society and must be inspired by the highest ethical vision of human society and human personality. Teacher education

must be part of an institutional framework that reinforces and concretizes what it is and what it does. Institutions preparing teachers and the essence and mission of teacher education are inextricably linked. However teacher education is reconfigured in relation to new information technologies, colleges and universities; preparing teachers must be what they do. They must advance the life changes of students, inspire hope, be sources of connecting students to meaning in their lives and society; and be instruments that motivate students to take on the challenges of their time and place.

The Prussians appear to have been right nearly 300 years ago in implementing a comprehensive, coherent and cohesive system of public education with pre-service teacher education being mandatory prior to employment and where teaching as a public profession had high social standing. Countries that have followed this route seem to have fared better than those that cherry-picked Franke's framework and selectively transplanted elements into their own systems.

Advances in human civilization usually have two principal sources. First, empirical assessment of facts about what is and the application of logic and conceptual schemes to explain the facts. Teacher education must be evidence-based. However, evidence-based teacher education is necessary, but not sufficient. The second source of advance in civilization is equally important. It is critical to transcend the fact of what is, in order to visualize what should or ought to be. Reason and moral imperative must act in concert. The dangers to be avoided are absolute confidence in impeccable logic and absolute certainty that God has spoken and consequently using either to justify fatal and final actions against others. For it is life and not death that ultimately triumphs.

All would do well to emulate Commonwealth Caribbean audacity toward marginality and marginalization, and understand the agency of those who are marginalized and the power of the marginalized. Overcoming marginality is the engine and energy of societal transformation.

Teacher educators must exemplify values that are consistent with the vision and the mission of teachers in their societies, because it is virtue that persuades. Teacher educators must employ reason in applying teacher education to their specific circumstances because facts and logic matter; but they must also transcend facts and logic in order to apprehend what ought to be in their specific circumstances. However, being human we must employ reason and transcendence with humility, leaving room for error in our logic and doubt in our revelations.

To God be the Glory.

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# The Use of Video Feedback in Teacher Education

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## INTRODUCTION AND PURPOSE OF THE STUDY

Improving educational outcomes for students, with a focus on teacher education, continues to be at the forefront of discussion in the U.S. (Ball & Forzani, 2009). Teacher education has also come under scrutiny, with many weighing in on what must be included in high quality teacher preparation programs to ensure that candidates are prepared to meet the demands of teaching. Ball and Forzani (2009), argue that “the work of teaching”, includes knowledge that “skillful teaching requires appropriately using and integrating specific moves and activities in particular cases and contexts, based on knowledge and understanding of one’s pupils and on the application of professional judgement” (p. 479).

Historically, teacher education has focused on many aspects of preparing teachers, including a focus on improving teacher quality by forming new approaches to teaching (Ball & Forzani, 2009). In the early 1990s, teacher education focused on three major areas, which according to Wang and Hartley (2003) are supporting preservice teachers to: “(a) transform their beliefs, (b) acquire pedagogical content knowledge, and (c) develop pedagogical understanding of diverse learners” (p. 109). In addition, many researchers argued that teacher education programs needed to teach preservice teachers how to become reflective about their teaching practice, in order to improve instruction (Dewey, 1933; Schon, 1987; Calderhead, 1993; Vacca, Vacca & Bruneau, 1997; Loughran, 2002).

According to Darling-Hammond and Bransford’s (2007) *Preparing Teachers for a Changing World*, teacher education program pedagogy includes: analyses of teaching and learning through observation, case methods, video analysis of master teachers teaching, examining student work, reflective journaling, microteaching lessons, and fieldwork.

Research suggests teacher candidates benefit from observing master teachers and from implementing their own lessons with feedback. Student teaching is incomplete without providing candidates with “opportunities for practice with continuous formative feedback” (Darling-Hammond and Bransford, 2007, p. 410). While video feedback is relatively new to the field, scholars contend that it provides opportunities which increase reflectivity about teaching (Calandra, Brantley-Dias, Lee & Fox, 2009; Rich & Hannafin, 2009; Ruebel & Galloway, 2013), generates increased discussion about teacher practice and students’ learning (Rosaen, Lundeberg Cooper, Fritzen & Terpstra, 2008; Sherin & van Es, 2005), and allows teacher education faculty to evaluate lesson components more effectively (Capizzi, Wehby, & Sandmel, 2010; Rich & Hannafin, 2009). The use of video feedback allows teachers to capture and review their own teaching practice. Reviewing video footage also facilitates analysis and synthesis of teaching practice and the explicit feedback directly supports reflexive praxis on specific teaching strategies, lesson components, and classroom interactions (Rich and Hannafin, 2009). Video feedback further fills the gap of supporting reflection that addresses specific student and teaching evidence (Rich and Hannafin, 2009). The goal is to support pre-service teachers as they become more effective practitioners sooner in their induction to in-service teaching.

## **Purpose**

This study aims to share how using video together with focused feedback can effectively scaffold reflection and pre-service teacher success prior to student teaching. This experience is realized in year four of their teacher preparation program and is a full-time, field based experience. Student teaching occurs during the final semester and comprises 14 weeks in an elementary classroom where candidates are mentored by experienced and exemplary classroom teachers. The study focused on the question: *How does video feedback affect preservice teacher candidates' ability to become more reflective about their teaching practice?*

## **THEORETICAL FRAMEWORK**

### **Reflective Thinking**

Dewey (1933) introduced reflection as an active and deliberate thought process of interconnected ideas that take into account underlying knowledge and beliefs (Hatton & Smith, 1995). Dewey (1916) asserted that teachers should become thoughtful education students, and that they should continue to grow in reflection. Schon (1987) further expanded Dewey's notions and posited that a reflective practitioner must combine pedagogical expertise with personal insights and artistry or "the kinds of competence that practitioners sometimes display in unique, uncertain, and conflicted situations of practice" (p. 22). Rodgers (2002) expanded on Dewey's definition by defining four criteria for reflection:

1. Reflection is a meaning making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. It is the thread that makes continuity of learning possible, and ensures the progress of the individual and, ultimately, society. It is a means to essentially moral ends.
2. Reflection is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry.
3. Reflection needs to happen in community, in interaction with others.
4. Reflection requires attitudes that value the personal and intellectual growth of oneself with others. (Rodgers, 2002, p. 845).

Rodgers (2002) argued that while teacher reflection is necessary and significant, reflection definitions seemed to vary and the less than concrete nature of how reflection was defined made it difficult to measure. These criteria for reflection were developed in order to more adequately teach and measure reflective thinking.

### **Developing Teachers as Reflective Practitioners**

Reflective practice and reflective teaching requires that teachers analyze, discuss, and evaluate practice, which are all part of professional development (Calderhead, 1993; Vacca, Vacca & Bruneau, 1997; Loughran, 2002). When teachers engage in reflective thinking, they become aware of their intuitive knowledge and engage in practices that enrich their teaching (Vacca, Vacca & Bruneau, 1997). Loughran (2002) asserted, "reflection is effective when it leads the teacher to make meaning from the situation in

ways that enhance understanding so that he/she comes to see and understand the practice setting from a variety of viewpoints.” (p. 36). In this way, reflection can also be seen as a tool for critical thinking and problem solving (Schon, 1987; Choy & Oo, 2012)

Teacher education programs continue to promote reflective practice, and there is a body of literature that chronicles the way preservice programs engage students to scaffold their ability to reflect on their own teaching practices. (Lee, 2005; Lee, 2007; Robinson & Kelley, 2007; Campoy, 2010). Richardson (1990) asserts that reflection can help us to think critically about what we have learned and have yet to learn, and make us more likely to use the knowledge, resulting in new thoughts that become the basis for further action.

Various methods have been used to support and promote reflection in preservice teacher education. Lee (2007) found that response journals provided concrete opportunities for preservice teachers to routinely participate in reflective thinking and were extremely beneficial in teacher preparation. In addition, video-taping is also used as a means for teachers to engage in reflective thinking (Robinson & Kelley, 2007). However, “while video is an effective tool for aiding the reflection process, evidence of one’s reflectivity is not easily documented” (Robinson & Kelley, 2007, p. 3). Rich & Hannafin (2009) found that video annotation tools helped to capture teaching in context and examining teaching in an authentic context is what seems to be most important in developing teachers’ ability to be reflective.

Based on the premise that individual reflectivity is not easily documented (Robinson & Kelley, 2007; Rodgers, 2002), and the assertion that teacher candidates need more support for developing necessary skills and dispositions (Darling-Hammond, et. al, 2007) within an authentic context (Rich & Hannafin, 2009), this study was designed to combine the benefits of video feedback and the need for reflection, in order to examine the effects on teacher candidates’ reflective thinking.

## METHODOLOGY

Participants in this study were 22 pre-service teachers in an integrated elementary and special education program at a small private university in the north-eastern region of the United States. Of the 22 participants, 19 were female undergraduate students and three were male. One student self-identified as African American and the others identified themselves as white. Participants were all in their third year of a four-year teacher education program and taking elementary and special education methods classes while completing 50 fieldwork hours in elementary school classrooms. Fieldwork requirements in their coursework outlined that participants teach two lessons and video-record at least one lesson, while participating in a classroom context alongside a cooperating in-service teacher.

Teacher candidates first learned how to code lessons while watching videos of master teachers coding lessons during methods courses with the researchers. This was done to afford practice coding so that students and researchers would be able to discuss the coding process. This occurs during a debrief session after students had video-taped their lessons. In addition, while viewing the master teacher videos, researchers were able to discuss and provide examples of modeling, differentiation and opportunities for practice which comprised the a priori coding protocol teacher candidates were asked to use when viewing their own video-taped lessons. Researchers who were also teacher educators and course instructors, coded the same lessons that candidates video-taped and also took extensive fieldnotes. After coding the videos, researchers met individually with each candidate, and the meeting was also video-taped

and transcribed. The transcriptions provided researchers with an opportunity to examine how teacher candidates were reflecting on the videos and also to examine the insights on teaching practices related to the feedback being given during the debrief sessions. These multiple data sources added breadth and scope to the study (Creswell, 1999) and offered opportunities to triangulate and elaborate on results (Caracelli & Greene, 1993).

Qualitative data were gathered over the 2013-2014 school year and focused on the question: How does video feedback affect pre-service teacher candidates' ability to become more reflective about their teaching practice? Researchers used initial open coding (Strauss & Corbin, 1998; Saldaña, 2009) to look for patterns via inductive thematic analysis (Ely et al. 1991) that would help to answer the research question. Open coding was initially focused on key words related to Rodgers (2002) categories for reflection which helped to determine how students were being reflective related to their teaching practices and what influenced these reflections. Data sources included videos, student-written lesson reflections (pre-meeting reflections), video feedback meeting transcripts, student post-meeting written reflections, and fieldnotes. These data sources were analyzed and as initial codes emerged related to the reflective categories, they were then refined and collapsed by researchers who used axial coding (Saldaña, 2009) to extend the initial coding into final categories. Axial coding according to Saldaña (2009) is appropriate for studies using multiple data sources and grounded theory (p.159). Initial and final codes were defined using Rodgers' (2002) definitions of reflection criteria. Table 1 illustrates the multiple data sources that were coded using four criteria for reflection as defined by Rogers (Rodgers, 2002, p. 845). Final axial codes were also defined based on Rodgers' (2002) definitions as well as the side-by-side comparison of students' pre- and post-meeting reflections, in addition to the descriptive coding of meeting transcripts (See Table 2). These data were analyzed for patterns of specific evidence of Rodger's criteria for reflection.

| <b>TABLE 1. INITIAL CODES</b>      |   |
|------------------------------------|---|
| <b>Initial Coding Categories</b>   | <b>Data Sources Analyzed</b>  |
| Reflection as deeper understanding | Field notes<br>Transcripts<br>Pre meeting reflections<br>Post meeting reflections |
| Reflection as inquiry              | Field notes<br>Transcripts<br>Pre meeting reflections<br>Post meeting reflections |
| Reflection as collaboration        | Field notes<br>Transcripts<br>Pre meeting reflections<br>Post meeting reflections |

| <b>TABLE 1. INITIAL CODES</b>            |   |
|--|---|
| <b>Initial Coding Categories</b>         | <b>Data Sources Analyzed</b>  |
| Reflection as deeper understanding       | Field notes<br>Transcripts<br>Pre meeting reflections<br>Post meeting reflections |
| Reflection as desire for personal growth | Field notes<br>Transcripts<br>Pre meeting reflections<br>Post meeting reflections |

## DATA SOURCES AND EVIDENCE

Researchers coded for evidence of content knowledge, pedagogical skills and dispositions by first reviewing the videos for modeling differentiation and opportunities for practice based on the a priori protocol. Following this, the researchers summarized with notes in order to discuss relevant issues and plan feedback during post lesson meetings with each candidate. Researchers then coded the transcripts of the reflective meetings with descriptive coding and pre- and post-meeting reflections. This approach met Rodger’s (2002) criteria for reflection as shown in Tables 1 & 2. As researchers coded the data, several themes emerged pertaining to aspects of reflection which revealed students’ knowledge skills and dispositions about their teaching practices as well as their ability to be reflective. Drawing from the conceptual framework of reflective thinking, Rodgers’s criteria for reflection were again used to further codify the data into final codes as shown in Table 2.

| <b>TABLE 2. FINAL CODES</b>   |  |
|---|--|
| <b>Final Axial Codes</b>  | <b>Data Sources Analyzed</b>                                       |
| Reflection as collaboration   | Pre meeting reflections<br>Post meeting reflections<br>Transcripts |
| Reflection as inquiry   | Pre meeting reflections<br>Post meeting reflections<br>Transcripts |
| Reflection as professional growth<br>(Combines deeper understanding and desire for personal growth) | Pre meeting reflections<br>Post meeting reflections<br>Transcripts |

A descriptive analysis of meeting transcripts, along with the axial coding of student pre- and post-meeting reflections, revealed that student reflections varied widely in evidence for reflective thinking and overall coherence of candidates' reflections on their own teaching. Candidates met with researchers after coding videos on their own and writing initial reflections on their lesson. The researchers summarized the data from the coding of the videos and shared their perceptions with candidates around the practices of modeling, differentiation, and opportunities for practice, as well as the candidate's impact on student learning. Then, candidates wrote follow-up reflections about their practice and submitted them to researchers. Researchers used a side-by-side comparison of pre- and post-reflections and again coded using Rodgers (2002) criteria for reflection. In the final axial coding process, the codes of reflection as deeper understanding and reflection as a desire for personal growth were collapsed into one code: reflection as professional growth since the participant responses seemed to capture the major themes from both of these original categories of reflection which stood out as indicating overall professional growth. The following three sections detail this analysis of the data.

### **Reflection as Inquiry**

"Reflection as Inquiry," as defined by Rodgers (2002), is a systematic, rigorous way of thinking that stems from scientific inquiry. This was a significant theme as candidates appeared to have the most difficulty with reflection as inquiry, whereby there were few instances where candidates came to this aspect of reflection on their own. However, this presented a significant opportunity for researchers to scaffold this criterion for reflection with both the coding protocol that candidates and researchers used to code the lesson and with the discussion that took place during the lesson debrief with candidates and researchers. These data revealed that candidates were, in fact, able to be analytical about their experiences. They also considered what they would do next time or in another situation similar to what they experienced in the lesson they were teaching, in six out of nine post-lesson and seven out of nine post-meeting reflections. Transcript excerpts of post-meeting reflections illustrated and provided additional evidence of reflection as inquiry. For example, during the debrief meeting with researchers, Warren stated: "Through my teaching of the concept and the students' response, I felt as if I was rather effective." This analysis of his overall impact as a candidate reflects that he is systematically considering his instructional efficacy. Similarly, Melanie reported: "Overall, the students' work showed that they understood the vocabulary word map technique." Paying attention to student outcomes during reflections moves preservice teachers toward a professional teaching stance and ultimately demonstrates reflection as inquiry. In addition, some candidates commented specifically on what they would do next time — which demonstrates how reflection as inquiry moves instruction toward greater efficacy. For example, Linda wrote; "Another thing I need to work on is my affect when teaching a lesson. Instead of just thinking I am showing affect, I think it would be a good idea for me to actually practice it so I know that when I go to teach I will smile and show emotion towards the students." Aaron also reflected: "When modeling, I should write out my example so kids can refer to it". Collectively, the pre-service teachers provided solid evidence of reflective inquiry during the reflective meeting process.

## **Reflection as Collaboration**

Based on Rodgers (2002) criteria, reflection must happen in a community and is based on communication with others. Evidence from pre- and post-meeting data sources showed reflection as collaborative in nature. Post-reflections indicated that many pre-service teachers found the discussions with researchers during the reflection meetings helpful for reflecting on their practice and cited this in their post-meeting reflections. For example, Abigail wrote:

Before the meeting, I had not thought too much about my tone and stance around the children, however once it was mentioned, I do believe that I had a relatable tone with the students. I think I made them feel comfortable in the classroom and was able to get them to engage in the beginning of the lesson. In the future, I will be more mindful of my tone and body language (Post Meeting Reflection 1).

In this reflection, Abigail is reflecting on her stance and voice and how that impacts the students in the video based on the feedback she received from researchers during the feedback meeting. Within reflection as collaboration, pre-service teachers' responses were also coded for seeing things newly within their experiences after debriefing with researchers in the post-lesson conference. It was evident that these post-lesson conferences helped candidates demonstrate this disposition. Nathan demonstrated this as he reflected:

When I did my first recorded lesson on March 14, I immediately had the feeling that the lesson went poorly. It was very difficult for me to find any positives with the lesson because the students didn't seem to understand the material that I was trying to teach. It was an extremely disheartening and deflating feeling as a teacher. However, after talking with Dr. — and Dr. — about my lesson, I was able to see strengths as well as weaknesses to my lesson. After talking with Dr. — and Dr. —, I can see so many ways that I can improve (Post meeting reflection 6).

Similarly Alexis reflected:

After talking to both Dr. — and Dr. —, many things about my lesson were clarified. As an educator, I believe that I have strengths in modeling what I want the students to do and how they should go about doing so. Although this stands out as a strength, there are still components to modeling that I can fix and get better at. For example, instead of having all of my modeling already done before hand, it would be beneficial to the students for me to model the lesson with them instead of for them. There was not a big chunk of time where I used guided practice efficiently (Post Meeting Reflection 9).

Teacher candidates' responses show strong evidence that collaboration during the video feedback sessions with researchers was an important component in the process of reflection. Candidates seemed to attend to the overall feedback and also to the specific lesson components they were asked to code for — such as modeling and guided practice.

## **Reflection as Professional Growth**

Rodgers (2002) asserts that reflection is a process of meaning making that moves a learner to deeper understanding of experiences and their connections to other ideas. All candidates in this study showed evidence of deeper understanding of their teaching practice and the relationship to student learning. This is a significant disposition that teacher educators strive to develop within their candidates since this is the relationship to student learning that all teachers need to competently demonstrate when in the field. Data

from post-meeting reflections consistently illustrated candidates' knowledge that practice had a direct impact on student learning and candidates were able to provide examples.

In addition, reflection requires dispositions that value the professional growth of oneself and others (Rodgers, 2002). Data from pre- and post-meeting reflections in the areas of whole heartedness, directness, open mindedness and responsibility provided evidence which researchers ultimately analyzed and coded as professional growth. Evidence of wholeheartedness which was defined using Rodgers' criteria indicated that there was limited evidence of enthusiasm about the subject matter.

Nathan illustrated this when he wrote:

My focus was to make the lesson as much of an asking-style lesson as possible, so I really wanted to ask as many questions as possible to engage the students... I believe that my next lesson will be much better because I really took a lot from this learning experience.

Abigail demonstrates directness, indicating that she discusses her practice in direct and non-emotional ways when she states:

"I definitely need to learn more about teaching writing because I felt lost at times."

Alexis also demonstrates the notion of directness when she reflects:

"While I tried to differentiate by giving the students the option to use questioning or inferring, it was too much and could have been two different objectives... I still believe that the anchor chart was extremely effective. It gave the students a concrete model and as we filled it in together, the students really appeared to understand. I will definitely continue to use anchor charts in the future... I also think that I did a good job modeling, even though it may have been too much, causing the lesson to be long. I think modeling is one of the strengths I have and I think it is a good strength to have; I just need to improve on not doing too much modeling.

Perhaps two of the most compelling dispositions within reflection as professional growth are open-mindedness and responsibility, because they indicate a candidates' willingness to change his or her practice based on reflection and take responsibility for explicitly planning instruction to address the needs of the learners. Researchers believe these areas are two of the most desirable dispositions teacher candidates should exhibit as they move into their full role as teachers.

Rhonda evidences this position, stating:

In the future, I will be more mindful of my tone and body language. I believe that the meeting to confer about my lesson was extremely helpful and I will take all the feedback I received and use it to improve my teaching.

Alexis further illustrates both willingness to change and responsibility. For her:

My goal for my next lesson is to manage my time efficiently for walking around and talking with every student. I need to set a time and keep an eye on the clock for how long I need to spend discussing with each student and also which students I should make an effort to come back to.

Amanda takes responsibility for and shares a willingness to change.

I realized that there were little aspects and details of the lesson that I should have clarified on, for instance, when I was conferring with the students during their independent practice, there should have been

information on the board to look back to if they were unsure of their tasks. Also, I should create a system for myself when conferring so I can focus on which students to go to first and also what to confer about with them.

Based on this evidence, teacher candidates' demonstrated strong evidence of professional growth according to Rodger's (2002) criteria. This supports the idea that candidate's strongly benefitted from the overall reflection process and video feedback they received.

## RESULTS

Teacher candidates in this study demonstrated effective reflection, based on Rodgers (2002) criteria. Post-reflection data indicated that reflection as collaboration was most significantly achieved during the reflection meetings with researchers and this process, while also providing a strong catalyst for reflection. Findings from "Reflection as Collaboration" data showed that students found the focused feedback provided by researchers, combined with their own reflections, critical in their development as reflective practitioners. Additionally, while students seemed to struggle with reflection as inquiry based on their responses, the process of getting feedback from researchers seemed to facilitate their ability to reflect on their teaching practices more systematically. Pre-service teacher candidates also demonstrated strong evidence of professional growth related to their teaching practice through their post-meeting reflections. Candidates provided specific evidence of whole heartedness, directness, open mindedness and responsibility, which ultimately shows professional growth according to Rodgers (2002). Further, in response to the research question: *How does video feedback affect pre-service teacher candidates' ability to become more reflective about their teaching practice?*, evidence suggests that teacher candidates not only benefitted from video feedback in terms of their ability to reflect on their own teaching practice, but also gained authentic experiences to develop deeper knowledge, pedagogical skills, and dispositions. Their reflections indicate that teacher candidates' ability to reflect more deeply on their practice might have a direct impact on their future planning and instruction. Further research is needed to follow up with candidates in the field to see if the video feedback does in fact directly impact their future instruction.

## SIGNIFICANCE

While individual reflectivity is not easily documented (Robinson & Kelley, 2007; Rodgers, 2002) and teacher candidates need more support for developing necessary skills and dispositions (Darling-Hammond & Bransford, 2007), this pilot study demonstrated that video-taping and coding lessons in conjunction with focused feedback does in fact have a significant effect on teacher candidates' reflective thinking. Ultimately as Richardson (1990) suggests, reflection is not only a means to thinking critically about one's own practice but it might also lead to action related to practice. The process of video feedback as outlined in this study provided candidates with significant and systematic ways to critically analyze and reflect on their teaching practices while in the early stages of pre-service teaching. The benefits of this process provide teacher candidates with greater knowledge, skills and dispositions as they move forward to the teaching induction phase; and it is hoped, will ultimately have a profound impact on their continued abilities as reflective practitioners and effective teachers. In addition, researchers found the evidence within the study so compelling that the results have impacted permanent changes to their

teacher education program. All candidates now go through this process of video feedback within their third year coursework, and results from the feedback are used to determine what supports candidates may need going forward into the final stages of fieldwork and student teaching prior to graduation from the program. This recommendation was accepted by the teacher education faculty in the hope that students will develop greater efficacy and confidence to reflect on and make changes to their own teaching practices in the field much sooner than might have previously occurred.

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# A Glimpse into the Kids, Creative Storyworlds, and Wearables Project: A Work-in-Progress

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## ABSTRACT

A collaboration between members of the Digital Culture and Media Lab (Decimal Lab) in the Faculty of Social Science and Humanities, and the Faculty of Education at the University of Ontario Institute of Technology (UOIT) has spawned the early stages of the *Kids, Creative Storyworlds, and Wearables* research project. At the core of this project is the goal of exploring the stories that young children may tell themselves and others about the use of wearable technology. Children who participate in this study will be given a wearable toy, which will serve to channel their thoughts and ideas. Following the Mosaic approach to ethnography (Clark, 2005), the children will be asked to share their creative ideas about this technology in the form of oral storytelling, drawing, writing, and other artistic representations. This paper reports on the early phases of this project and explores why delving into young children's narratives on wearable technology could be of relevance to educators preparing for future educational challenges and opportunities.

## INTRODUCTION

The *Kids, Creative Storyworlds, and Wearables* research project is a collaboration amongst members of the Digital Culture and Media Lab (Decimal Lab) at the University of Ontario Institute of Technology. The project involves young children in an ethnographic research study who will be given a wearable computer toy to play with for several weeks. By observing children interacting with new wearable media devices, as this new medium of communication unfolds, the researchers strive to contribute novel research in this area.

*Kids, Creative Storyworlds, and Wearables* seeks to explore how children think and feel about technology as expressed through their stories and other creative expressions. Increasingly, children are given digital toys and gadgets that are also considered the personal devices of parents and adults (e.g., iPads, iPods, smartphones), thus socializing children to a future digital lifestyle that will involve always carrying a computer in some form. There is also a great cultural momentum toward *wearing* technology (e.g., smartwatches, sensing clips, fitness devices, etc.). One key intent of the study is to determine how children feel about this kind of ubiquitous technology before they are full agents of this aspect of mainstream culture. How are they adapting to this mass cultural transformation?

The theoretical underpinning behind this study is critical to the expected outcome. Children's imaginations are not escapist fantasy; imagining is the way they negotiate the world unfolding around them and through them. Story is often at the centre of practices involving the imagination. The

researchers embrace the fact that learning at a young age happens through storytelling, story-making, listening to stories, and the memory of stories. Children using toys are also learning, narrating, designing, composing, and discovering, through play. Consequently, this study will involve children's responses, specifically, what they think, feel, fear, create, imagine, and predict about technologies now or the ones they presuppose for the future. The discipline inspiring this pursuit is social semiotics, the study of meaning-making and meaning-using, and specifically, the work of Gunther Kress (Kress, 1997; Kress & van Leeuwen, 2006). Social semiotics, a long-established discipline in both Education Studies and Communication Studies, gives us a set of resources to analyze the pictures children draw and the verbal stories they tell. The intent of the study is to analyze the creative narrations about the technology, rather than assess the children themselves.

This paper will follow in six parts: (1) research question; (2) literature review concerning some relevant scholarship as well as an exploration into emergent wearables for children; (3) description of the toys; (4) methodology; (5) relevance to educators; and, (6) conclusions.

## RESEARCH QUESTIONS

This project distinguishes itself in that it is foremost concerned with children's ideas — the stories they tell, the artwork they create, the thoughts they ponder — about wearable technology as opposed to questions about usability, safety, formal education, or healthcare.

The preliminary research questions that have guided the early stages of this study are as follows:

- What do children imagine wearables will be like in the future?
- How do children narrate or illustrate the stories that they tell themselves (and about themselves) and their friends/siblings in the wearable turn that they live in (themes/values/predictions/embellishments)?
- What do children think about wearable technology and the potentials it might inspire?

Additional questions that have more recently been posed through this process are as follows:

- How might children's ideas about wearable technology be used to inform formal education practices?
- How might wearables empower children in their day-to-day lives?

## LITERATURE REVIEW

Though there is overlap between the areas, much of the literature reviewed on children's wearable technology can be organized into four key areas: (1) wearable technology for children's safety; (2) wearable technology in healthcare; (3) 'do-it-yourself' (DIY) wearable technology and construction kits; and (4) wearable technology in the classroom. A brief review of the literature in each of these areas is included below, followed by a background to the methodology used in this study.

### **Wearable Technology for Children's Safety**

Wearable technology developed to protect or monitor children's safety, often using GPS tracking and wearable sensors, is documented in the literature. Examples include the following: UbiKids Project

which proposes the use of a GPS system to alert children to move away from ‘accident prone areas’ (Takata, Ma & Apduhan, 2006); a proposed safety vest that uses GPS and sensors to provide safety information while children attend daycare or school (Jutilla et al., 2014); and the New Sense of Place/Mobile Bristol projects which are concerned with how wearables may allow children to more freely explore urban environments (Jones, Williams & Fleuriot, 2003).

### ***Wearable Technology and Healthcare***

A number of recent articles on children’s wearables explore the use of this type of technology (particularly wearable sensors and cameras) to help monitor the affective state of children and adults with autism (e.g. El Kaliouby, Picard & Baron-Cohen, 2006; Fletcher et al., 2010; Keintz et al. 2007; Picard, 2009). A distinction relevant to other areas of this literature review explained by El Kaliouby, Picard, and Baron-Cohen (2006) is that wearables in healthcare may be distinguished from other medical devices in that the person wearing them is ‘in control’ and may choose to remove the device as desired.

Furthermore, Norris, Keller, and Billard (2010) report on research on a wearable device used for gaze tracking in children as young as 12 months old enabling professionals to study peripheral and central vision in a manner that works with children’s needs.

Wearables used to promote physical activity among children are also included in the literature. Tagaboo, for example, is a multiplayer game that utilizes radio frequency identification technology (RFID) and an e-textile vest to bring together aspects of tag and memory games for school aged children (Konkel et al., 2004). Similarly, SoundTag — another tag-like game that utilizes RFID technology and plays instrument sounds for pre-school age children — was explored in a classroom setting (Ueoka & Hirose, 2008). Both of these studies focus to some extent on usability and the presentation of new concepts for kids’ wearables.

As a final example of children’s wearables for healthcare, Andrews, MacKinnon, and Yoon (2002) explored the use of wearables called Thinking Tags which were used to teach five year olds about tooth decay in a kindergarten class. In that example, children wore ‘Thinking Tags’ (a type of wearable developed at MIT) as they pretended to consume food (i.e. other Thinking Tags) around the classroom. The Thinking Tags provided feedback to simulate accumulation and decay, using LED lights of different colours, for example. In that particular project, the children were asked if they learned anything through the exercise and they were observed in their participation in this educational simulation.

### ***‘Do-it-Yourself’ E-Textiles and Wearable Construction Kits***

Well aligned with ‘Do-it-Yourself’ (DIY) and ‘maker’ movements, a portion of literature on wearables in the last decade features research on E-textiles (technology that may be worn on the body as clothing), and wearable construction kits. The evolving use of computers by a widening range of individuals for a range of purposes may speak to the popularity of construction kits often marketed for educational purposes (Ngai, Chan, Leong & Ng, 2013). The potential for these applications of wearable technology to empower individuals, including children, appears as a theme in literature in this area.

A study involving the LilyPad Arduino construction kit, developed to allow individuals to sew together programmable ‘petals’ that may be worn on clothing, looked at the usability and interest in

this type of technology (Buechley & Eisenberg, 2008). Attendance at workshops for middle and high school aged students and adults included in this study revealed an interest in this type of technology by females — 25 of 31 participants in three voluntary workshops were female. Furthermore, Buechley and Eisenberg (2008) comment on the potential for this type of technology to become a means for a number of people (children included) to engage in creative expression.

In a similar study involving EduWear construction, kids and workshops, Katterfeldt, Dittert, and Schelowe (2009) report on the empowering element of creating e-textiles for youth ages 10-14. Among other aspects, the authors explored the ‘personal meaningfulness and relevance’ of creating e-textiles to young people involved in the study as well as increased confidence with technology and programming as they gained experience during the workshops.

Ngai et al. (2013) share similar research on their development of i\*CATch, a wearable construction kit that is intentionally ‘educational’ in nature. Children ages 10-12 years old, youth ages 13-16, undergraduate students, and graduate students were involved in six separate evaluations of the construction kit, which took place in camps, workshops, and higher education courses. Perhaps most relevant to the current study was the evaluation, which involved youth ages 13-19 in a creative storytelling and theatre-themed engineering and technology workshop. This particular evaluation was intended to explore the potential for the construction kits to allow ‘novices’ to use them under appropriate guidance. The youth involved in this experiment were observed on their ability to create e-textiles to be used in their stories.

### ***Wearable Technology in the Classroom***

To a lesser extent than the other areas explored, wearable technology designed specifically for classroom use appears in the current literature. Though Ngai et al.’s (2013) research on the i\*CATch construction kits does explore a few classroom applications of the technology and it is — as mentioned above — intended for educational purposes, the authors also discuss reasons that wearable technology kits have not yet become as common as robotic kits. Reasons they suggest include the fact that wearable construction kits often require parts that cannot be reused, there are not usually sufficient provisions to instruct the learner on proper usage, and introductory skill levels are often required before getting started.

Furthermore, projects mentioned in the Wearable Technology and Healthcare section above which promote physical activity (such as Tagaboo and SoundTag) or healthcare, were applied or tested in classroom settings (Konkel et al., 2004; Ueoka & Hirose, 2008). Similarly, Andrews, MacKinnon, and Yoon’s (2002) dental health simulation using Thinking Tags was piloted in a kindergarten classroom. In that project, the authors indicated that they applied principles of situational learning theory to educate young children about tooth decay. These serve as examples of the overlap between the areas of wearable technology and healthcare education and wearable technology in the classroom.

Following a similar thread to the research on wearables related to monitoring the affective state of children with autism (e.g. El Kaliouby, Picard & Baron-Cohen, 2006; Fletcher et al., 2010; Keintz et al., 2007; and Picard, 2009), the Today’s Stories project (Panayi et al., 1999) proposed the use of a wearable camera by young children in the classroom in order to explore events in their day and thus promote reflection in their actions and the actions of their peers. Evidence of this project taking place is not found in the literature, though the importance that this project placed on children as ‘key people’ in the project and on valuing their creativity is relevant to the goals of the present study.

### **Wearable Devices To Be Used in the Study**

Through much discussion and collaboration, team members chose three toys to serve as study artifacts to be used with the participants.

#### ***VTech Kidizoom Smartwatch***

The VTech Kidizoom smartwatch allows children to take pictures, record videos and audio, view the time in digital and analogue formats, use a stopwatch, and play preloaded games. It includes a touchscreen on the watch ‘face’ and an easily accessible camera button on the side of the device. It can be connected to a computer using a USB cord in order to download images and upload new games. It is available in a range of colours and is not labelled as a gender-specific toy. The Kidizoom can be used ‘out of the box’ and does not require access to Wi-Fi, another device, or a SIM card.

#### ***Linkitz***

The Linkitz is a modular device that can be programmed using a pictorial coding language and may be worn on a child’s wrist. Linkitz is a pre-release device and the company is interested in the study results. As such, the company will make these toys available to participants before they go on the market. The various links created for the device have different functions and can be connected to the central ‘hub’ in a variety of combinations. As examples, some of the existing links include an LED link, motion link, microphone link, and speaker link. Though it is not labelled as a gender-specific toy, much of the marketing material and information on the Linkitz website makes mention of coding for young girls. Furthermore, the toy’s mascot is a female named Lily Linkitz (see Figure 2). Text next to Lily’s image on the Linkitz blog reads ‘Lily is here to inspire all our future tech titans, and to let them know that whatever they imagine, they can create! Lily will always be nearby to lend a hand as girls explore how Linkitz works’ (Linkitz, 2015).



**Figure 1.** Concept illustration of the Linkitz (Linkitz, 2015).



**Figure 2.** Illustration of ‘Lily Linkitz,’ the Linkitz mascot (Linkitz, 2015).

### ***Tinitell***

The Tinitell is a wrist phone that allows children to make calls to numbers programmed to the device. Up to twelve contacts may be programmed to the device using an app that is compatible with parents’ android or iOS devices. The Tinitell requires the use of a SIM card and includes a GPS tracker that may be followed by parents/guardians using the accompanying app. The Tinitell has a minimalistic design — a large button located on the ‘face’ of the wrist phone can be selected to prompt voice activation of a call and small scroll buttons are located on the side of the device. The Tinitell is not marketed as a gender-specific device and showcases a young girl and boy out exploring in the woods in its promotional material.

### **Methodology**

#### ***Ethnographic approach***

This study uses the Mosaic approach to ethnography, which “combines the traditional methodology of observation and interviewing with the introduction of participatory tools” (Clark, 2005, p. 13). The approach views “young children as competent meaning makers and explorers of their environment” (Clark, 2005, p.11) providing for the project a relevant ethnographic model for the social semiotic

approach it will take. The governing framework for the Mosaic approach aspires to certain values, listed below. While the research team cannot currently engage in the full range of this approach, the present study uses an adaptation of this framework as part of its rationale and design (Clark & Moss, 2011, p. 7):

- multi-method: recognises the different ‘voices’ or languages of children;
- participatory: treats children as experts and agents in their own lives;
- reflexive: includes children, practitioners, and parents in reflecting on meanings, and addresses the question of interpretation;
- adaptable: can be applied in a variety of early childhood institutions;
- focused on children’s lived experiences: can be used for a variety of purposes including looking at lives lived rather than knowledge gained or care received;
- embedded into practice: a framework for listening that has the potential to be both used as an evaluative tool and to become embedded into early years’ practice.

### ***Study Procedures***

Children between the ages of four and seven are eligible to participate in the study. This age group was chosen, not only because it is the appropriate age group for the selected wearable devices, but also because it is a group that may be less influenced by society in terms of what this technology is or is not. The research team believes that by exploring wearable technology with children in this age group, the study might open itself to more creative ideas about wearable technology. Up to five children in this age group may participate in each of the three case studies involved in this project, for a maximum of fifteen participants.

A recruitment email and digital poster were sent to a contact list consisting of approximately 150 parents/guardians of children who have participated in summer camps organized through the Faculty of Education at the university. As these camps are STEM — (Science, Technology, Engineering, and Math) or STEAM — (Science, Technology, Engineering, Arts, and Math) focused, it is possible that families who take an interest in this study are already interested in technology for children. Additionally, a print version of the poster was displayed at a local public library. The researchers cannot confirm how much interest each recruitment method attracted to the study, though the timing of the email to families on the Faculty of Education’s summer camp mailing list seems to align with the timing of most email inquiries regarding this study. In fact, there were no emails from parents of possible participants until after the email to the summer camp mailing list was sent, though the poster was displayed a minimum of one week before the recruitment email was sent.

The Mosaic approach to ethnography (Clark, 2005) has informed the present study design. In keeping with the Mosaic approach, children will be invited to share their ideas verbally, through pictures, and/or written text. Up to two members of the research team at a time will meet with each child participating in the study three times over a span of about three weeks, for a maximum of one hour per meeting. Children will also be provided with a notebook that they may take with them between meetings in order to record any of their stories, illustrations, or other creative ideas about the wearable toy they have been given. A parent/guardian will be present during each of the three meetings with each child and — for ease of scheduling and consistency — meetings will take place at the Decimal Lab.

### ***Study Concerns and Challenges***

Due to the nature of the study and the participant age group, preparing a research ethics application for this study was a task that required careful thought and took several weeks to complete. Clearly describing new children’s wearable devices — two of which are so new that they are not yet available in market-release form — was a challenge. The research team had to rely on explanations from representatives from Linkitz, descriptions on blogs, and concept drawings and videos to convey information regarding the Linkitz toy and Tinitell, which are developed by two start-up companies.

Gaining informed consent was another area of concern related to the participant age group. Though parents were the primary points of contact during the first recruitment phase, many of the communications from the researchers included language that was intended to place the decision to participate with the child. For example, recruitment messages and email correspondences with parents included phrasing such as ‘If you believe that your child would be interested in participating...’, and ‘You mentioned your child may be interested in participating in this study...’. Consent forms and assent agreements were also provided for parents to review with their children before the first meeting with the research team. These forms will be explained to the child and their parent in person at their first meeting. The assent agreement developed for the children who may participate in this study includes language that is simple and less formal than language used in the parental consent form. The assessment agreement will be read to each child who is selected to participate at the start of the first meeting. Each child will be asked to check a large ‘yes’ or ‘no’ checkbox after the agreement has been explained to them and will be asked to print their name on the agreement. Children will be informed that they may choose not to participate at any time during the process and that they may move around, play or draw during meetings, rather than sit in one place while being interviewed. Moreover, to provide the children with more agency over their participation in the study, they will be given the opportunity to choose their own pseudonym.

Anticipating some of the potential risks of participating in a study of this nature required careful consideration. The research team affirms that children will not be required to answer any questions they do not wish to answer or to use the toy they have been provided in any particular manner, and parents/guardians will be present in each meeting with each child. In addition, the identities of all children who participate in the study will be protected. Though the researchers will record meetings with the children (pending parental and participant consent), children’s faces and names will not be shared in any publications or presentations on the project.

Due to safety recommendations, the researchers will not encourage play with the VTech Kidizoom smartwatch for any period longer than forty-five minutes before taking a break. VTech recommends in the Kidizoom’s users guide that after every hour of play, children should take a fifteen-minute break. The research team will maintain this guideline for each of the devices used in the study. Since this is not a usability study, it is not expected that this should be a challenge.

### ***Discussion Questions***

Some of the questions that children will be asked during each of the three meetings, organized by the general themes of each meeting, are as follows:

### **Meeting 1 — Getting to know the child and introducing the wearable toy**

- Do you know what technology is?
- Can you imagine yourself wearing a certain kind of machine? Can you tell/draw a story about that?
- If you could have a superpower, what would it be? How did you get it?

What do you think this [Linkitz/Kidizoom/Tinitell] does?

### **Meeting 2 — After some experience with the toy**

- How did you learn how to use it? Did other people help you learn how to do different things with it?
- Do you ever pretend that it gives you any special powers?
- Can you tell me a story or draw a picture about you and this (Linkitz/ Kidizoom/Tinitell)?
- How might you change it, if you could make your own toy?

### **Meeting 3 — Reflection**

- What if all children had toys like this? What do you think they would/could do?
- What do/would you tell your friends or other children about it?
- Do you think you would use/play with something like this at school/preschool/daycare? What could you do with it at school/preschool/daycare?
- Can you imagine other toys or gadgets like this that we might see one day? What do you think they could do? Could you draw a picture of it/them?

With permission from parents and children, the research team may record video or audio of meetings with each child and take pictures of printed text and artwork created in each of the three meetings or documented within the children's notebooks between meetings.

### ***Current Status of this Study***

This project has received approval from the university's research ethics board, and the study's recruitment started in April of 2016. Recruitment for the first case study has concluded. Posters advertising the study were posted on community boards at a public library in one of the university's neighbouring communities and an email message was sent to families of children who have attended the university's Faculty of Education summer camps.

As of the writing of this paper, the research team has scheduled interviews for all five participants selected for the case study which will involve the VTech Kidizoom smartwatch. Availability of the device was the main factor considered when choosing to begin with the Kidizoom. Sets of the Linkitz and Tinitell have been ordered, though not yet received for this study.

Although approximately thirty-two children whose parents responded to the recruitment messages were eligible to participate, five children were selected due to the number of devices available for use. Families were contacted in order of the time in which they sent correspondence indicating their interest,

and in a manner that would generate a fairly gender-balanced sample. As such, three boys and two girls are scheduled to participate in the first case study.

## RELEVANCE TO EDUCATORS

Much of the current literature on wearable technology for children neglects young children's ideas or personal narratives surrounding what this technology is, what it means, and what it could mean in the future. As one example, a study exploring the i\*CATch construction kits excluded the use of focus groups with children due to their maturity levels (Ngai et al., 2013). Utilizing the Mosaic approach, which regards children as experts in their own lives, this study will explore meaning-making and story-telling associated with this form of technology through the lens of the child.

In a study which explored children's perceptions of technology in formal education settings, Baytak, Tarman, and Ayas (2011) report on the empowerment that children perceived to be associated with technology use in the classroom — observations and interviews indicated that students felt more 'authority' over their learning in classes that used computers than those that did not use computers. This concept of empowerment and engagement with wearable technology (specifically e-textiles) has been touched upon by Katterfield, Dittert, and Schelhowe (2009) though with an older age group (ages 10-14). As educators explore more student-centered approaches to teaching and learning, it may be beneficial to learn whether wearables can serve to provide young children with more ownership over their learning, whether in formal or informal educational contexts.

Even if these technologies are not widely used in formal education settings, it may be useful for educators to be aware of the types of technology that their students may use in their day-to-day lives, as well as how the meaning they associate with it might influence the way they view themselves, others and their futures. Sharing children's narratives and other creative expressions about wearables is one way this research can be of service to educators who are concerned with future educational challenges and opportunities.

## CONCLUSION

This paper has explored the *Kids, Creative Storyworlds, and Wearables* project which is currently in its early phases. The theoretical framework which guides this research, namely, social semiotics through the work of Kress and van Leeuwen (2006), as well as Clark's Mosaic approach to ethnography (2005) have been explored. As a result of this work being grounded in the theories of social semiotics and Mosaic ethnography, two key aspects of this project are that it seeks to examine the meaning children may endow on wearable technology in the present and future — as expressed in their creative representation, and that it strives to acknowledge children as meaning-makers and experts in their own lives.

A review of the literature suggests that, though there are specific applications of children's wearables involving safety, healthcare, do-it-yourself projects and construction kits, and the use of this technology in the classroom, literature on wearables designed specifically for learning in formal education settings is less prevalent. Furthermore, much of the literature focuses on usability or judgments of children's use of this technology from the perspective of the adult observer. Though not explicitly intended to influence

formal education practices in K-12, the authors suggest that the case studies in this project could serve to inform educators who are interested in current educational challenges and opportunities about young children's personal narratives involving this type of technology.

Lastly, an important distinction between this project and similar projects involving wearable technology for children is that it will analyze children's creative ideas about the technology, rather than assess the usability of the wearable devices or the children themselves. With this open-ended, exploratory approach, the authors intend to gain insight into the valuable perspectives of young children making sense of the 'wearable turn.'

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# Educators' Perceptions of Common Planning Time: A Case Study of Two Primary Schools

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## ABSTRACT

In this case study, the researcher explored the educators' perceptions of common planning time in two primary schools to gain an understanding of what occurs during common planning time. The purpose of the study was to explore how teachers use common planning time and the benefits and barriers. The participants in the study consisted of 20 teachers - one male and nineteen females - and the principals of both schools. The participants were from two primary schools, one in which the teachers participate in common planning time infrequently, and the other school where common planning time is held every week. The data collection process involved interviews, observation and document analysis. The researcher analyzed the data by coding the information to generate a description of the responses and themes identified. The findings indicated that the dominant theme established for the purpose of common planning time was planning lessons collaboratively so that student learning occurs. The apparent focus of common planning time was student centered. The teachers spent most of their time highlighting issues relating to planning and developing strategies and lesson plans to meet the students' needs which is the central theme relating to the use of common planning time. The benefits highlighted were improved academic achievement for students, support of colleagues, and better lesson planning. The themes that resulted were useful for understanding the optimal way to realize the effectiveness, purpose, benefits and barriers to common planning time in schools. The study will contribute to social change in education that will enhance collaboration, among teachers, students learning and a more positive school where academic achievement is realized.

## INTRODUCTION

Common planning time (CPT) is explained as a frequently scheduled time at school when teachers come together to have common planning, parent consultations, prepare aids and carry out student assessments (Mertens, Flowers, Anfara, & Caskey 2010). A number of researchers provide credence to the benefits of common planning time - Haverback & Mee (2013); Warren & Muth (1995); Anfara, Mertens, Caskey, Flowers (2010); Belmore (2007). Cook & Faulkner (2010) indicated that research has revealed that common planning time enabled optimistic teacher security and state of mind, as well as student education.

The researcher became interested in common planning time because she worked at a school where CPT was not implemented. Based on anecdotal evidence from teachers about CPT in many schools time was made available for this practice. The teachers were always asking for its implementation after much lobbying; it was placed on the calendar but time was not allotted for teachers to have CPT. The researcher was also interested in gaining a better understanding of educators' perception of CPT. The purpose of the

study was to explore the educators' perceptions of the use, benefits, and barriers of common planning time. Therefore to achieve this, the researcher conducted interviews with teachers and principals from two primary schools. One in which the educators had access to regular common planning time and the other that did not.

The research is significant as the more information that is available on the positive benefits of common planning time; the more significance school administrators will ascribe it when making school calendars. Also, it will advance knowledge in the education system locally as most of the literature found was from external sources.

The qualitative case study highlighted four research questions: (1) What is the teacher's understanding of the purpose and value of common planning time? (2) How do teachers currently use common planning time to effect change in the classroom? (3) What are the benefits of common planning time? (4) What are the barriers to effective common planning time?

## **THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

The components of Vygotsky's sociocultural theory provide the framework for this study as put forward by Rimpola (2011). The theory advanced the idea that learning is defined by a person's social environment also the theory claimed that as individuals interact with others in their surroundings; it stimulates the progression of development and cognitive growth. CPT gives teachers time to collaborate and learn from one another as they share experiences about planning lessons, student work, the challenges they face, and how to improve pedagogy, so student achieve academically.

Research revealed that common planning time can be beneficial to teachers, students and school in general. The benefits for example are academic efficacy, fewer behaviour problems, and greater student achievement, greater job satisfaction, more parental interaction. Additionally, it builds an active professional learning community among staff, higher perceptions of efficacy and more positive opinions of their jobs coordinated lesson plans, and sharing among teachers, time to deliberate on student progress, and difficulties of common planning time are well documented, (Haverback & Mee 2013; Miles Darling-Hammond, 1998; Rice 2003; Mertens, Flowers, Anfara, & Caskey 2010).

## **METHODOLOGY**

The research is a qualitative case study. The qualitative case approach based on its nature of providing a more detailed description was chosen to advance participants perspective through interviews, observation, and documents. These provide in depth responses, an opportunity to probe, and clarify the benefits of common planning time. The rationale for using the qualitative design is that it is a suitable method that helps in the understanding the phenomenon of common planning time from the perspective of the participants'. Another characteristic of all forms of qualitative research is that the researcher is the primary instrument for data collection and analysis. According to Merriam (2009) this makes the research method acceptable.

## **PARTICIPANTS**

The participants in the study consisted of 20 teachers' one male and nineteen females and the principals of both primary schools. The participants are from two primary schools one in which the teachers receive common planning time infrequently, and another school where common planning time is held every week. There were at least three teachers from each grade level. School A has a total of 24 teachers and 614 students, and School B has a total of 30 teachers and 930 students. The average years of teaching experience for the teachers was 11.75 years. School A represents the population that does not have regular common planning time while School B represents the population that has regular planning time.

## **DATA COLLECTION AND ANALYSIS**

The researcher gathered qualitative data from interviews, observations of common planning time meetings and documents. The researcher used the Common Planning Time (CPT) Interview Protocol developed by the Middle Level Education Research Special Interest Group in 2007. The researcher interviewed each participant individually during March 2015. The interview consisted of thirty-two questions and was described in six categories, demographic data, the teachers understanding and use of common planning time, the perceived benefits and barriers and their professional preparation. The principals' interview consisted of ten questions relating to the principals' understanding of the purpose of CPT, benefits, and challenges, professional development, and the adequateness of resources. The observation form consisted of three descriptive questions relating to the agenda, the minutes, participation, and a checklist of evidence of discussion activities. The researcher operated as a non-participant observer at the regularly scheduled common planning time meetings and the findings from the observation were used to substantiate the findings from the interviews.

The data was analyzed by coding the information to generate a description of the responses as well as several categories or themes that were revealed by the educators in the interviews and the observation. The researcher tried to identify themes that related to how the schools use common planning time and their perceptions of benefits and barriers. The researcher reviewed the information collected from the educators about common planning time for common themes. The researcher conducted another review of the interview transcripts and observation notes and coded the data based on the themes identified. The researcher also employed member checking. This helped to rule out the possibility of misinterpreting the meaning and the perceptions the educators have about common planning time. The themes used to describe the common planning time process were documented and narratives and quotations used to illustrate the teacher's perceptions of common planning time.

## **RESULTS**

### **Teachers Understanding of Common Planning Time**

In both schools, the educators believed that common planning time is valuable and is important to students' academic performance. The analysis of the data to address the first research question - What is the teachers' understanding of common planning time? — indicated one dominant theme — planning lessons collaboratively so that student learning occurs. It can be concluded that CPT is an important

feature of school activities that help teachers to plan for their students learning and success. The purpose and goals of CPT are evident and similar to literature. The purpose is to prepare lessons to meet the needs of children, so they are successful. One teacher from School A stated “the purpose of CPT is for planning lessons for the students and examining methodologies that can be used with our students. It also helps with preparation of self as we collaborate and discuss issues I gain knowledge.” The principal from School A responded by commenting that “the purpose of CPT is for teachers to lend help to each other, share methodologies and plan lessons to enhance the students learning. It is also a time to build rapport with teachers and maintain a healthy relationship.” One teacher from School B commented:

The purpose of common planning time is an opportunity to collaborate with teachers at each grade level. It is about preparing better lessons for the students so they can achieve academically. It is an opportunity to share best practices. It should also help with the demonstration of specific resources for example power points. This grade planning should be about the students and how to present lessons to them to meet their needs.

### **Teachers’ Use of Common Planning Time**

The second research question – How do teachers currently use CPT to effect change in the classroom. The analysis revealed that the major theme is teachers use CPT to plan and develop strategies and lesson plans to meet the needs of the student. The following response from one of the teachers summed up what teachers spend time discussing during their CPT:

As a team, we spend time discussing and planning lessons and developing strategies and methodologies to meet the students’ needs. We look at the progress of our children and develop test items. We also discuss students learning and behavioural issues. At times, we look at other matters such as items on the school calendar depending on the responsibility of each group.

The theme from the research correlates with the literature and reinforces the concept put forward by researchers on the use of CPT. While it does not give the full list of activities that can be carried out it does reinforce the ideas of the researchers. Observation of the use of CPT showed that one grade meeting focused not only on planning lessons but also on school events, students’ progress and homework assignments. Observation also revealed that the teachers did not have an agenda for any of the meetings.

### **Perceived Benefits of Common Planning Time**

Research question three: *What are the benefits of CPT?* The teachers identified many benefits of CPT such an improved academic achievement for students support of colleagues, and better lesson planning. In terms of teacher outcomes the research pointed out that common planning time stimulated increase levels of teacher collegiality, professionalism, curriculum development, and reduces teacher spoliation (Rice, 2003). The major theme was academic achievement for students. The teachers all thought that the school would benefit in terms of growth resulting from students’ academic performance and teachers increase motivation to prepare better lessons. The teachers from School A echoed the following statements. “The benefits were a better preparation of lessons, which resulted in students learning, sharing of ideas and working together resulting in an improved relationship.”

In School B, the sentiments echoed by the teachers were similar to School A. One teacher indicated the following:

The benefits are many a sense of unity among the staff; teachers collaborate and learn from each other. CPT helps to clear up understanding about particular topics. There are better planned lessons and improvement in strategies that result in increased academic performance.

### **Perceived Barriers to Common Planning Time**

Research question four- What are the barriers to effective CPT? The data analysis indicated two major themes from the teachers' responses the lack of time and personalities. It has been found that high levels of planning have a positive influence on instruction and student achievement, (Cook & Faulkner, 2010 cited Flowers et al., 1999). Having more time for common planning time to share ideas and look at best practices and instruction and help them to provide feedback that can be beneficial to each other and the students. One teacher from School A reported the following:

The lack of time is an issue as administrators do not have an interest in the concept; the time is not provided for planning. Sometimes personalities affect the smooth running of the planning either they want to leave early or they waste time talking about other issues.

The principal from School A commented "that the challenges I encounter is the teachers not using the time wisely they use the time to do their personal business instead of discussing issues relating to the students." The teachers at school B had different reactions to the perceived barriers to CPT. Seven teachers thought that time and personalities were issues that were barriers to CPT. They commented that either the time allotted was too short or the day was not appropriate while three teachers stated that they did not perceive any barriers. The teachers at school B have their CPT meeting on a Friday afternoon and teachers are more inclined to go home early after a long week. The researcher's observed that the meetings would extend to about four thirty at times because of the general planning meeting after the grade level meetings. The principal from School B indicated the following "there are challenges at times teachers request permission to leave stating that they have personal business to sort out. This affects the quality of the meeting as we don't get the ideas and input of all the staff."

### **CONCLUSION**

The researcher found that the teachers who had common planning time regularly felt a sense of job satisfaction. They believe that student achievement was improved, and their lesson planning and strategies were improved. The results of this study support the belief that increased common planning time makes schools a better place for students and teachers. Most of the teachers' responses focused on teachers collaborating to plan instruction in order that students can improve their learning and improve academic achievement. It is evident that teachers see the value and realize that some of their practices can be developed. The issue of use needs to be addressed as based on the literature it is evident that teachers can use the common planning time to do more. Of importance though was that teachers who had CPT were committed to the task and support was given to them by their administrator. They were also held accountable as they had to discuss in a larger group meeting the plans and strides made in their grade meetings.

The teachers indicated that they used common planning time to plan mainly lessons and strategies for students learning, they also discussed behavioural issues and test items. The need for an agenda of

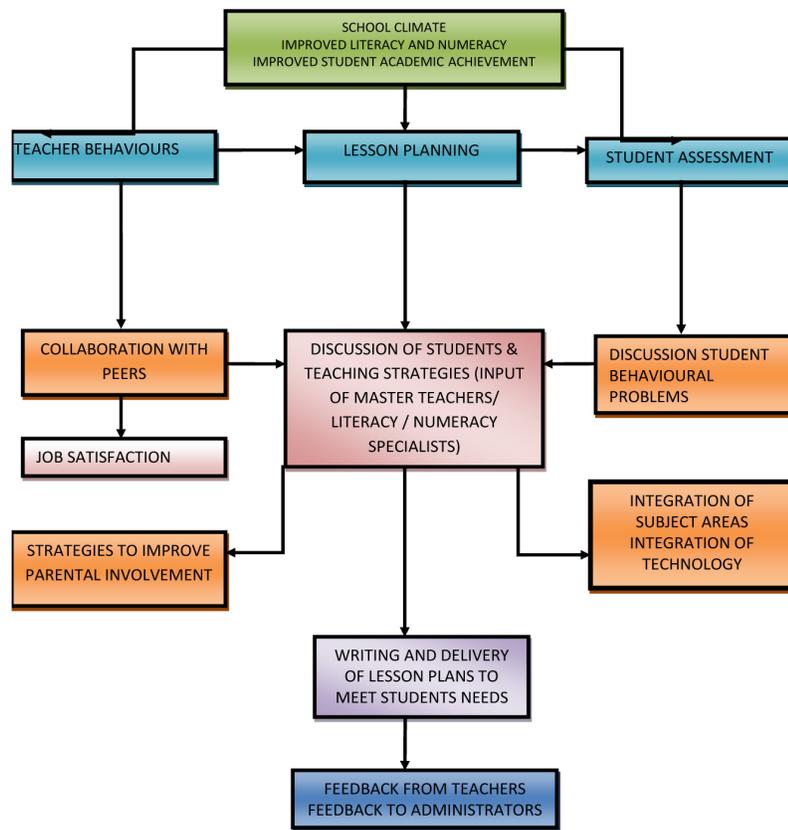
items is essential to the grade meetings so that teachers stay on target in terms of their discussions. I believe additional exploration is required to understand better and improve teacher training on the use of common planning time. While there can be improvements made the teachers at School B thought that if they never had CPT, then they would feel out of place and disorganized. One teacher summed up the teachers comments very well by saying the following:

I would feel isolated, edgy and disorganized if I did not have CPT. I would not know what to teach. CPT helps me to plan my lessons and keeps me focused on what to teach the students each week so they can learn and become better academically. It gives me a sense of purpose especially after a long week. It helps to distress me as I dialogue with other teachers about the problems I had with teaching the students. It also provides me with solutions to issues I might face with individual students which helps me to implement new strategies for the following week.

The issue of the barriers to common planning time revealed themes relating to time and personalities. It is true that personalities can be difficult to deal with but it is also important for educators to find a medium for expressing themselves. It is clear that the issue of time is a problem for teachers and administrators. The reality is time is needed for teachers to meet, collaborate and plan if school officials and other stakeholders want to have better performing schools.

It is clearly indicated based on the educators' perception that that CPT is beneficial to schools. It is evident that School A needs to allot time for this concept as the data shows numerous benefits. Research indicated that collaboration among teachers created a path for the array of effective teaching styles, noteworthy results for the students, and the ability to retain on staff very proficient teachers in schools that demand more accountability. (Berry, Daughtrey & Wieder, 2009). The researcher believe that creating time for common planning is essential to the educational process and without CPT teachers will not be able to provide quality education, pedagogy or effect any growth in their t professional career.

The researcher thought it was pertinent to develop a model based on the findings of the research that detailed the process of common planning time that should be followed if educators desire to achieve success in their schools (See Figure 1). The objective of the model is to provide a framework for teachers to utilize common planning time (CPT) in their schools. The model illustrates how the implementation of CPT in schools result in improved school climate, improved literacy numeracy and academic achievement. It further shows the actions that are carried out to achieve this process. Teacher behaviours such as collaboration with peers are linked to job satisfaction, and improved lesson planning. The discussing of teaching strategies, with input given from trained specialist and integration of technology is critical to the process. The model shows how other teacher behaviours are crucial to common planning time for example, student assessment, discussion of student behavioural problems, strategies to improve parental involvement, writing and delivery of lesson plans to meet the student needs and feedback from peers.



**Figure 1.** The Common Planning Time (CPT) model.  
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# The Effects of Blogging on a Set of Grade 9 Students' Academic Performance in Caribbean History at a Secondary School in Rural Jamaica

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## ABSTRACT

This action research was undertaken to ascertain how the use of blogs can address students' academic performance in Caribbean History at a co-educational secondary school. The study lasted for eight weeks and comprised a sample of 28 students. In order to answer the research questions, a range of data collection tools were used namely, student interview, observation schedule, Likert questionnaires, pre-test, post-test and focus group discussions. The findings show that 96% of the sample attained scores of 70% and above in the post-test. Additionally, 78% of the sample agreed that the blogs improved their reading, writing and vocabulary skills; 65% of the sample noted improved grades and a boost to their self-confidence. The students believed that blogs enhanced their learning ability as well as their academic performance in the subject. The results also highlight the fact that blogging can be used to enhance the teaching/learning process.

**Keywords:** blog, academic performance

## INTRODUCTION

Twenty-first century high school students in Jamaica have become exceedingly reliant on technology, and this has contributed to more inclusive classrooms where students with varied abilities are expected to share learning experiences. This reality of mixed ability has somewhat affected the academic performance of students in Caribbean History lessons. According to Ediger (2014), reading Caribbean History content presents situations in which selected pupils have not been as successful in learning as they might have been. Over the years, students who experience poor academic performance have been placed at non-traditional high schools, especially in rural areas. These students come from diverse backgrounds with different abilities as well as learning challenges. Studies have identified that learners who have learning issues tend to be concrete in their thinking, need help with strategies and organization, and are eager to succeed (Ediger, 2002). Overall, this situation has attracted the attention of many stake-holders in the education sector, namely, school administrators, teachers, student-teachers, and education researchers, including the researcher.

Research has also revealed that student-teachers and regular classroom teachers face various problems in Caribbean History lessons that have resulted in poor academic performance. The inspiration for this study came from the experience the researcher gained from teaching practice exercise at a rural high school in Jamaica in 2015 and 2016. It was observed that the classes were of mixed abilities and as such the researcher faced various challenges, such as getting the students to read and analyze the relevant content, synthesize information and evaluate and respond to questions appropriately.

Throughout the teaching practice exercise, the researcher implemented a number of strategies to address the poor academic performance of Grade 9 students in Caribbean History. One such strategy was the incorporation of blogs. Morgan (2015) believed that, “Allowing students to blog is a way for teachers to integrate new literacies into the curriculum, helping them adhere to the recommendations and standards of important educational organizations” (p. 27). Therefore, the blogging strategy was considered an effective tool to enhance students’ academic performance and confidence.

### **Purpose of the study**

This action research was conducted to (a) determine the effects of blogging in Caribbean History lessons on improving students’ academic performance in terms of test scores, (b) compare the academic performance of students who used a blog with that of students who did not use a blog and (c) to ascertain the students’ reaction to using blogs.

### **Research Questions**

Based on the topic advanced by the researcher, the following research questions were used:

1. How has the use of blogs influenced the academic performance of the sample in Caribbean History?
2. What are students’ reactions to the use of blogging in a grade 9 Caribbean History class?

### **The Significance of the Study**

The study highlights the applicability of using blogs to address students’ academic performance among students in a mixed ability Caribbean History class. This study is very relevant to stakeholders in the education sector such as students, student-teachers, teachers, administrators and parents:

1. Students’ academic performance will improve via the sharing of information and experiences in an electronic space.
2. It is hoped that student teachers will gain valuable insights on how to teach Caribbean History in an innovative way through the use of blogs, and how they can be used to improve students’ academic performance.
3. Teachers will learn new ways of facilitating learning outside of the regular classroom and be in a position to accelerate meaningful feedback.
4. Administrators can benefit by exploring the use of this approach to address academic challenges at their respective institutions.
5. It is anticipated that parents will embrace this new approach to learning by becoming aware of how to use blogs and by encouraging their children to use this medium.

This research will also be of importance to researchers, because they can use it as a guide to produce better research or form the basis for further research that could determine the effectiveness of blogging in addressing the poor academic performance in Caribbean History classrooms.

## LITERATURE REVIEW

Many non-traditional rural high schools have been significantly affected by the annual inflow of a mixed ability group of students; some of which have low academic performance in Caribbean History. Hence, this literature review is organized to highlight topics such as the importance of blogs, challenges to using blogs, and the benefits of using blogs to help readers comprehend their usefulness as a technological tool.

### Importance of blogs

In a contemporary classroom of 25, there is an expectancy to find three to four students having challenges — especially with academic performance (Cooter & Cooter, 2004). Researchers have revealed that in areas of poverty and low-income urban and rural areas, the children per classroom could display academic performance problems such as learning challenges (Snow, Burn & Griffith, 1998). In spite of their academic boundaries, students with learning problems can improve their performance academically. Furthermore, researchers have demonstrated that delayed learners can make progress in the classroom once teaching and instructional materials are at the appropriate level of learning. This requires a great deal of structuring and organizing of new facts in order for these learners to gather knowledge (Lowenstein, 2003).

In the twenty-first century classroom, integration of technology into lessons is becoming an urgent need — especially in a Social Studies class of rural setting. The advancement in technology has equipped the classroom with considerable resources that can be used to help address many learning problems — such as e-resources, computer software for various subjects, etc. Therefore, integrating technology in the lesson can support learning by building literacy and language skills and independence (Pacuilla & Fleischman, 2006). Morgan (2015) postulated that “allowing students to blog is a way for teachers to integrate innovative strategies into the curriculum, helping them adhere to the recommendations and standards of important educational organizations” (p. 28). Language facilitates social interactions and that the process of commenting and responding to blogs helps scaffold the meanings attached to phenomena (Ferdig & Trammell, 2004; Tse et al., 2010). Students are able to generate meaningful connections from discussions with their peers and teachers, which will contribute to greater appreciation of the content on the blog.

Blogs are of great importance, especially in the 21st<sup>st</sup> century classroom, as students are more likely to communicate by texting messages or through various social networks than by face-to-face communication (Wilson, Wright, Inman & Matherson, 2011). Essentially, a web blog or a blog offers users opportunities to journal, make personal commentaries, and insert links, photos, and other media into an online location from which others can contribute and comment (Solomon & Schrum, 2007; Wilson, Wright, Inman & Matherson, 2011). Since blogs provide students with a place to reflect and publish their own thoughts, it could be stated that blogs are very effective tools in teaching and learning (Ferdig & Trammell, 2004, Cuhadar & Kuzu, 2010). Interacting on the blog will equip students with sufficient knowledge and the skills necessary to advance their academic performance, especially in the development of reading, writing and vocabulary building skills.

Interaction is one of the key components that influence success in technology supported and student centered educational environments. Interaction in the learning process provides students with opportunities to support active learning, to increase the quality and standards of learning experiences, and to develop high level knowledge and skills (Woo & Reeves, 2007, Cuhadar & Kuzu, 2010, p. 135).

Blogs facilitate the characteristics of shared interests and shared support, which are rarely possible in traditional classrooms (Sun, 2010). Furthermore, using a blog in the classroom can also increase motivation, challenge critical thinking skills, aid in differentiated instruction, extend the classroom walls, and cash in on student interest in technology (Sawmiller, 2010). Students engage in the process of reflecting on their comments, foster motivation and enhance their critical thinking skills in making meaningful connections with the content and real-life situations.

### **Benefits of using blogs**

Blogs have a number of advantages which can enhance students' academic performance; for instance it can motivate students and foster collaboration among learners (Hong, 2008). Initially, blogs provide instructors with a medium to extend students' learning and to cater to them beyond the walls of the classroom (Downes, 2004). In providing a medium to expand students' learning, blogs can potentially enhance analytic and critical thinking skills because the critical skill of writing is central to the act of blogging (Hong, 2008). To track the progress of students' learning and academic development, blogs also provide a feature that allows readers to review the entire posting history, making it easy to track an individual's learning progress or to maintain a reflective record over a period of time (Lou, Kao, Yen & Shih, 2013).

Hall and Davidson (2007) suggested that blogs improved students' writing skills, which is evidence of the flexibility of blogs. Reading and writing can facilitate a better understanding of the Caribbean History content. Furthermore, commenting on the blog will expose students to the Caribbean History content resulting in an improvement of students' academic performance in the subject. Richardson (2006) emphasized some of the ways that students improve their academic performance while engaging on a blog. Initially, students reflect on what they are writing and thinking as they write and think it; they then engage readers in a sustained conversation that leads to further thinking and writing — while also synthesizing disparate learning experiences and understanding their collective relationship and relevance.

Through this medium, students will be able to boost their morals as well as their self-esteem. It is against this background that this study was conducted to determine the effects of blogging on students' academic performance in Caribbean History.

### **How to address challenges to using blogs**

There were instances where teachers had an issue with students' participation in blogging as it was not as proactive as they thought it would be (Kresser, Wiggins & Jiménez, 2011). However, there are other ways to increase students' interest in blogs, such as incorporating videos, podcasts and pictures. In addition, teachers can post notes, links to websites, and resources for students to view and interact with (Kresser, Wiggins & Jiménez, 2011). Students can then be instructed to share their views or understanding. Other innovations, such as Asynchronous tools, can be added to blogs to make them more student-friendly. These tools can help create a challenge for students to provide feedback to one another, construct discussions with or without the teacher present, and foster a collaborative learning environment (Kresser, Wiggins & Jiménez, 2011). The blogs can also be used as a part of coursework or a graded assignment (Kresser, Wiggins & Jiménez, 2011). In light of this, students can be given the chance to connect what is learned in the classroom with what is being discussed on the blog, although the blog is weighted as a graded assignment. (Kresser, Wiggins & Jiménez, 2011).

A blog does not simply develop communication skills. Online communication has become an integral part of online reading comprehension and the development of skills that will improve students' academic performance (Castek et al., 2007; Zawilinski, 2009). Kim (2012) emphasized that "the lack of communicative engagement has negative impacts on students' academic performance." On the internet, writing is intrinsically integrated with the reading comprehension process (Zawilinski, 2009). As online readers collect information to solve a problem, they frequently analyze information, critically evaluate, synthesize across multiple texts and communicate with others using instant messaging, e-mail, blogs, wikis, or other communication vehicles (Zawilinski, 2009). In addition, these essential new literacies of online reading comprehension emphasize higher order thinking skills such as analysis, synthesis and evaluation and can be practiced through blogging (Zawilinski, 2009). Broadening the audience for student writing, reading and thinking, providing a space for collaborating outside of the typical classroom discussion, problem solving on the internet, and learning to communicate safely can all be developed within the context of blogs (Zawilinski, 2009). Xiao and Carroll (2007) observed that students with outstanding performance outcomes tended to focus on learning how to solve a problem or resolve an issue by expressing and negotiating different views with other students. This can help to address issues that hinder the improvement of academic performance.

## **METHODOLOGY**

### **Population**

The school's population consisted of approximately 669 students; 434 boys and 235 girls, with varying backgrounds and abilities. The school has one principal, one vice principal, forty teachers and nine support staff.

### **Sample & Sampling Technique**

The sample was an intact group consisting of seventeen students with mixed abilities. The group was one of mixed gender with twelve girls and five boys — ages ranging from 14-16 years. Convenient sampling is a statistical method of drawing representative data by selecting people because of the ease of their volunteering or selecting units because of their availability or easy access (Creswell, 2008).

### **Instrumentation**

To effectively carry out the research, several instruments were used to collect data, such as pre-test and post-test (testing), questionnaires, observational checklists and interview schedules.

The pre-test was administered prior to the research to determine the level the students were at, and the post-test was given at the end of the research to see if the strategy used was successful. The test consisted of items which incorporated questions across the three levels of comprehension.

The interview schedule was another instrument used in data collection. Interview schedules/ protocols served as effective means of inquiry to collect facts. The researcher used it because it gives an idea of the personality, understanding and experience of the interviewees. The interview schedule helped to collect data for research question two. It consisted of four open ended questions based on students' reactions to the use of the strategy.

A questionnaire was also used to garner data for research question two. The questionnaire consisted of four questions geared at predetermined behaviours to do with the students' reactions to the use of the strategy. The questions were all closed ended.

The researcher made use of two observation checklists. The first observation checklist was designed to collect data for research question two. This checklist comprised four items geared at students' reactions to the use of blogs. The descriptors *always*, *sometimes* and *never* were used with each item. The second observation checklist was designed to collect data for research question three. This checklist was also designed by the researcher and consisted of four items geared at students' performance at the various levels of comprehension. The descriptors *always*, *sometimes* and *never* were used.

### **Triangulation**

Triangulation involves using multiple data sources in an investigation to produce understanding (RWJF, 2008). In preparing instruments for data collection, the researcher used the triangulation technique. In addressing research question one, the researcher used the following data collection tools — blog, pre-test and post-test. In addressing research question two, the researcher used the Likert questionnaire and students' interviews.

## **DATA ANALYSIS AND DISCUSSION**

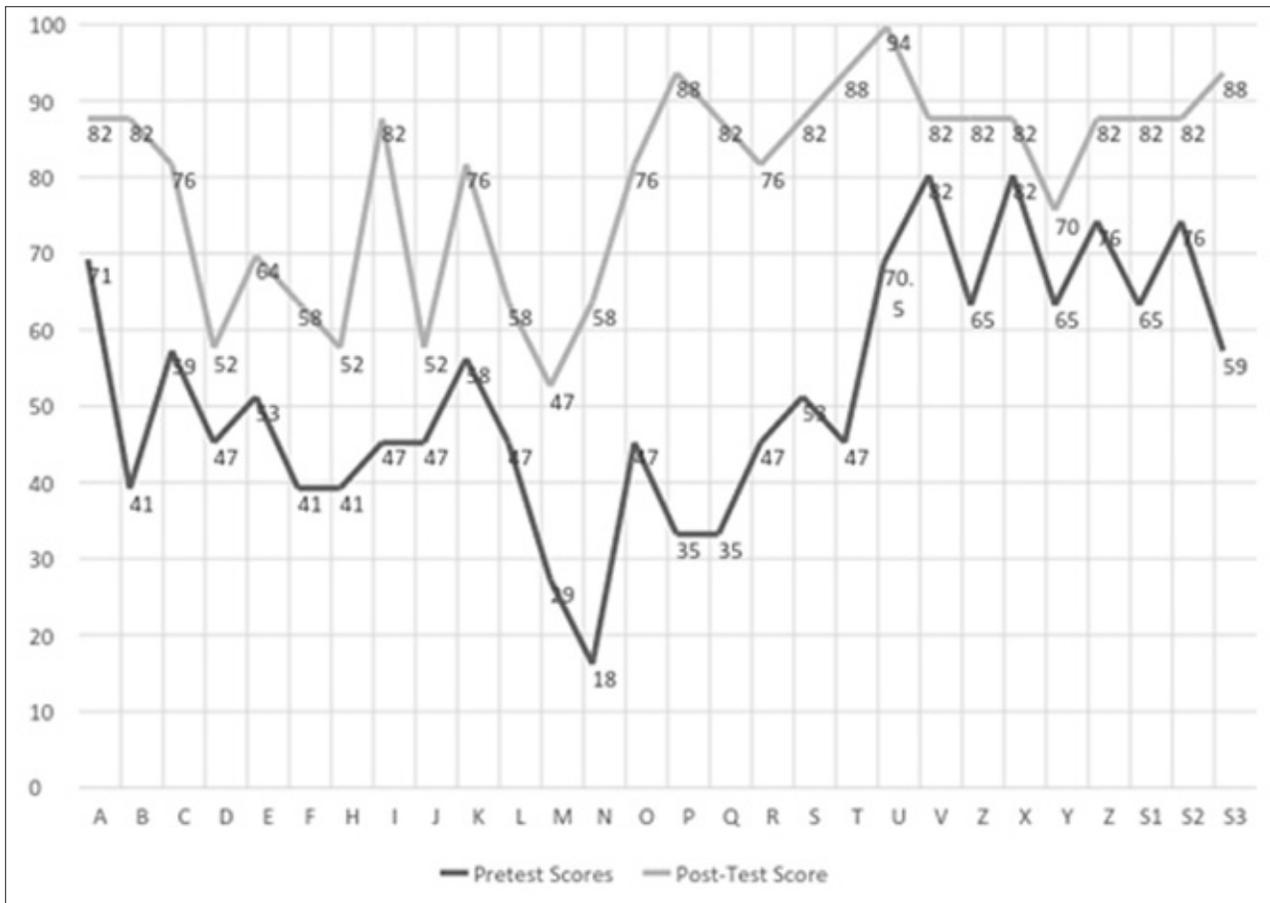
In this section, the data garnered is presented and analyzed. The changes in scores are presented to make for easier analysis and interpretation. All data is presented and analyzed according to the research questions. The answers to the research questions are substantiated by the views put forward in the literature review.

### **Research Question 1: How has the use of blogging influenced the academic performance of the sample in Caribbean History?**

From Table 1 it is seen that scores within the 90% range (90-99%) accounted for one student on the post-test. With reference to scores attained within the 80% range (80-89%) two are represented on the pre-test while on the post-test fourteen students are represented. With regards to scores attained in the 70% (70-79%) and 60% ranges (60-69%), four and five students and three and one student attained scores in each on the pre- and post-tests respectively. Five students attained scores within the 50% range (50-59%) on the pre-test while six did so on the post-test. In the 40% range (40-49%), ten students and one student attained scores on the pre- and post-tests respectively. No student attained a score below 40% on the post-test. For the pre-test, two students were accounted for within the 30% range (30-39%). Within the ranges 20-29% and 10-19%, one student is represented in each group.

A closer look at the data shows that one student (student X) did not realize an increase in his scores. For the other twenty-seven students increases ranging from a low of 5% to a high of 47% were realized. The difference between the mean of the pre- and post-test is a +20.8% increase; while the standard deviation of the post-test decreased by -2.8% when compared to that of the pre-test. The aforementioned descriptions of the data all point to improvement in the students' scores.

| <b>TABLE 1. PRE-TEST AND POST-TEST SCORES OF PARTICIPANTS.</b> |                        |                        |                             |
|--|------------------------|------------------------|-----------------------------|
| <b>Participants</b>  | <b>Pre-test Scores</b> | <b>Post-test Score</b> | <b>Difference in Scores</b> |
| A  | 71                     | 82                     | 11                          |
| B  | 41                     | 82                     | 41                          |
| C  | 59                     | 76                     | 17                          |
| D  | 47                     | 52                     | 5                           |
| E  | 53                     | 64                     | 11                          |
| F  | 41                     | 58                     | 17                          |
| H  | 41                     | 52                     | 11                          |
| I  | 47                     | 82                     | 35                          |
| J  | 47                     | 52                     | 5                           |
| K  | 58                     | 76                     | 18                          |
| L  | 47                     | 58                     | 11                          |
| M  | 29                     | 47                     | 18                          |
| N  | 18                     | 58                     | 40                          |
| O  | 47                     | 76                     | 29                          |
| P  | 35                     | 88                     | 53                          |
| Q  | 35                     | 82                     | 47                          |
| R  | 47                     | 76                     | 29                          |
| S  | 53                     | 82                     | 29                          |
| T  | 47                     | 88                     | 41                          |
| U  | 70.5                   | 94                     | 23.5                        |
| V  | 82                     | 82                     | 0                           |
| Z  | 65                     | 82                     | 17                          |
| X  | 82                     | 82                     | 0                           |
| Y  | 65                     | 70                     | 5                           |
| Z  | 76                     | 82                     | 6                           |
| S1   | 65                     | 82                     | 17                          |
| S2   | 76                     | 82                     | 6                           |
| S3   | 59                     | 88                     | 29                          |
| Mean   | 51.8                   | 71.6                   |                             |
| Standard Deviation   | 16.1                   | 13.3                   |                             |
| N=28   |                        |                        |                             |



**Figure 1.** Line graph showing the comparison between the pre-test and post-test scores of participants.

The use of blogs is a contributing factor in the improvement of the participants’ academic performance, leading to an improvement in the overall class performance. Pre-tests and post-tests were administered, and lower standard deviation meant that most of the students passed both the pre-test and post-test. In addition, 51.8% of the participants passed the pre-test, compared to 3.7% of the participants who failed the post-test. The failing scores decreased significantly after the intervention was administered to the participants. Out of 27 participants, 37% of the respondents achieved a score of 60 and over in the post-test in comparison to their previous performance in the pre-test. Seventy-four percent of the participants excelled in the post-test, which depicted a gradual increase in test scores after the intervention was administered. Therefore, there was an improvement in the grades after the intervention.

**Blog**

The use of the blog contributed to the improvement of students’ participation and academic performance. The blog depicted the teacher sharing in discussions with the students based on the content posted in the blog. The students demonstrated a consistent attitude and interest in raising questions based on misconceptions they had about the content. Students participating in the online discussion had a number

of grammar problems and sentence structure errors — the teacher tried to assist where necessary, while some of the students corrected their miscues. “Allowing students to blog is a way for teachers to integrate new literacies into the curriculum, helping them adhere to the recommendations and standards of important educational organizations” (Morgan, 2015). Some of the questions raised by the students on the blog were similar to questions in the pre-test which the students received prior to the intervention. However, there were instances where less than half of the total participants did not engage in the blogging activities. Students’ participation was not as proactive as teachers thought it would be (Kresser, Wiggins & Jiménez, 2012).

| <b>TABLE 2. RESPONSES OF PARTICIPANTS ON A LIKERT SCALE QUESTIONNAIRE.</b> |   |                       |              |                                  |                 |                          |                              |
|--|---|-----------------------|--------------|----------------------------------|-----------------|--------------------------|------------------------------|
|  |   | <b>Strongly agree</b> | <b>Agree</b> | <b>Neither agree or disagree</b> | <b>Disagree</b> | <b>Strongly Disagree</b> | <b>Number of Respondents</b> |
|  | <b>Question</b>   | <b>1</b>              | <b>2</b>     | <b>3</b>                         | <b>4</b>        | <b>5</b>                 | <b>Total # = 23</b>          |
| 1  | The use of blogs in class improves my reading and writing skills                | 5                     | 13           | 4                                |                 | 1                        | 23                           |
| 2  | The use of blogs in class improves my vocabulary skills                         | 6                     | 12           | 3                                | 1               | 1                        | 23                           |
| 3  | The use of blogs in class improve my grades                                     | 7                     | 8            | 5                                | 1               | 1                        | 22                           |
| 4  | The use of blogs in class boost my self-confidence                              | 6                     | 8            | 6                                | 1               | 1                        | 22                           |
| 5  | The use of blogs in class would help me to learn from my peers in my age group. | 5                     | 9            | 5                                | 2               | 1                        | 22                           |
| 6  | The use of blogs in class would make History concepts clearer.                  | 7                     | 11           | 3                                |                 | 1                        | 22                           |
| 7  | I get speedy feedback from my teacher on a comment made on the blog.            | 6                     | 5            | 9                                | 2               | 1                        | 23                           |

There was an 82% response rate to the survey. Twenty-three of the 28 students responded. From the data represented in Table 2 it is seen that with regards to blogging improving their reading and writing skills, the categories 'agree' and 'strongly agree' accounted for 13 and 5 students respectively. Four students were neutral and one strongly disagreed. With regards to improved vocabulary skills, twelve and six students agreed and strongly agreed respectively. The categories 'disagree' and 'strongly disagree' accounted for one student each, while the remaining three were neutral. Looking at the responses to improved grades and the boost to self-confidence, eight and seven students agreed and strongly agreed respectively for each category. The categories 'disagree' and 'strongly disagree' accounted for one student each, while the remaining six were neutral.

With reference to the responses to 'helping to learn from classmates' and 'making history concepts clearer', eight and eleven students agreed and strongly agreed respectively for each. The categories 'disagree' and 'strongly disagree' accounted for one student each, while the remaining three were neutral for each category. It was also seen that with regard to getting speedy feedback the categories 'agree' and 'strongly agree' accounted for seven and eleven students respectively. Three students were neutral, while two were in disagreement.

## **Discussion**

In order to adequately respond to this research question, the major findings from the analyses presented from the data in Table 2 are used. Taking 50% to be the pass mark, it is seen where 50% of the sample failed the pre-test while 4% failed the post-test. Therefore 46% less students failed the post-test. On the post-test, 96% of the sample attained scores of 70% and above, and 54% of the sample attained scores ranging from 80-94% on the post-test. Only 8% of the sample scored within the 80% range on the pre-test. The aforementioned findings indicate the positive influence of the use of blogging on the academic performance of the students in Table 1. The major findings of the research show that blogging has improved the performance of the sample and has had a positive influence.

As stated in the literature, blogs have a number of advantages which can enhance students' academic performance, such as motivating students and fostering collaboration among learners (Hong, 2008). Initially, blogs provide instructors with a medium to extend students' learning and to cater to them beyond the walls of the classroom (Downes, 2004). In providing a medium to expand students' learning, blogs can potentially enhance analytic and critical thinking skills because the critical skill of writing is central to the act of blogging (Hong, 2008).

## **Research Question 2:**

### **How have the students reacted to the use of blogging in the teaching and learning of History?**

#### **Students' Interview**

The questions on the students' interview schedule were treated as open-ended questions which asked the students to provide feedback in order to ascertain their reactions to the use of blogs in History classes. The recurring positive themes that were present in the students' responses are as follows: "It made History more enjoyable and interesting", "I get to interact with and learn from my classmates", "Makes me want to learn History", "It has helped me to get better grades", "It has helped me to talk about History with more confidence", "It has made me a better History student", "My attitude towards History is

better” and, “We wish other teachers would use it”. As was discussed above, integrating technology in the lesson can support learning by building literacy and language skills and independence (Pacuilla & Fleischman, 2006).

| STUDENT INTERVIEW   |   |   |
|---|---|---|
| Questions   | Major Themes  | Minor Theme   |
| Research Question 2: What are students’ perception of the use of blogging in a grade 9 history class? | Informative, Interesting, Educational and Resourceful | It takes a lot of time, I don’t like everyone seeing my comments, I think it hasn’t helped me |

Figure 2: Showing students’ response to interview for research question 2.

### Observation

From the data in Figure 1, it is seen that in terms of free participation in the blogging, the categories ‘always’, ‘sometimes’, and ‘never’ accounted for five, thirteen and ten students respectively. The categories ‘always’ and ‘sometimes’, accounted for twenty-four and four students respectively for the same predetermined behaviour during the post observation.

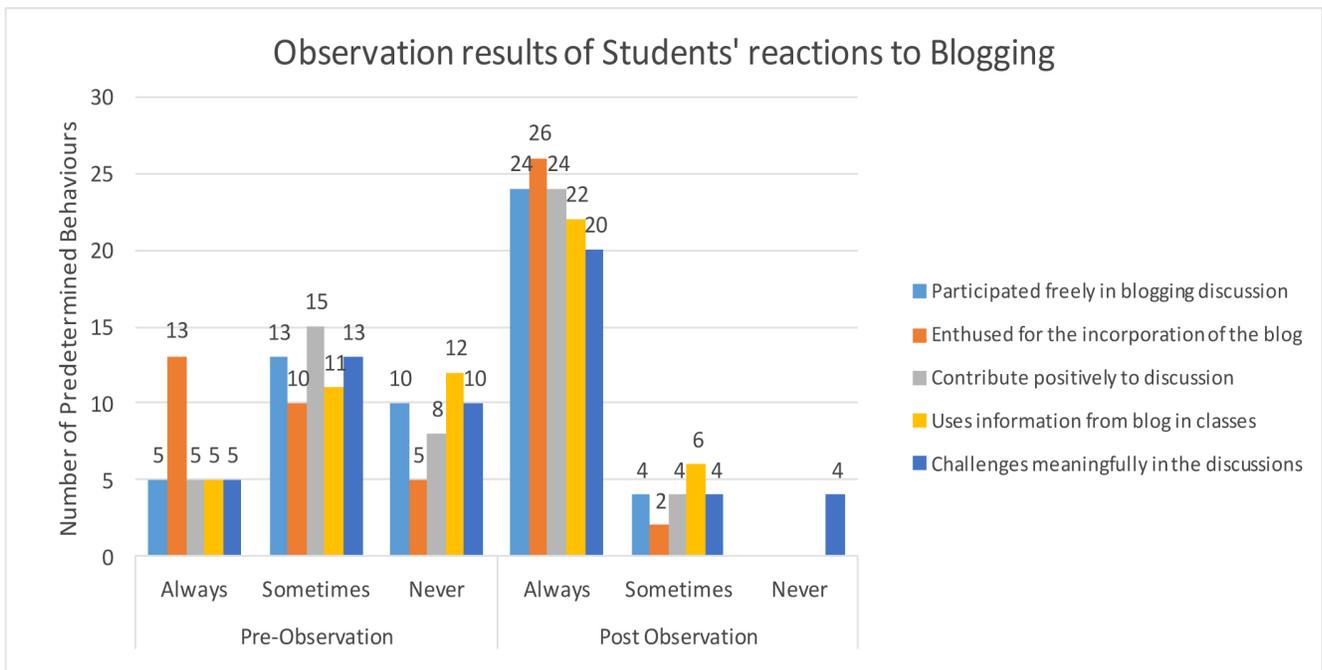


Figure 3: Observation results of students’ reactions to blogging.

With regards to showing enthusiasm for the use of blogging in History classes, on the categories ‘always’, ‘sometimes’, and ‘never’ accounted for thirteen, ten and five students respectively. The categories ‘always’ and ‘sometimes’, accounted for twenty-six and two students respectively for the same predetermined behaviour during the post observation.

For the predetermined behaviour *contributes positively to discussion*, the categories ‘always’, ‘sometimes’, and ‘never’ accounted for five, fifteen and eight students respectively during the pre-observation while during the post-observation the same categories accounted for twenty-two and six students respectively.

With regard to using information from blogs during subsequent classes, during the pre-observation five students always did, eleven did so from time to time and twelve did not. During the post-observation twenty-two students always used the information from the blogs in class, while the remaining six used it sometimes. With reference to challenging the input of classmates, the categories always, sometimes, and never accounted for five, thirteen and four students respectively. The categories always, sometimes, and never accounted for twenty, four and four students respectively for the same predetermined behaviour during the post-observation.

## Discussion

The major results of the questionnaire data analysis show that 78% of the sample agreed to improved reading, writing and vocabulary skills and also to getting speedy feedback from the teacher on comments made with the use of the blog — all of this suggesting positive reaction to its use. Furthermore, 83% of the sample agreed to being helped by classmates through the use of the blogs and history concepts being made clearer. This further substantiates the students’ positive reaction to the use of blogs. By the end of the investigation, 65% of the sample agreed to improved grades and a boost to self-confidence, which are positive reactions.

From the analysis of the interview data, the positive themes outnumbered the negative ones with regard to the students’ reactions to the use of the strategy. The students reacted positively, as they believed the strategy helped them to be better history students. They refer to positive interactions, improved self-confidence, improved attitude towards history; and expressed the need to have a wider use of the strategy. The students did find history more enjoyable — this was evident in their positive reactions to the use of blogs.

From the analyses of the data from the post-observation it is seen that the students’ reaction to the use of blogs improved tremendously by the end of the investigation. The sample who always participated freely increased by 69%. Ninety three per cent of the sample displayed enthusiasm consistently for the use of the blog. Seventy eight per cent of the sample always contributed meaningfully to the discussion and made use of the information in subsequent classes, while 71% of the sample always challenged the input of their classmates meaningfully.

As stated in the related literature, blogs facilitate the characteristics of shared interests and of shared support, which are rarely possible in traditional classrooms (Sun, 2010). Using a blog in the classroom can also increase motivation, challenge critical thinking skills, aid in differentiated instruction, extend the classroom walls, and cash in on student interest in technology (Sawmiller, 2010). However, there

were instances in which teachers had an issue with students' participation on blogs, which was not as proactive as they thought it would be (Kresser, Wiggins & Jiménez, 2012). This confirms the findings in the early stages of the research, but contrasts with the final outcome.

### **Conclusion**

The use of blogging had a very positive impact on students' performance in History. The performance of the entire sample improved as a result of the use of the technology. In this research, there was a statistically significant difference between the pre- and post-test achievement.

The percentage increases for the students indicate positive changes in all but one of the students' scores. The difference in the standard deviations between the pre- and post-test shows that the students had better learning outcomes on the post-test. The mean difference between pre-test and final post-test is also quite significant.

The students reacted positively to the use of blogging. Using this technology motivated students and helped them to develop skills and interest. This led to a better understanding of history concepts, which enabled the students to achieve better scores after teaching by using this form of technology.

### **RECOMMENDATIONS**

Following the results of this study, the following recommendations have been made:

- Further research to be done with the same set of students over a longer period of time.
- Blogging to be used to impact on students' interest in the teaching and learning process.
- Research to be done to compare the value of blogging to other technologies.
- Further research to be conducted to determine the impact of blogging on students' interest in history.
- Teachers should be encouraged to use blogging in teaching a wide array of subjects
- Further research be done, applying the blog approach to a variety of history topics to arouse interest and increase student interaction.
- Further research to be done to find the role of non-technological games in lessening the gender discriminatory behaviour of students in co-educational institutions.
- Authors of history textbooks to be encouraged to further simplify their textbooks by involving blogging as a technique.
- Stakeholders in history education should endeavor to organize workshops/seminars where history teachers can be trained on the use of blogs in teaching their students.
- School administrators should encourage their teachers to use blogging as an approach to help students.

### **CONCLUSION**

The results highlight the fact that blogging can be used to enhance the teaching and learning process. Academically, students can be uplifted through the use of blogs as they provide opportunities that traditional teaching cannot. The use of blogging added to the students' motivation and by extension

this study also sends a message to the teacher training institutions through the Ministry of Education to prepare prospective teachers in the efficient use of such of this technology. The researcher could also have been more efficient in the use of the technology. The fact that the researcher is new to the process of research could have affected the outcomes, as the researcher was learning the research process as the investigation unfolded. The impact of possible intervening variables was not taken into account, hence the results of this research cannot be generalized.

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# The Effects of Peer Tutoring on a Class of Grade 10 Students' Behaviour at a Secondary School in Western Jamaica

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## ABSTRACT

This action research was designed to enhance Grade 10 students' behaviour through the use of peer tutoring at an all-boys school. The sample consisted of 26 participants — 2 teachers and 24 students. Convenience sampling was employed. Three research questions guided the data collection process and instruments included: semi-structured interviews, observation checklists, researcher's journal, open ended questionnaires and focus groups. This study was conducted over a 12-week period.

Findings from the study indicated that the major problematic behaviours in the classroom are: excessive talking, lateness in class attendance, inappropriate use of language, a deficit in respect in student-student relationships and students being too easily distracted during instructional time. Other findings consistent with the literature revealed that students believe the peer tutoring strategy can be helpful in curbing behavioural problems, whilst positively augmenting their academic performance; fostering camaraderie when working together — although some students prefer to work alone; enhancing interest, respect and participation in classroom activities.

**Keywords:** peer tutoring, student behavior, student performance

## INTRODUCTION

Youths are disproportionately represented in crime and violence, both as victims and as perpetrators. In many countries violent crimes are being committed at younger ages, and the proportion of violent crimes committed by youths has been increasing (UNODC & World Bank, 2007). In America, Rizzolo (2012) claimed that behaviour in America's public schools is serious, pervasive and is compromising student learning. Rizzolo (2012) also stated that virtually all teachers (97%) said good behaviour is a prerequisite for a successful school; and virtually all (93%) said it is the public schools' job to teach students to follow the rules for them to function in society. Nearly 8 in 10 teachers said their schools have students who should be removed and sent to alternative schools. The severity of students' bad behaviour resulted in more than 1 in every 3 teachers leaving the teaching profession. In England, Clark (2014) posited that English pupils were among the worst behaved in the world. In Clark's (2014) article, it was stated that the testimonies of teachers painted a disturbing picture. He said: "It is a condition of working at this school that you have to face serious disruption on a daily basis, pupils screaming obscenities, refusing to comply with requests to stop appalling behaviour, threatening, spitting, swearing."

The situation is somewhat similar in Jamaica as an article from the *Jamaica Observer* (2013) declared that Jamaican youths are at risk and they begin to engage in violent behaviour at an early age — between 10 to 15 years old (Sepaul, 2012). This article also cited instances of violence among school children across Jamaica, inclusive of students being taken into police custody for murdering other students and attacking teachers. Additionally, Thwaites (2015) posited that there are behavioural

and social issues as well as challenges affecting our children which have caused a major problem in the education system. Data from the Ministry of National Security's Safe School Programme indicated that during the 2012/2013 Academic Year, 3,671 students were identified with anti-social behaviours of varying degrees.

While the researcher was on second and third year teaching practicum in 2015 and 2016 respectively, many behavioural problems were observed. These problematic behaviours included: unnecessary talking in class, lateness in class attendance, sniping remarks, physical confrontation, inappropriate use of cellular phones and not completing tasks. These behaviours seemed mild rather than chronic, and if they were not controlled, would have resulted in classroom anarchy. It was observed that sometimes some of the students were unaware of how to approach the work given to them in class, which resulted in them becoming seemingly disinterested and mentally disoriented. This then gave way for them to start displaying unacceptable behaviours in the classroom. Some of the students also relied on other students to do the work for them because they were not as familiar with the content. This was an indication that there were students who could help in assisting other students to learn. The researcher believed that an intervention was needed to curb these behavioural problems and decided to use the "Peer Tutoring Strategy" as a viable intervention for the behavioural problems observed.

Igbo (2005) mentioned that the increased behavioural problems students display at school amounts to a recipe for disaster, and there needs to be an intervention. Every child goes to school at some time, and there is no other institution with such potential for positive socialization (Ministry of Education, 2014). Peer tutoring is the process by which a competent pupil with minimal training, guided by a teacher, helps one or more students at the same grade level to learn a skill or concept (Thomas, 2000). In addition, Riessman (1990) stated that "Peer resource programmes, whether they be cooperative learning groups or one-on-one peer tutoring, are most effective when each person involved experiences both the helper and the helpee role". Research shows that students involved in peer tutoring show higher academic achievement, improved relationships with peers, improved personal and social development, and increased motivation (O'Donnell, 1999).

### **Purpose of Study**

The purpose of this study was to enhance students' behaviour through the use of peer tutoring in the classroom. Due to the extent of the behavioural problems that continue to persist in the classroom and the fact that studies have proven that the peer tutoring strategy is one that is beneficial, this intervention was adopted to curb bad behaviours. The researcher also intended to find out students' perceptions and the social benefits to be derived from the use of this strategy.

### **Research Questions**

1. What are students' perceptions of using peer tutoring in class activities?
2. What are the social benefits of peer tutoring in a Grade 10 Principles of Accounts class?
3. How can peer tutoring be used to enhance students' behaviours?

## **Significance of Study**

This study will provide information on the effects of a peer tutoring strategy as an effective intervention procedure with stakeholders; including the researcher, who will learn how to correctly employ the strategy to achieve meaningful outcomes during the teaching and learning process. This research will also add to the body of knowledge. It is hoped that teachers will be able to spend less time addressing social behaviours and more time teaching and learning. It is also expected that parents and guardians will gain more knowledge about the strategy, and that students will value the time spent on performing tasks while improving their social skills. The school's administrators will encourage their teachers to utilize the strategy, thereby spending less time addressing behavioural issues and more class time on instruction as well as on social and cognitive development. It is hoped that the Ministry of Education (MOE) and curriculum developers will motivate teachers to utilize the strategy.

## **LITERATURE REVIEW**

Bicard & Bicard (2012) opined that student behaviour is something that a student does, and can be observed, measured and repeated. Undoubtedly, peer tutoring is an effective educational strategy for classrooms of diverse learners, including students with disabilities, as it promotes academic gains and immeasurable social enhancement (The Access Center, 2008). This literature review is organized under different subheadings:

- problematic students' behaviour,
- peer tutoring strategy, and
- appropriateness of the intervention.

### **Problematic Students' Behaviour**

According to Igbo (2005), there has been a high increase in anti-social behaviour in schools and teachers are disturbed about it. It is posited that by the eighth grade, 31.5% of students use alcohol and 26.2% smoke cigarettes monthly. Approximately 44.2% have been in physical fights, while truancy, bullying, theft, and vandalism are still and evidently common (Bruce, Morton, Crump, Haynie, & Saylor, 2011). Anti-social behaviours are disruptive acts characterized by covert and overt hostility, resulting in intentional aggression towards others. In a nutshell, overt behaviours are easily seen or noticed while covert behaviours are not easily seen or noticed, (Merriam-Webster Dictionary, 2011). It should be noted that both types of behaviour exist along a severity continuum and include repeated violations of social rules, as well as defiance of authority and the rights of others, including, deceitfulness, theft, and reckless disregard for self and others (Encyclopedia of Children's Health, 2011). In regard to anti-social behaviours, covert behaviours involve aggressive actions towards property, such as theft, vandalism, and arson. Other actions include drug and alcohol abuse and high risk activities involving self and others (Eskay, Onu, Obiyo & Obidoa, 2012). Subsequently, these behaviours may be overt, involving aggressive actions against siblings, peers, parents, teachers, authority figures, and other adults, including verbal abuse, bullying, and hitting (Eskay et al., 2012). Internalizing and externalizing behavioural deficits that may negatively affect academic outcomes include: conduct disorder, poor self-regulation, difficulties in social and problem-solving skills, and problems with attention and hyperactivity (Bowman-Perrot,

Burke, Zhang & Zaini, 2014). Hence, there is a relationship between negative socialization and poor academic achievement.

Students' behaviour is also related to students' achievement. There is a growing recognition of the linkages between behavioural problems and academic achievement, as well as the need for interventions addressing them both (Bowman-Perrot et al., 2014). Correlational research examined the relationship between various types of problem behaviours and academic achievements (Malecki & Elliot, 2002). There are two primary areas of focus:

1. The influence of academic underachievement as a predictor of, or contributor to, emotional and behavioural problems in which academic deficits (often in basic skill areas such as reading) seem to exacerbate existing behavioural difficulties and affect social and behavioural outcomes (Darney, Reinke, Herman, Stormont, & Ialongo, 2013).
2. The behavioural deficits that can adversely affect academic outcomes (Lassen, Steele, & Sailor, 2006).

The relationship between behaviour problems and academic achievement remains unclear; the presence of academic or behavioural deficits is troublesome. Social deficits have been linked to behaviour problems and lower academic achievement e.g., poor school adjustment, suspension and expulsion from school (Bowman-Perrot et al., 2014).

There is a need for enriching students' academic achievement within a 'social context'. Thus, it is important to implement evidence-based practices that promote behavioural and social adjustment, prevent academic failure, and remediate academic deficits. Furthermore, correcting behavioural problems will strengthen academic achievement. Given the lack of clarity surrounding the relationship between behaviour problems and academic achievement, interventions that address each of these areas are more desirable than those that address them separately (Bowman-Perrot et al., 2014).

### **Peer Tutoring Strategy**

Peer tutoring is a method of instruction that involves students teaching other students of the same age or grade level (Stoddard, 2010). In addition, it can aid in the instruction of a few specific students or on a class-wide basis. The strategy is used as supplement to teacher-directed instruction in the classroom. It is not meant to replace it, but has been extremely powerful as a way of improving student academic, social, and behavioural functioning that goes beyond typical teacher-directed instruction. As postulated by Eskay, Onu, Obiyo, & Obidoa (2012), peer tutoring, when implemented in addition to teacher-directed instruction, among other things has led to greater decrease and/or prevention of anti-social behaviour than teacher-directed instruction only.

According to Hott, Walker, & Sahni (2012), the most frequently used peer tutoring models are:

1. **Class-wide Peer Tutoring (CWPT):** Class-wide peer tutoring involves dividing the entire class into groups of two to five students with differing ability levels. Students then act as tutors, tutees, or both tutors and tutees.
2. **Cross-age Peer Tutoring:** Older students are paired with younger students to teach or review a skill. The positions of tutor and tutee do not change. The older student serves as the tutor and the younger student is the tutee.

3. Peer Assisted Learning Strategies (PALS): PALS, a version of the CWPT model, involves a teacher pairing students who need additional instruction or help with a peer who can assist. Groups are flexible and change often across a variety of subject areas or skills.
4. Reciprocal Peer Tutoring: Two or more students alternate between acting as the tutor and tutee during each session, with equitable time in each role. Often, higher performing students are paired with lower performing students. RPT utilizes a structured format that encourages teaching material, monitoring answers, and evaluating and encouraging peers. Both group and individual rewards may be earned to motivate and maximize learning.
5. Same-age Peer Tutoring: Peers who are within one or two years of age are paired to review key concepts. Students may have similar ability levels or a more advanced student can be paired with a less advanced student.

### **The effects of peer tutoring**

Many reasons have been put forward for teachers' current preference for peer tutoring:

- Students are less likely to engage in behaviours that are disruptive or problematic.
- It provides students with valuable opportunities to practice their social skills in a structured environment, and the teacher can then directly monitor social interaction, and;
- It provides favorable conditions for a student to become an active, self-regulated learner (Eskay et al., 2012).

As posited by the Access Center (2008), peer tutoring links high achieving students with lower achieving students. In addition peer tutoring has been shown to work for students with all kinds of special learning and behavioural needs. Cooley (2003) showed that peer tutoring helps students with attention deficit hyperactive disorder pay attention longer and stay in their seats to finish their tasks.

Other benefits of peer tutoring for students include higher academic achievement, improved relationships with peers, improved personal and social development as well as increased motivation. In turn, the teacher benefits from this model of instruction by an increased opportunity to individualize instruction, increased facilitation of inclusion/mainstreaming, and opportunities to reduce inappropriate behaviours (Topping, 2008). Social skills and social interactions yielded the largest effect size among the target behaviours. This is logical given the nature of peer-mediated instruction, and the overall correlation between behavioural and social outcomes and academic achievement was strong (Bowman-Perrot et al., 2014). The benefits of peer tutoring cannot be overstated and it works best when students of different ability levels work together (Kunsch, Jitendra, & Sood, 2007).

Peer tutoring is an economically and educationally effective intervention that benefits both the tutor and tutee — socially and educationally — by motivating them to learn. It also allows teachers to accommodate a classroom of diverse learners to improve academic achievement across ability levels and content areas (The Access Center, 2008).

Peer tutoring is a widely-researched practice across ages, grade levels, and subject areas; the intervention allows students to receive one-to-one assistance, gives them increased opportunity to respond in smaller groups, promotes academic and social development for both the tutor and tutee, engages students, increases time on tasks, self-confidence and self-efficacy (Hott & Walker, 2012).

### **Appropriateness of intervention**

It should be duly noted that peer tutoring was found to be a slightly more effective intervention for middle and high school students (Bowman-Perrott, Davis, Vannest, Williams, Greenwood & Parker, 2013). Additionally, it was postulated that “secondary students, in particular, derived greater benefit from peer tutoring arrangements” (Bowman-Perrot et al., 2014).

### **METHODOLOGY**

The researcher conducted an action research over a twelve week period. According to Abalos (2011), practical action research is one that addresses a specific problem within a classroom, school or other community. It is applicable for use as there is a problem identified and an intervention that is needed to address the problem.

The instruments used in this study included focus group interviews, semi-structured interviews, observation checklists, teachers’ journal/field-notes and open-ended questionnaires.

### **Population**

This research was conducted at a secondary all boys’ school in western Jamaica referred to as ‘On-point High School’. It is located in a large rural farming community and is known for providing high quality secondary education. The school has a very large population of about 1,300 students. The school’s atmosphere is very conducive to learning — very cool and windy at times. The school provides boarding for students who wish to live on campus and also has an effective bus system to carry students to and from school. Extra-curricular activities and sports involvement are profoundly encouraged at this school.

### **Sample**

The sample consisted of 24 grade ten students pursuing Principles of Accounts and 2 teachers from the Business Department. The students’ ages ranged between 15 and 17 years. The class was a mixture of students doing Business Studies, Sciences and Arts. Some students in the class played football and cricket, while other students were active members of other clubs. The two teachers were selected based on their direct involvement with the students over a one year period.

### **Sampling Technique**

The researcher utilized convenience sampling. Creswell (2008) described convenience sampling as when the researcher selects respondents because they are willing and available. In other words, convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher.

### **Instrumentation**

Three data collecting instruments were used for each research question to assure reliability and validity of the study.

| <b>TABLE 1. TRIANGULATION MATRIX HIGHLIGHTING DATA COLLECTING INSTRUMENTS FOR EACH RESEARCH QUESTION</b>     |                               |                           |   |
|--|-------------------------------|---------------------------|---|
| <b>Research questions</b>  | <b>Primary source</b>         | <b>Secondary source</b>   | <b>Other source(s)</b>                          |
| <b>Question 1:</b> What are students' perceptions on using peer tutoring in class activities?                | Semi-structured interview     | Open ended questionnaire  | Focus group interview and Observation checklist |
| <b>Question 2:</b> What are the social benefits of peer tutoring in a grade 10 Principles of Accounts class? | Open ended questionnaire      | Focus group interview     | Semi-structured interview                       |
| <b>Question 3:</b> How can peer tutoring be used to enhance students' behaviours?                            | Teacher's journal/Field notes | Semi-structured interview | Open-ended questionnaire                        |

**Focus group interview:** A focus group interview can be described as interviewing more than one person at a time and having them discuss their views in an open discussion. The focus group interview was carried out on December 10, 2015. There were 8 interviewees. A total of 6 questions were asked, with follow-up questions based on how the participants responded. The focus group interview lasted for one hour.

**Semi-structured interview:** A semi-structured interview is one that is not limited to only the questions that are written by the interviewer for the interviewee. A semi-structured interview allows for follow-up questions. Four interviews were done: two separate interviews with a student and two separate interviews with two teachers of Principles of Accounts. Interviews with each student were done on November 19, 2015 and lasted for 30 minutes. Interviews with each teacher were done on November 23, 2015 and lasted for 10 minutes. The purpose for the separate interviews was to obtain unbiased viewpoints, as participants would not be influenced by the other responses.

**Observation checklist:** The researcher used three observation checklists. The first on the October 7, 2015, the second on October 28, 2015 and the third on November 6, 2015. The researcher keenly observed the behaviours of the students before, during and after the intervention. The behaviours were observed were categorized under the themes: interest, co-operation, participation, respect and focus. Observation is important as the intervention was to increase desirable students' behaviours. In addition, observation of students' behaviour and their oral responses were matched to see if there was probity from the participants' responses.

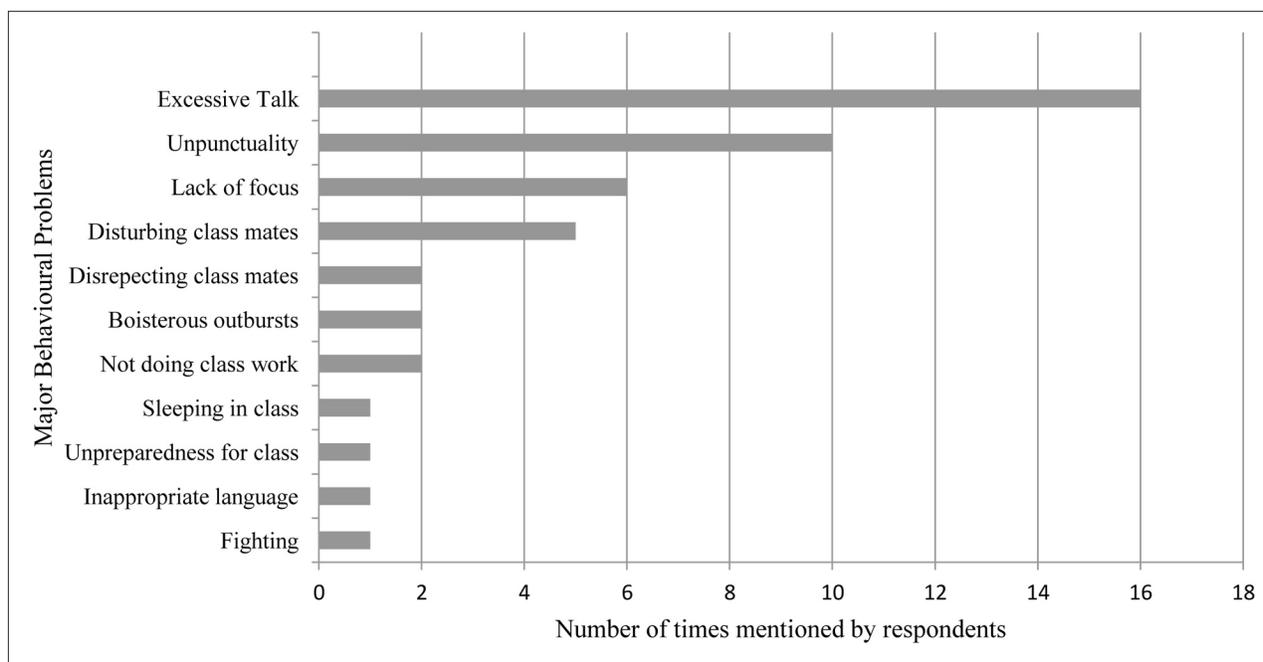
**Open ended questionnaire:** Two questionnaires were issued: one at the onset of the intervention and the other after the intervention. The purpose for this was to capture participants' views before and after the intervention had been administered to see the changes in their views and compare them. Open ended questionnaires do not limit the answers. The participants wrote as much as they wanted in response to each question. This gave more in-depth data and participants' responses were carefully examined.

**Teachers' journal/Field notes:** The researcher kept a journal that was used to document the happenings at each class while the intervention was being administered. This is also known as field notes. Field notes are notes created by the researcher during the act of qualitative fieldwork to remember and record the behaviours, activities, events, and other features of an observation (Research Guides, 2016). The researcher carefully observed participants behaviours and made notes where necessary. This instrument also helped to document ways in which the researcher tried to improve the students' behaviour and gave detailed information about the ways in which these were implemented. The teacher's journal/field notes also served as proof and helped in reminding the researcher of what transpired on different days. Research Guides (2016) noted that field notes are intended to be read by the researcher as evidence to produce meaning and an understanding of the culture, social situation, or phenomenon being studied.

## ANALYSIS AND DISCUSSION

The researcher transcribed the responses and generated codes from the interviews. According to Saldana (2009) a code is a word, phrase or sentence that represents aspect(s) of data which capture the essence or feature of the data. After coding was done, the researcher generated themes which formed the basis of discussions. Quantitative data are presented via bar graphs, pie charts and tables. Qualitative data are presented using different themes and descriptive analyses.

Prior to intervention, in September 2015 the researcher administered a questionnaire to determine the major behavioural problems among students. The results are outlined in Figure 1.



**Figure 1:** Horizontal bar chart showing the major behavioural problems that were evident in class (September 29, 2015)

Figure 1.1 shows that the major behavioural problems in class before intervention were: excessive talking in class which was endorsed by 67% (n=16) of the participants. 42% (n=10) of the respondents stated that students were always late for class, while another 25% (n=6) indicated that students were easily distracted and lacked focus in class. Between 0 to 20% (n = 0 – 5) said that sleeping in class, unpreparedness for class, inappropriate language and fighting were the least reported behavioural problems. Although the researcher considers these unacceptable behaviours to be somewhat mild, the peer tutoring strategy was used to curb these problems before they escalated. Bowman-Perrot et al (2014) suggested that the peer tutoring strategy worked well at the secondary school level to curb these behavioural problems.

**Research Question 1:**

**What are students’ perceptions of using peer tutoring in class activities?**

Based on the responses to the pre-questionnaire, the perceptions of peer tutoring varied. Most of the students stated that peer tutoring involved one friend assisting another. For example, student 18 stated “Peer Tutoring is when one student assists another in the teaching learning process.” This perception is similar to the definition stated by Harris (2002) that peer tutoring can be described as an instructional system in which students teach other students.

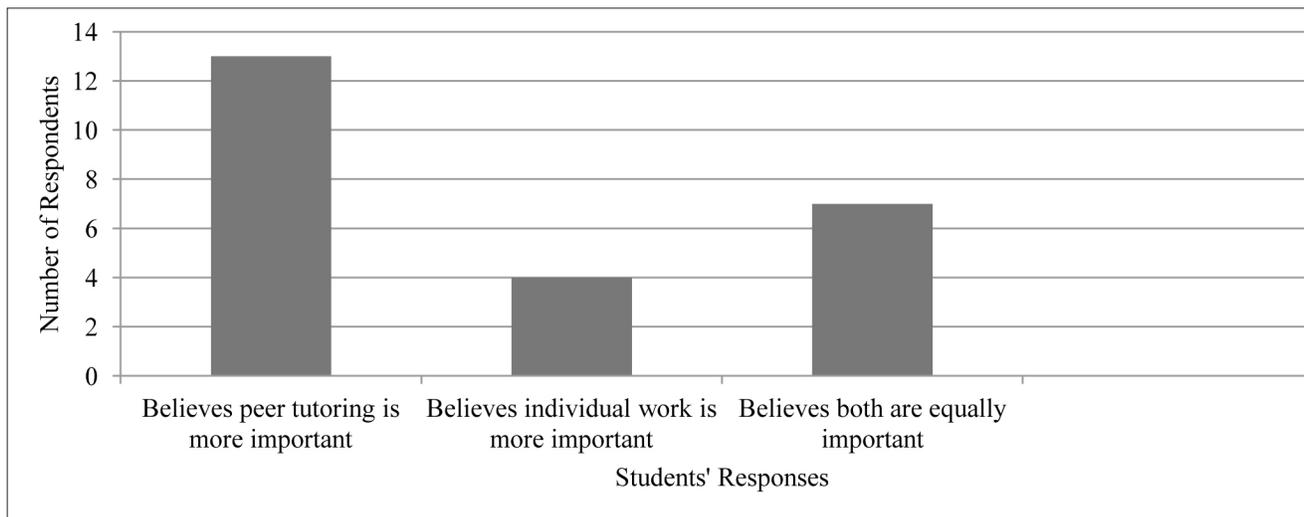
| <b>TABLE 2. STUDENTS’ PERCEPTIONS OF THE BENEFITS OF PEER TUTORING BEFORE INTERVENTION</b> |                  |                   |
|--|------------------|-------------------|
| <b>Responses</b>   | <b>Frequency</b> | <b>Percentage</b> |
| <b>Yes</b>   | <b>13</b>        | <b>54.2%</b>      |
| <b>No</b>  | <b>8</b>         | <b>33.3%</b>      |
| <b>Not sure</b>  | <b>3</b>         | <b>12.5%</b>      |
| <b>Total</b>   | <b>24</b>        | <b>100%</b>       |

Table 2 shows that 54% (n=13) of the participants believed that the peer tutoring strategy would be beneficial to them. Approximately 33.3% (n=8) perceived that this would not be of benefit to them. The remaining 12.5% (n=3) were not sure.

Student 1 stated that “...this would encourage more people to study and increase their grades as studying would not appear as much as a boring tedious form of torture...”. However, student 4 stated, “I don’t really think it helps. I think when a person is older he or she is more respected.” Since most students believe that Peer Tutoring would be beneficial to them, it is a good start for the intervention to be administered.

Table 3 shows that after the intervention, 87.5% (n=21) of the participants believed that the Peer Tutoring strategy was beneficial. This is a 33.3% increase in the number of students who now believe the strategy is beneficial to them.

| Responses | Frequency | Percentage |
|-----------|-----------|------------|
| Yes       | 21        | 87.5%      |
| No        | 3         | 12.5%      |
| Not sure  | 0         | 0          |
| Total     | 24        | 100%       |

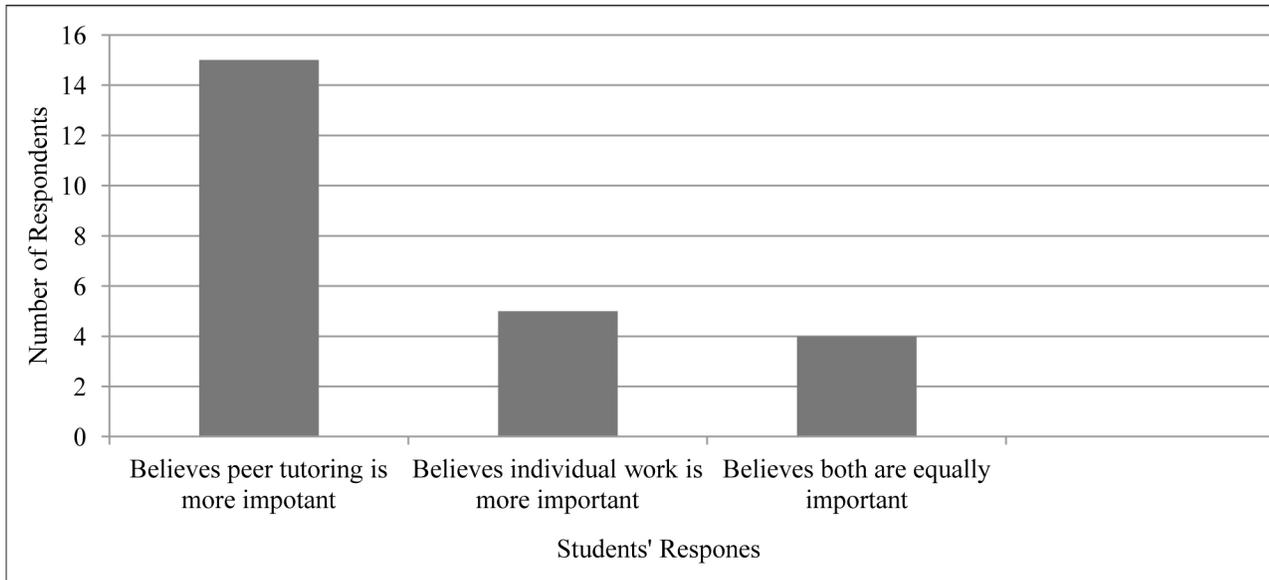


**Figure 2.** Bar chart showing students' preferences before the peer tutoring strategy was administered.

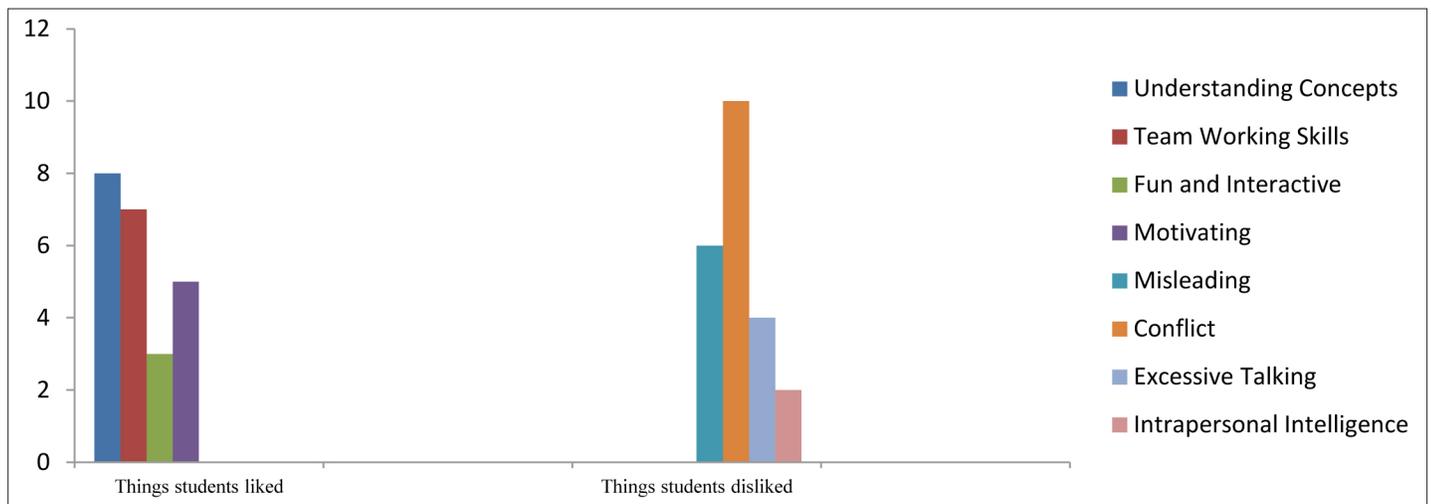
In regards to question 6 of the pre-questionnaire, “Do you think peer tutoring is better than individual work? Explain why”. Fifty-four percent ( $n = 13$ ) of the participants believed that peer tutoring was better than individual work while only 29% ( $n = 7$ ) believed that individual work was more important. Student 5 stated, “Yes. It makes you into a fully function person, makes you become stronger as an individual and develop necessary skills needed to work with others”, while student 11 stated that “For me it is not better cause I work good by myself and I don’t like noise and talking to distract me”. It can be interpreted that some students fear that they may be distracted in peer groups, so proper supervision and monitoring of the strategy is important.

After the intervention was administered, the second questionnaire (Appendix 6) yielded the data that is shown in Figure 3. The results did not vary by much. What stands out is that in both Figure 2 and Figure 3, most of the students believed that peer tutoring was more important. The number of participants who believed that peer tutoring was more important increased by 2; participants who believed that individual work was more important increased by 1. Two students wrote that, “based on the experience with peer tutoring I can say that I like working with others — socializing, putting ideas together and working

towards one goal”. Another stated that “since being engaged in peer tutoring I now rather working with a peer as I realize that I learn more with a peer than alone”.



**Figure 3.** Bar chart showing students’ preferences after the peer tutoring strategy was administered.

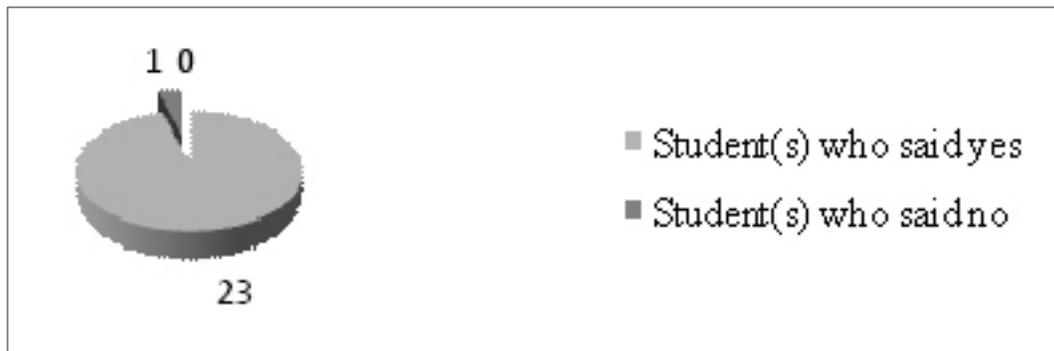


**Figure 4.** Graph showing what students liked and disliked about the peer tutoring strategy.

Participants also stated what they liked and disliked about the Peer Tutoring Strategy from the post questionnaire, the responses are shown in Figure 4. Most students, 33.3% (n =8) liked that the strategy made them understand concepts more. What students liked least 12.5% ( n=3) was that it was fun and

interactive. Student 4 said, “We could help peers with the work and it helped us to remember what you taught us.”

Most students, 42% (n=10) disliked that conflict arose a lot with Peer Tutoring. Student 15 wrote, “Sir, sometimes some of the peer tutors act as if they are bosses...some of the peers want to be the peer tutor and show you up if you make a mistake.” It seems that power struggles arose in the process. Evidently, it seems that if the peer tutors sometimes try to exert control over tutees as ‘bosses’. This power struggle was found by Carino (2003) in his study. It must be emphasized that when using this strategy, proper supervision be done to lessen what students disliked about it.



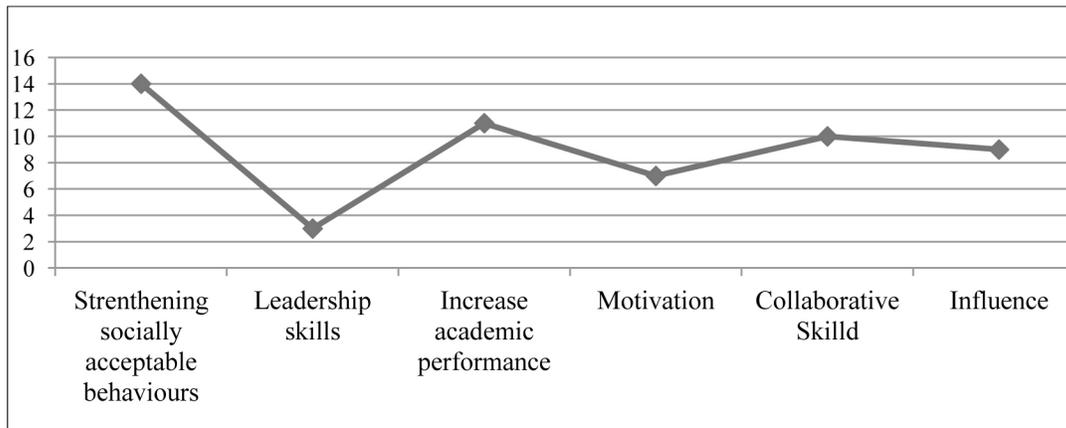
**Figure 5.** The ratio of 23:1 of students who would recommend peer tutoring in other classes to those who would not.

When asked if students would recommend peer tutoring, student 1 stated, “Yes. I would recommend peer tutoring because no one person knows everything and sometimes the other person may know — therefore an exchange of knowledge takes place.” Conversely, student 7 wrote, “No, because it may not work effectively in other classes.” The type of class and appropriateness of the strategy must be considered. Effectiveness in class A does not guarantee effectiveness in class B, as different situations can yield different results. The varying results that peer tutoring may have in different classes is also purported by Topping (2011).

### **Research Question 2:**

#### **What are the social benefits of peer tutoring in a grade 10 Principles of Accounts class?**

In analyzing the data for this research question, common themes were formulated and narratives were used. The common themes are: strengthening socially acceptable behaviours, leadership skills, collaborative skills, influence, motivation; and increased academic performance. Figure 6 shows the frequency of common themes from respondents.



**Figure 6.** Figure showing the frequency of common themes from the pre and post questionnaires.

***Strengthening socially acceptable behaviours***

Some of the socially acceptable behaviours are: being respectful to others, following rules and regulations, positive attitudes for the world of work, politeness, and honesty. Student 15 in the pre-questionnaire stated, “Peer tutoring will help students’ overall behaviour by working together and learning each others’ behavioural attitudes.” Similarly student 17 in the post questionnaire wrote “It will help students to build social skills to help mentoring or help counselling peers to have good behaviours and always be respectful”. A respondent in the focus group said, “It helps us to follow the class rules as well as to respect our peers.” In the interview with one of the teachers, it was suggested that the students’ participation in the peer tutoring strategy is significant as, “it develops maturity, as they exercise self control, initiative and respect for peers.” Findings similar to this are cited by Cartledge (2004) in her study.

***Leadership skills***

In the interview, teacher 1 posited that, “this can help them to be leaders as they are exposed to it via this medium”. Peer tutors are exposed to leading, mentoring and coaching the peer tutees that are working with them. The teacher also believed that students engaging in peer tutoring at this level will “...to become better leaders of influence...”. In the focus group interview with the eight students, a follow up question was asked by the researcher — “Do you think peer tutoring can aid in developing students’ leadership skills...?” All the students in the focus group agreed that peer tutoring increases students’ leadership capabilities. Peer tutors were given the responsibility of assisting the peer tutees by reminding them of the classroom rules, enforcing the rules, aiding them with classwork, etc. Peer tutors worked closely with the researcher/teacher.

***Collaborative skills***

In the pre-questionnaire, student 8 stated “I believe peer tutoring will help in students’ overall behaviour as they will be better able to work in groups.” Similarly student 20 wrote “I learn to cooperate with my peers and to be tolerant of them.” These responses came from the first questionnaire. This means that peer tutoring does allow the students to work together.

Responses from the post-questionnaire were congruent. Student 3 wrote, “Yes, I would recommend peer tutoring. The reason I say this is because peer tutoring can help students to socialize and learn from each other.” When students collaborate with students, it is of the utmost importance that they socialize with each other and share in learning experiences. Student 14 in response to question 3 on the second questionnaire said, “Yes. Whilst I may not like it, it helps students to bond with each other better and build intrapersonal skills.” In the interview, teacher 2 stressed that, “Indeed, it is important for students at this age/grade level to be engaged in peer tutoring, because it will help them to develop positive attitudes for the world of work. They will know how to work in teams, and this is very important for their future.” The study by Eskay et al (2012) proves that peer tutoring also helps with collaborative skills.

### ***Influence***

Influence was evident. “Some students might listen to their peers when he or she talks to them more than when a teacher talks, hence better behaviour from students”, student 9 stated. “The majority of the young people in the school are mostly influenced by their peers, so if their peer is doing the right thing, they would also follow the way that person behaves”, added student 2. Teacher 1 suggested that, “students in the same age group have a close rapport and influence on their peers ... because at this age level it teaches them to become better leaders of influence”. A finding that supports this is in the study of Dill and Boykin (2014). It may even assist them in choosing their career goals and becoming teachers in the near future. Teacher 2 proffered that, “peers can influence peers to follow the rules of the institution, hence could assist in them becoming law-abiding citizens.” It should be duly noted that peers have a huge influence on each other. It is therefore incumbent that the positive attitudes of students can flow from peer to peer in the peer tutoring strategy.

### ***Motivation***

Student 3 stated that “one of the social benefits received is an increase in motivation.” Similarly student 19 penned, “My benefits received from Peer Tutoring Strategy are it allows me to gain more knowledge and it motivates me to work more... working with my peers also helps to build my self confidence and it motivates me.” This finding is similar to the finding of Fasko & Wallace (2000). When respondents were asked if they would recommend the Peer Tutoring Strategy in other classes and why; a respondent wrote, “yes I would recommend peer tutoring in other classes because it helps the weaker students feel more confident and motivated to do more work.” Responses from the teacher interviews gave corresponding points of view. Teacher 1 believed it “motivates them to work harder ... it can help in making students more confident and developing their self-esteem, as they are motivated by peers.” Findings of enhanced self-esteem are supported by Gaustad (1993).

### ***Increased academic performance***

The peer tutoring strategy appeared to have increased students’ academic performance. From the focus group interview, a respondent stated that, “peer tutoring is an effective strategy to have students get work done.” Student 16 wrote, “because most times I am going through some haphazard situations that cause you to be absent from class ... the teacher may not be able to explain it to you alone again ... so it would be very beneficial if your peer understands it and is willing to help you so that everyone is

on the same level.” Student 7 said, “peer tutoring is important because if I help a friend or a classmate with school work, I will more than likely get better at a specific topic because doing it over will lead to perfection.” Additionally, teacher 1 said, “I think that some students will be more patient with their fellow pupils as well as their friends when assisting them with school work ... peer tutors can feel proud as they are reinforcing what they have already understood as they are assisting their fellow peers.” Teacher 1 also believes, “peer tutees can get to their peers easier for help if the teacher is not immediately accessible.” Similarly, teacher 2 said “Students being tutored may also receive an increase in their academic performance as they may receive more individual attention from the peer tutor in comparison to a teacher teaching an entire class. Nguyen (2013) in his study states that peer tutoring is a strategy to promote academic success.

Disadvantages of the intervention were also brought to the fore. Teacher 1 remarked, “if the peer tutors are not guided by the teacher, they may misguide the students by passing on wrong concepts...”. Of course, this could pose a major problem — hence adequate supervision must always be given whenever a teacher is using the Peer Tutoring Strategy in the classroom. “It is also possible, as some students will take advantage of the help from peer tutors and peer tutors will sort of ‘spoon feed’ peer tutees rather than having them try their best to do the work” the teacher added. Teacher 1 also stated that, “some persons may think that the peer tutor is not qualified to tutor their peers, and this may be problematic.” This drawback of the strategy is evident in an article by Briggs (2013). Certain disadvantages were also pinpointed by teacher 2. “Some students may refuse to help or be helped by their peers or classmates ... some parents may also take a negative view — parents will contest that they sent their child or children to school to be taught by the teacher ... possible disputes may arise due to personality clashes with peers.”

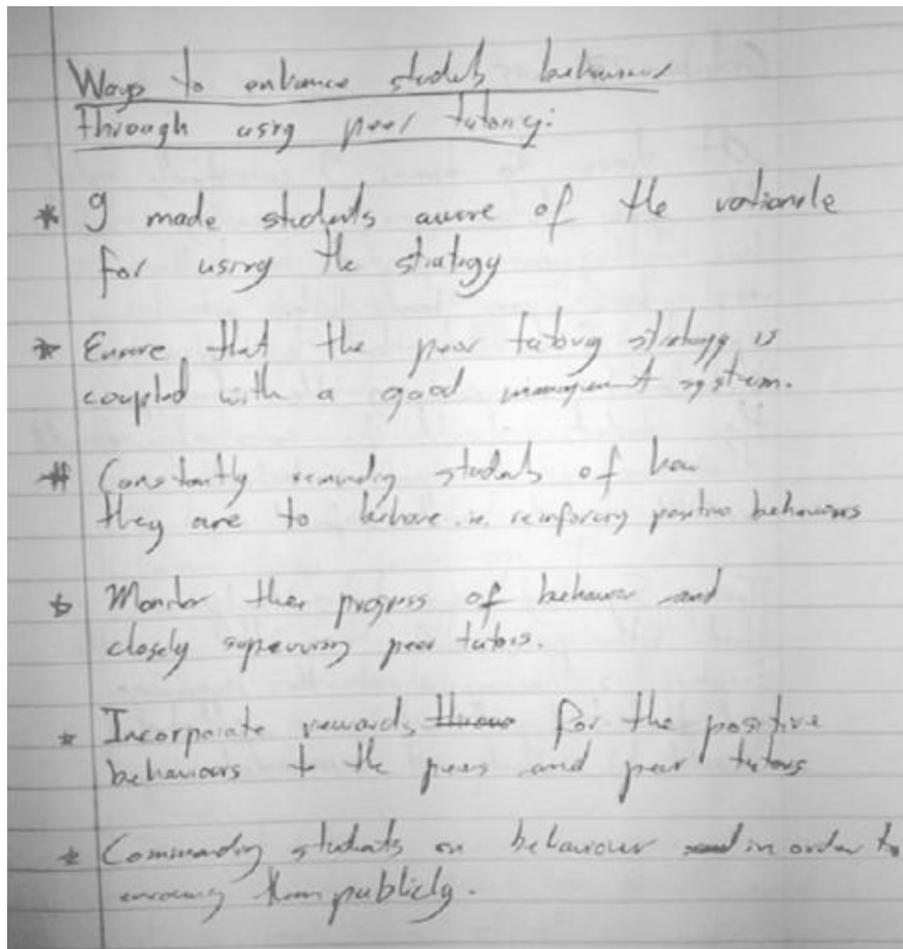
### **Research Question 3:**

#### **How can peer tutoring be used to enhance students’ behaviours?**

Data received from the field notes revealed ways to enhance students’ behaviour by using the peer tutoring strategy, as shown in Figure 7.

From Figure 7, it can be concluded that when students know the rationale for what they are doing then they will not only show more interest, but they will participate as expected. When a proper management system is used to ensure that the peer tutors and tutees are supervised closely, then students’ behaviour will be better monitored throughout the administration of the Peer Tutoring Strategy. If not, it can become very chaotic and mentally disorienting for some students, hence the teacher must diligently monitor the peer tutoring strategy. Of course, a constant reminder when the students ‘get out of line’ will always reinforce the positive behaviours that are expected. In doing this, monitoring each student’s behaviour is critical to see whether the strategy is helping to curb undesirable behaviours, or whether it is fuelling them.

Whenever students display good or better behaviour, it is always good to reward them. This motivates them to work well with each other and exhibit good behavioural attitudes in the classroom. Motivated students tend to excel academically and to exude positive behavioural patterns. Commending the students publicly will help to boost their self-esteem. The students can also be called individually by the teacher or in their peer groups, and commended wholeheartedly. This will make them try to display more positive attitudes, as they will be recognized for good and positive behaviours. Incorporating rewards in the peer tutoring strategy is supported by Hott et al (2012).



**Figure 7.** Photograph of Field Notes showing ways to enhance students' behaviour with Peer Tutoring.

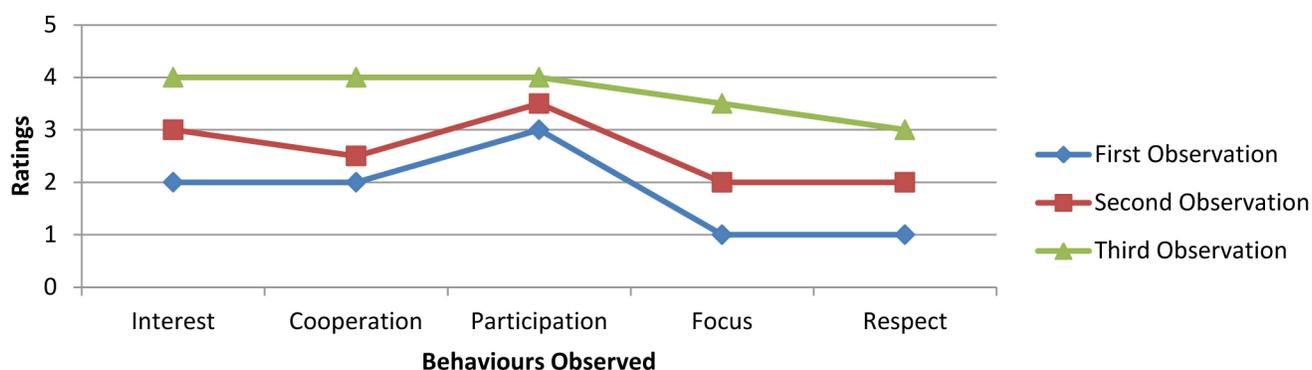
On November 10<sup>th</sup> 2015, the researcher wrote, “letting students be cognizant of the consequences and benefits of behaviours also goes a long way in students displaying more positively desiring behaviours ... another key is reasoning and ascribing the consequences and benefits and having the peer tutors reinforcing and reminding students after these have been established in a class discussion.” Therefore it is always good to ensure that students know what will happen if they do not conform to rules. Negative reinforcement and punishment should be given to weaken undesirable behaviours and positive reinforcements given to strengthen and consistently encourage desirable behaviours.

Peer tutoring can enhance positive behaviours in students — both in their social attitudes and attitudes to their academic work. The question that was posed to the teachers in the interview was: “How can peer tutoring assist in enhancing social behaviours and academics of students?” The responses from Teacher 1 on social behaviours were that it “motivates them to work harder and become more disciplined”. Teacher 1 added that peer tutoring “helps them respect each other ... influences them to follow rules and regulations of the institution, hence could assist them in becoming law abiding citizens.” On the note

of academics, Teacher 1 remarked that, via the peer tutoring strategy, they will “assist fellow peers in learning and understanding certain concepts in class.” Teacher 1 also stated that students “can get to their peers easier for help if the teacher is not immediately accessible.”

For the same question, Teacher 2 stated that “it can make the students (peer tutors) be more confident and their self esteem can also be developed...as they have to communicate with their peers and play a leadership role.” In addition, Teacher 2 affirmed that “students being tutored may also receive an increase in their performance — they may receive individual attention in comparison to a teacher teaching the entire class.”

An observation checklist was done by the researcher. Figure 8 shows the behaviours that were observed during the study.



**Figure 8.** Findings of observed behaviours after intervention on October 7, October 28 and November 6, 2015.

The first observation checklist was done in the second week of the intervention. The second observation checklist was completed in the fifth week and the third observation checklist was done in the seventh week.

As shown, the first observation checklist yielded the following ratings: interest=2, cooperation=2, participation=3, focus=1 and respect=1. This was the first time that the students were becoming engaged in the peer tutoring strategy in this class. By the second time the researcher did the observation checklist, the students behaviours improved. Students would have been in the ‘norming stage’ of the intervention. This means that students would be getting familiar with the strategy and the purpose of the strategy. The ratings increased in all behaviours. In the third observation checklist, students’ behaviours were even better, as the ratings confirmed that: Interest was now at 4, cooperation at 4, participation at 4, focus at 3, and respect at 3.

The differing ratios between the first and last ratings of the observed were 2:2:3:1:1 and 4:4:4:3:3 respectively. All of the behaviours moved up the rating scale by two points, except for participation, which moved up by a point. This means that the peer tutoring strategy has remarkably aided in improving students desired behaviours.

## **RESEARCH QUESTION 1**

### **Summary**

The four data instruments that were used yielded many insights about students' perceptions of the peer tutoring strategy. Most participants believed that the peer tutoring strategy was quite beneficial to them and preferred peer tutoring rather than individual work, as they believed it was more important. Students like the peer tutoring assistance in understanding concepts, developing teamwork skills, and motivating them in a fun and interactive way. However they dislike that it can be misleading, cause conflict between peers, and encourage excessive talking. Some students are also not intrapersonally intelligent — they work better by themselves. Students enjoy the peer tutoring strategy and would recommend it in other classes.

### **Conclusion**

Findings from this study show that the respondents have a positive perception about peer tutoring in the classroom. After the intervention, students perceived the strategy as beneficial to them and embraced it. The findings of students' positive perception of the peer tutoring strategy is also supported by Solomon & Crowe (2001).

## **RESEARCH QUESTION 2**

### **Summary**

Three data collection instruments were used for this question and garnered pertinent information. The social benefits of the peer tutoring strategy are that it strengthens socially acceptable behaviours, develops leadership skills, increases academic performance, motivates students in developing higher self-esteem, develops collaborative skills and it serves as a means of influencing peers. There are a few disadvantages — for example, personal conflicts and misleading information may be disseminated. Hence, close teacher supervision should be present to ensure that the strategy is used successfully.

### **Conclusion**

It can be concluded that the social benefits of peer tutoring are immense. There are drawbacks, however, which can be reduced once the strategy is properly implemented and managed throughout. Findings from Grubbs & Boes (2009) support the benefits found in this study.

## **RESEARCH QUESTION 3**

### **Summary**

Findings from this research show that some ways to enhance students' behaviour through the use of peer tutoring in the classroom are by:

- making the students aware of the rationale for the peer tutoring strategy
- ensuring that the strategy is coupled with a good management system

- constantly reminding students of how they are expected to behave by: reinforcing positive behaviours, monitoring the progress of behaviours, supervising each group of peers closely, incorporating rewards, and commending students for acceptable behaviours.

If these are done, then students' interest, cooperation, participation, focus and respect will increase.

## Conclusion

It can be concluded that Peer Tutoring has had a positive effect on students' behaviour in this grade 10 Principles of Accounts class. Once the Peer Tutoring Strategy is properly implemented and managed, then students will display improved behaviours.

## RECOMMENDATIONS

After analyzing the findings of the study, recommendations are given which include key stakeholders of the school. The researcher recommends that:

1. Teachers use the peer tutoring strategy to enhance students' behaviours.
2. Additional research should be done in Principles of Accounts classes and other subject areas on the effects of enhancing students' behaviours and academic performance using peer tutoring.
3. Workshops and seminars should be held with administrators, parents, teachers, students and other persons who are integral to the school's functioning.
4. A peer tutoring programme should be adopted by the Business Department of the school, setting measurable and attainable objectives for the peer tutoring programme.
5. Procedures should be established for selecting and matching tutors and tutees. Examples of tutee selection criteria include test scores and teacher judgment. Tutors may be screened for desired attitudes and/or levels of academic competence.
6. Tutors should be given basic training to accompany carefully structured materials, as in the Companion Reading Programme, or extensive training that enables them to make more independent decisions. Extensive training is desirable when tutor progress is the main objective.

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# Educators' Understandings of Education for Sustainable Development in the Caribbean: Learning from the Regional Literature

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## ABSTRACT

Education for Sustainable Development (ESD) gained much traction globally during the Decade of ESD (2005-2014) and is positioned to make further strides through the Global Action Programme on ESD, meant to succeed the Decade. ESD has been promulgated within the Caribbean, but the concept is still relatively new. This inquiry draws on the regional ESD literature to describe and synthesise educators' understandings of ESD in the region, explore how these perceptions relate to global ESD frameworks, and share priorities for the professional development of educators. It focuses on ESD and related areas, such as environmental education. Results showed that educators' understandings mirrored global conceptualisations of ESD as an action-oriented, participatory, and transformative process that necessitates engagement with all dimensions of sustainability and facilitates the development of awareness, values, and skills. Priorities for professional development include further integration of ESD into capacity-building for in-service teachers and fostering participatory action-based research in ESD.

**Keywords:** education for sustainable development, environmental education, teacher education, Caribbean

## INTRODUCTION

For the countries of the insular and continental Caribbean region, sustainable development — a tripartite development model which emphasises social concerns (human rights, gender equality), economic issues (poverty reduction, corporate responsibility), and environmental dimensions (biodiversity, climate change) (UNESCO, 2009b) — is critical, given the particular geographical and socio-economic vulnerabilities of these nations. These include a dependency on limited natural resources, small domestic markets, limited economic diversification, and vulnerability to natural disasters (ECLAC, 2010; UN, 1994). Climate change and its associated sea-level rise will heighten these vulnerabilities given the forecasts of, for instance, increased frequencies and intensities of natural disasters in the region, and exacerbated flood events and coastal erosion.

The economies of Caribbean countries are based on sectors such as tourism, agriculture, and mining, making them highly natural resource dependent. Unsustainable exploitation of these resources, however, results in various negative effects on the physical environment, including pollution of land, water, and air, and destruction of ecosystems. Societal challenges such as rising rates of crime and violence (Le Franc et al.; Muturi & Donald, 2006; UNDP, 2012) and high rates of HIV infection (Jones, Modeste, Hopp Marshak, & Fox, 2013) also negatively impair development. Consequently, education becomes a

critical foundation for a sustainable development trajectory, as it can deepen awareness and knowledge, develop values and skills, and facilitate action.

Education for Sustainable Development (ESD) gained much traction globally during the recently concluded Decade of Education for Sustainable Development (DESD) (2005-2014) led by UNESCO and is positioned to make further strides through the Global Action Programme (GAP) on ESD, meant to succeed the Decade. Within the Caribbean, ESD too has been promoted, however, some would argue that the concept is still relatively new (Down, 2006) and is also contested (Blum, 2008). Therein lies in part the significance of this investigation, as engagement with educators' understandings of ESD is necessary since it is these conceptualisations which form the foundation for ESD practice. Additionally, as educators are central to formal ESD at all levels, this examination is significant for informing teacher education programmes within teachers' colleges and universities.

This inquiry, therefore, aims to draw on the regional literature on ESD, as well as three related areas — Environmental Education (EE), Citizenship Education, and Peace Education. The rationale for this is two-fold based, firstly, on ESD's relationship with other 'adjectival' educations, including peace education, global education, development education, AIDS education, citizenship education, intercultural education, health education, and, of course, EE (UNESCO, 2009b) and, secondly, because ESD is known by various nomenclature in the region. The purpose is to describe and synthesise educators' understandings of ESD in the region, that is, lecturers and teachers (pre- and in-service). In doing so, the following questions are centralised:

1. How do educators conceptualise these educational orientations?
2. In what ways do these understandings and practices mirror the global ESD framework and/or extend it? and
3. What recommendations do these educators offer with respect to the integration of these educational orientations into teaching practices?

To contextualise the discussion, the paper begins by offering a summary of ESD globally, with particular attention to the UNESCO conceptualisations of ESD, as well as its articulation in international frameworks such as *Agenda 21* and the *Earth Charter*. It then presents a brief overview of ESD in the Caribbean. Thereafter, it will outline the method utilised to undertake the inquiry, followed by a substantive focus on the presentation of the main findings. I end by offering some thoughts on priorities for professional development for educators in the region.

## THE GLOBAL FRAMEWORK FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

### ESD on the Global Agenda

Notwithstanding its early origins in movements such as nature study and outdoor education, EE emerged on the global agenda at the 1972 UN Conference on the Human Environment. Since then, EE's role in fostering the attitudinal and behavioural changes necessary to redefine humankind's relationship with nature has been recognised. Twenty years later, the 1992 UN Conference on Environment and Development (UNCED) resulted in a global framework for sustainable development, known as *Agenda 21*, which

outlined, amongst other areas, sustainable development goals and priorities, roles for stakeholder groups, and implementation mechanisms. Importantly, Chapter 36 of *Agenda 21* highlights education's role in inculcating awareness, values, attitudes, skills and behaviour for sustainable development.

During the 2002 World Summit on Sustainable Development (WSSD), the DESD was proposed, which aimed at engaging all stakeholder groups in its implementation at all levels. In 2009, the objectives outlined in *Agenda 21* were re-emphasised during the DESD conference held in Bonn, Germany. The *Bonn Declaration* recommended steps to be taken at the policy and practice levels and augmented UNESCO's role as the lead agency for the Decade (UNESCO, 2009a). Issues such as climate change, disaster risk reduction and biodiversity were prioritised by UNESCO as critical themes for the second half of the Decade.

Several global forums and agreements have since promoted ESD, including the 2012 UN Conference on Sustainable Development, the *Muscat Agreement* (Target 5) and the Sustainable Development Goals (Target 4.7) recently adopted by the international community. The GAP on ESD aims to further position ESD on the international community's agenda. Additionally, Article 6 of the *UN Framework Convention on Climate Change*, Article 13 of the *UN Convention on Biological Diversity* and Priority Action Area Three of the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* underscore the significance of public education and awareness.

## Agenda 21

As the global plan of action for sustainable development, *Agenda 21* speaks to the role of education. Chapter 36 of *Agenda 21* has formulated ESD as follows:

“Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues...Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making” (UNCED, 1992).

Based on this conceptualisation, ESD transcends knowledge acquisition and moves toward a values, skills, and action orientation as well.

Following on from their definition, *Agenda 21* identifies four goals of ESD: the promotion and improvement of the quality of education; the reorientation of curricula from pre-school to university levels; the raising of public awareness of the sustainable development concept; and the training of the workforce to facilitate the adoption of sustainable modes of production and consumption (UNCED, 1992).

## UNESCO

As the lead agency promoting ESD globally, UNESCO has laid much groundwork for ESD. UNESCO offers that “ESD is fundamentally about values, with respect at the centre: respect for others, including those of present and future generations, for difference and diversity, for the environment, for the resources of the planet we inhabit” (2006). UNESCO also shares that ESD has been defined as “a learning process (or approach to teaching) based on the ideas and principles that underlie sustainability and is concerned

with all levels and types of education. ESD supports five fundamental types of learning to promote quality education and foster sustainable human development — learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society” (UNESCO, 2009b, p. 26). Whilst these definitions offer useful overarching conceptualisations of ESD, it should be noted that internationally, there are various definitions and emphases in the concept (UNESCO, 2009b). Despite these range of interpretations, several commonalities exist, including the usage of terms such as those in Box 1.

| <b>BOX 1. CONCEPTS COMMON TO VARIOUS ESD DEFINITIONS</b>   |
|--|
| <ul style="list-style-type: none"> <li>• Creation of awareness</li> <li>• Local and global vision</li> <li>• Responsibility</li> <li>• Learning to change</li> <li>• Participation</li> <li>• Lifelong learning</li> <li>• Critical thinking</li> <li>• Systemic approach and understanding complexity</li> <li>• Decision-making</li> <li>• Inter-disciplinarity</li> <li>• Problem-solving</li> <li>• Satisfying the needs of the present without compromising future generations</li> </ul> <p><i>Source: UNESCO, 2009b</i></p> |

Further to this, ESD has certain defining characteristics (see Box 2):

UNESCO (2014, p. 11-12) also highlights several key dimensions of ESD, including its learning content; pedagogy and learning environments; learning outcomes; and societal transformation (see Box 3).

Based on UNESCO’s work, several key elements of ESD are centralised with respect to knowledge content and awareness (issues such as climate change, biodiversity, various dimensions of sustainable development), perspectives (futures-oriented, local and global), skills (for example, critical-thinking, problem-solving), approach (multi- and inter-disciplinary), and the role of education (transformative, change agent).

### **The Earth Charter**

Launched in 2000, the *Earth Charter* is an international declaration of shared values for building a sustainable global society “founded on respect for nature, universal human rights, economic justice, and

a culture of peace”. The *Charter’s* Preamble emphasises that the Earth is our home, presents a synopsis of the global situation and the challenges ahead, and underscores humankind’s universal responsibility as global citizens to protect the well-being of present and future generations as well as the living world. It then moves on to outline 16 interdependent principles focused around four main areas: respect and care for the community of life, ecological integrity, social and economic justice, and democracy, nonviolence, and peace.

**BOX 2. ESSENTIAL CHARACTERISTICS OF ESD**

- Is based on the principles and values that underlie sustainable development;
- Deals with the well-being of all three realms of sustainability — environment, society and economy;
- Promotes life-long learning;
- Is locally relevant and culturally appropriate;
- Is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences;
- Engages formal, non-formal and informal education;
- Accommodates the evolving nature of the concept of sustainability;
- Addresses content, taking into account context, global issues and local priorities;
- Builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, adaptable workforce and quality of life;
- Is interdisciplinary: no one discipline can claim ESD for its own, but all disciplines can contribute to ESD; and
- Uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills.

*Source: UNESCO, 2005, p. 30-31*

Emerging from *Agenda 21*, the *Earth Charter*, and UNESCO’s definitions and synthesis of viewpoints, critical elements such as an emphasis on awareness, skills, attitudes, values, and actions; values such as respect and justice, and global and futures perspectives are foregrounded.

## EDUCATION FOR SUSTAINABLE DEVELOPMENT IN THE CARIBBEAN

Whilst the terminology of ESD is fairly new to the Caribbean, EE has a long-established history in the region fostered through countries’ participation in international forums on the environment, as well as

sub-regional and national workshops on EE which focused on areas such as awareness raising of policy-makers, curricula analysis and development, the development of teaching materials, and non-formal EE. Importantly, the significance of EE was also recognised at the 1994 UN Conference on Small Island Developing States held in Barbados (UN, 1994).

### BOX 3. KEY DIMENSIONS OF ESD

- **Learning Content.** Integration of critical issues such as climate change, disaster risk reduction, sustainable consumption and production into the curriculum.
- **Pedagogy and Learning Outcomes.** The design of teaching and learning in an interactive, learner-centred way that enables exploratory, action-oriented and transformative learning. Rethinking learning environments (physical, virtual, online) to inspire learners to act for sustainability.
- **Learning Outcomes.** Stimulating and promoting core competencies such as critical and systemic thinking, collaborative decision-making, and taking responsibility for present and future generations.
- **Societal Transformation.** Empowering learners of all ages and all education settings to transform themselves and the societies in which they live, through, for instance, the transition to green economies and societies and the transition to global citizens.

Since becoming prominent on the global agenda, ESD has underpinned a number of regional EE initiatives (e.g., Bedasse, 2002; Down & Nurse, 2007). A number of meetings have been held on ESD, including a consultation amongst Caribbean EE practitioners to develop ESD in the region in 2000; a DESD Monitoring and Evaluation: Processes and Learning for ESD workshop in Jamaica in 2010; and a regional workshop on ESD in Trinidad in 2013. Additionally, a number of regional universities participated in a Mainstreaming Environment and Sustainability in Caribbean Universities (MESCA) Audit in 2010 (UWI & UNEP, 2011).

In an effort to support institutionalisation, EE, ESD, and associated issues such as climate change, disaster risk reduction, HIV/AIDS, and violence prevention, have been included in national environment, development, and education policies and strategies with Guyana's *Education Sector Plan* and Jamaica's *National Education Strategic Plan* as just two examples. Additionally, these issues have been infused into formal curricula at various levels (see, for instance, Bynoe & Simmons, 2014; Collins-Figueroa, Sanguinetti Phillips, Foster-Allen, & Falloon, 2008).

## METHOD

The aim of this inquiry is to describe educators' (lecturers and teachers) understandings of ESD. The intent was not to base this on primary data collection; rather it was to describe these understandings based on the perspectives expressed by academics themselves as well as the views emerging from data

collected by these educators (in instances where data collection was carried out). A desk-based review was undertaken to identify articles which focused on four areas: ESD, EE, Citizenship Education, and Peace Education. To guide the search and selection process of articles, two of the steps identified by Bettany-Saltikov's (2010) discussion of undertaking a systematic review were utilised as a guide. These steps included (1) undertaking a systematic review and (2) selecting the studies for inclusion or exclusion in the review.

### Undertaking a Systematic Review

In undertaking the review, it was decided to restrict the scope of the search to peer-reviewed journal articles — both articles reporting research on teachers/teacher education, as well as commentaries/critical essays relevant to teachers and teacher education. Whilst it is recognised that not all research is published, the study was focused in this way for this phase, with the intention that a wider search could follow which focused on books and book chapters, conference proceedings, theses, and case studies, as well as on other educational orientations such as HIV/AIDS education.

With this scope in mind, the following databases and search engines were utilised: EBSCO, JSTOR, ERIC, and Google Scholar. Additionally, regional education journals such as the *Institute of Education Publication Series*, *Caribbean Journal of Education*, *Journal of Education and Development in the Caribbean*, *Caribbean Curriculum*, and the *Caribbean Educational Research Journal* were accessed online or manually, including a specially themed issue of the *Caribbean Journal of Education* on Environmental Education and Sustainable Development in the Caribbean and an inaugural issue of *The Caribbean Journal of Education for Sustainable Development* emerging out of the 2010 regional DESD Workshop. Where available, subject and author indices were utilised to aid in the search. Additionally, reference lists of articles which were sourced were also consulted.

In carrying out the database and journal searches, keyword combinations were utilised which included various combinations of the following terms: 'education', 'sustainable development', 'education for sustainable development', 'citizenship', 'environmental education', 'peace education', and 'violence'. The search was geographically focused on the 'Caribbean', and individual countries in the region.

### Selecting the Studies for Inclusion/Exclusion

In selecting the studies, the following criteria were utilised:

- **Date.** Articles published over an approximate 11-year period, from 2005-2015. The rationale for this was to utilise the years of the DESD, a period of increased promotion of ESD. Given the nature of academic publishing, the year 2015 was added, as articles submitted in 2014 might not have been published until the year 2015.
- **Geographical Focus.** Research articles or commentaries/critical essays focused on the Caribbean. This included the countries of the region's three main island groupings — the Greater Antilles, the Lesser Antilles, and the islands of the Bahamas and Turks and Caicos archipelagos — as well as coastal Belize and the Guianas (Potter, Barker, Conway, & Klak, 2004).
- **Target Population(s).** Research articles and commentaries/critical essays which were entirely or partially focused on teachers (pre-service and/or in-service) and University lecturers.

- **Educational Orientation.** Articles with a focus on ESD, EE, Citizenship Education, and Peace Education.

Based on the criteria outlined above (and based on accessibility of articles), sixteen articles out of those reviewed were selected for inclusion in the study. Whilst a seemingly small number, deep insight emerged from this literature. The studies covered a range of issues including: experiences of infusing ESD into curricula/courses; development of ESD curricula; mainstreaming ESD in higher education; pre-service teachers' views of sustainable development and related concepts; challenges of ESD for teacher education; and violence in schools. Of these, the majority of the articles — 13 — were focused on Jamaica, whilst one was focused on Guyana and two on Suriname (see Table 1). Eleven of these focused on ESD, two on EE (linked with ESD and Climate Change Education), two indirectly focused on Peace Education in their discussion of school violence, and one on Environmental Education for Sustainable Development (EESD) (see Table 2). No articles on citizenship education which fit the criteria were found utilising the search terms indicated.

| Country            | Guyana | Jamaica | Suriname |
|--------------------|--------|---------|----------|
| Number of Articles | 1      | 13      | 2        |

| Educational Orientation | ESD | EE                        | Peace Education (Violence was Primary Focus) | EESD | Citizenship Education |
|-------------------------|-----|---------------------------|--|------|-----------------------|
| Number of Articles      | 11  | 2 (EE & ESD)<br>CCE as EE | 2  | 1    | 0                     |

## FINDINGS

The information shared below is based on the views articulated (directly and indirectly) by the academics themselves as well as views of teachers (pre- and in-service) that were garnered by the researchers, where these were sought or emerged as part of the studies.

### Conceptualisation of Educational Orientations

With respect to how educators conceptualised the main educational orientations, the following was found:

#### *Education for Sustainable Development*

Down and Morgan (2005) explore various collaborative models to identify possible challenges and mechanisms for addressing these in order to inform a collaborative effort involving UNESCO, a teachers' college, and a university's Education department to infuse ESD into Language Arts education. In infusing

sustainable development content into the literature course, the intent was to expose students to issues of sustainable development in relation to the environment, the economy, and the society, in keeping with the tripartite focus of sustainable development. Additionally, issues pertaining to values, ethics, human rights, and equity were also centralised. Importantly, the authors also spoke to the need to enhance students' understandings of complex issues, facilitate a global perspective on sustainability issues, and emphasise participatory and collaborative learning. Education as an agent of change was highlighted.

Down examines various issues surrounding ESD in her work on mainstreaming ESD in higher education (2006); reorienting teacher education to address sustainability (Down & Nurse, 2007), integrating ESD in computer and literature courses (Down 2006; 2008); learning with and in community (Down 2009; 2010; 2011b); and beginning teachers as change agents (Down 2011a). In her discussions, Down refers to UNESCO's work on ESD, the DESD, and international documents which speak to ESD and sustainable development such as *Our Common Future*, *Agenda 21*, the *Bonn Declaration*, and the Millennium Development Goals. The conceptualisation of ESD which underpins her (and her co-authors') work is a concept which:

- Encompasses societal, economic, and environmental concerns, with cultural concerns underlying these;
- Is multidisciplinary;
- Is locally and culturally relevant, addressing both local and global issues;
- Centralises values, particularly that of respect — respect for others, present and future generations, difference and diversity, the environment, the resources of the planet we inhabit;
- Builds respect, justice, and responsibility;
- Necessitates awareness and understanding alongside action;
- Engages students in a transformative process which changes themselves, their society, and world; enhances students' potential to be change agents;
- Facilitates students' engagement with community;
- Enhances learning to know, live together, do, and be; and
- Views education itself as a change/transformative agent.

Importantly, Down highlights elements of ESD that she feels should be given more emphasis, two of which are particularly notable. Firstly, she proposes that being a moral person is central to the concept and the process (Down 2011a). The connection between teachers being change agents and moral persons is voiced by the prospective teachers at the focus of her study who “assert that to transform one's society requires a foundation of morals” (Down, 2011a, p. 49). Secondly, Down speaks of fostering teachers' emotional connections to others and to the Earth as emotions compel persons to act (Down 2008).

Collins-Figueroa (2012) shares experiences of a project aimed at integrating biodiversity education into early childhood and primary teacher education programmes in Jamaica. In her discussion, Collins-Figueroa cites sustainable development as encompassing social, economic, ecological, and cultural issues. She makes reference to the DESD and offers a national (Jamaican) understanding of ESD which includes collaboration and dialogue, a systemic approach, and active and participatory learning. Additionally, she highlights the necessity for ESD to be transformative, and to enhance critical reflection, futures thinking,

and systemic thinking skills, as well as values clarification.

Veldhuizen-Doelahasori (2011) focuses on the development of a Master's Degree programme in Education and Research for Sustainable Development at a university in Suriname. Most of the discussion centres on the process, however, of note is the reference to the launch of the DESD as the catalyst for the development of the programme and the indication that curricula development was based on four cardinal principles of ESD: respect for others (including current and future generations), respect for differences and diversity, respect for the environment, and respect for natural resources. Ori and Blanchard (2015) examine the goals, structure, and function of teacher education in Suriname, highlighting the challenges of ESD for teacher education and ways of responding to those challenges. In doing so, they make reference to the DESD and the Brundtland Commission's definition of development, and highlight the need for ESD to focus on environmental, economic, and socio-cultural perspectives. They also highlight the need to prepare teachers for interactive learning processes and to develop 21<sup>st</sup> century skills such as problem-solving skills, and scientific, technological, and social literacy. Importantly, they call attention to the need for education itself to be viewed as a change agent.

### ***Environmental Education***

Lee (2008) focuses on EE and ESD in her exploration of recycling as a means to source teaching and learning materials for mathematics. Lee makes reference to Jamaica's National Environmental Education Action Plan for Sustainable Development which envisions a nation in which society, economy, and the environment are harmonised. In discussing the Recycling and Resource Centre for Mathematics, Lee indicates that its purpose is to promote environmental awareness, facilitate teamwork and collaboration amongst teachers, and encourage the participation of community members in recycling. The elements of awareness, collaboration, and participation are all part of the global ESD discourse. Additionally, by infusing EE into the teaching of mathematics, Lee recognises the multidisciplinary nature of ESD.

In their exploration of Climate Change Education (CCE) at the primary school level in Guyana, Bynoe and Simmons (2014) undertake a curricula audit and a content analysis of policy documents, and also administer questionnaires to gather teachers' views on climate change infusion, needs, concerns, and gaps. The authors equate CCE with EE, stating that education that engenders an awareness of and concern about climate change is EE. For these authors, a focus on climate change, particularly given the low-lying coastal area of Guyana, is necessary and mirrors the call for the integration of climate change into curricula given the issue of climate change as a key theme for the second half of the DESD. Additionally, as is the case in the articulation of the global ESD orientation, the authors call for the development of critical-thinking and problem-solving skills in order for students to become global citizens, and field-based education that moves students beyond the classroom.

### ***Environmental Education for Sustainable Development***

Ferguson (2008) focused on Jamaica's formal EE system, examining national and individual constructions of sustainable development, and the global construction of sustainable development, to explore whether they are competing or complementing discourses. As part of her research, she sought to ascertain pre-service teachers' conceptions of nature, the environment, and sustainable development. Her findings noted that elements such as a global consciousness, socio-political issues, and emotional connections

were absent from pre-service teachers' conceptualisations. Ferguson recommended attending to these issues in teacher education curricula and, by so doing, makes linkages with the global conceptions of ESD.

### ***Peace Education***

In the two articles which addressed violence, the issue was clearly conceptualised as a societal problem, though not directly discussed with reference to sustainable development. McPherson-Kerr, Down, and Lambert (2006) indirectly speak to it through one of their main research findings, which highlights a linkage between a positive physical environment and a positive social environment. In highlighting this connection, and systemic thinking when they underscore the systemic nature of violence — an issue with many problems and effects that transcend the school walls — they are indirectly making reference to sustainability issues.

Both articles made reference to peace education. Anderson (2004/5) made reference to peace education in her discussion of the Peace and Love in Schools intervention in Jamaica and recommends that teacher training make provision for the development of social, problem-solving, and conflict resolution skills. McPherson-Kerr, Down, and Lambert (2006) also list amongst their recommendations that violence in schools or peace education should become compulsory components in teacher education curricula.

To summarise, all educators presented perspectives of ESD and related adjectival educations which, explicitly or implicitly, reflected the global ESD and ESD-related orientations.

### ***Extent to which Conceptualisations Mirrored Global Discourse***

As stated in the authors' discussions, it is clear that their conceptualisations of the theory and practice of ESD and the other adjectival educations reflect the global articulation of the orientations. Table 3 offers a synthesis of commonalities in these viewpoints.

Educators also voiced ideas that are embodied in the *Earth Charter* principles, including the following:

- Respect Earth and life in all its diversity;
- Care for the community of life with understanding, compassion, and love;
- Build democratic societies that are just, participatory, sustainable, and peaceful;
- Secure Earth's bounty and beauty for present and future generations;
- Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life;
- Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life; and
- Promote a culture of tolerance, nonviolence, and peace.

| <b>TABLE 3. ELEMENTS OF GLOBAL ESD CONCEPT</b> |  |                                      |   |
|--|--|--------------------------------------|---|
|  | <b>ESD</b>   | <b>EE</b>                            | <b>Peace Education</b>  |
| <b>Learning Content</b>                        | Values and ethics<br>Global perspective<br>Futures perspective<br>Environment, economy, society (and culture)<br>Relations of equity<br>Climate change, pollution, waste management, deforestation, biodiversity, violence, HIV/AIDS | Climate change                       | Connection between physical and social environment<br>Values  |
| <b>Pedagogy and Learning Environments</b>      | Participatory learning<br>Collaborative learning   | Teamwork<br>Collaboration            |   |
| <b>Learning Outcomes</b>                       | Systemic thinking  | Critical thinking<br>Problem-solving | Systemic thinking<br>Critical thinking<br>Conflict resolution |
| <b>Societal Transformation</b>                 | Students playing a part in transforming their world<br>Creating a just and sustainable future  | Global environmental citizens        |   |
| <b>Key Terms used in ESD Definitions</b>       | Participation<br>Understanding complexity<br>Multidisciplinarity; Interdisciplinarity<br>Local and global vision<br>Creation of awareness<br>Lifelong learning<br>Current and future generations                                     | Awareness                            | Problem-solving<br>Systemic thinking<br>Critical thinking     |

### RECOMMENDATIONS FOR INTEGRATING ESD INTO TEACHER EDUCATION

Emanating from the foregoing research and essays are recommendations to enhance the integration of ESD into practice. These centre on the following main areas:

#### Content and Perspectives

- Include socio-political elements such as equity and social justice.
- Engage with more global perspectives.
- Facilitate a futures perspective.

### **Educational Orientations**

- Development of peace education (Anderson, 2004/5; McPherson-Kerr, Down, & Lambert, 2006).

### **Skills Development**

- Teacher training should include social, problem-solving, and conflict resolution skills (Anderson, 2004/5; McPherson-Kerr, Down, & Lambert, 2006).

### **Values, Attitudes, and Emotions**

- Inclusion of values such as respect.
- Encouragement of emotional connections with the Earth and with others (Down, 2008; Ferguson, 2008).

### **Approach**

- Community-oriented in order that students can (a) contribute to ‘real-life’ problem-solving; (b) contribute to transforming their society; and (c) promote lifelong learning as ‘students’ from the community learn alongside University students (Down, 2008).
- Multi- and cross-disciplinary, infused into various subject areas (Collins-Figueroa, 2012; Down, 2008; Lee, 2008).
- Whole-institution, so that ESD is embedded (Collins-Figueroa, 2012; Down, 2010).
- Constructivist in nature to allow students to construct their own meanings, engage in dialogue, critically reflect on ideas, and interrogate knowledge (Down, 2008).

## **PROFESSIONAL DEVELOPMENT OF EDUCATORS**

The results from the inquiry are significant with respect to planning for the professional development of educators in the Caribbean. In particular, three priority areas will be highlighted, namely, the integration of ESD into in-service teacher education programmes, the organisation of ESD short courses, seminars, and workshops for educators, and the fostering of participatory action-based research in ESD. These areas are in line with recommendations emanating from the GAP.

A number of countries in the region have worked extensively to integrate ESD into pre-service training, reviewing and revising curricula in teachers’ colleges. In Jamaica, examples of this include the requirement that students at teachers’ colleges pursue a course on environment and sustainable development as part of their programme, the infusion of ESD into a Caribbean Literature course at a teachers’ college (Down, 2006), and the implementation of a project aimed at integrating biodiversity education into early childhood and primary teacher education programmes (Collins-Figueroa, 2012). In Guyana, the nation’s Environmental Protection Agency has worked with the Cyril Potter College of Education to infuse EE into teacher curricula. These are just some illustrations.

Accompanying this preparation of pre-service teachers is the need to integrate ESD into in-service teacher education programmes. At The University of the West Indies (UWI) Mona Campus in Jamaica, for instance, ESD topics such as sustainable development and climate change have been integrated

into courses such as the Literature and Education for Sustainable Development Master's level course in the School of Education. Postgraduate courses on EE and citizenship are also offered by the School of Education. Further integration is needed, perhaps through the development of a postgraduate programme in ESD. Whilst a number of advanced degree programmes already exist or are currently being developed regionally which focus on, for instance, natural resources management, environmental management, and sustainable development, there is no existing postgraduate programme specifically focused on ESD. Importantly, a Master of Education degree in Education for Sustainable Development, Global Citizenship, and Peace is currently being developed by the School of Education at the UWI Mona Campus which draws on these findings and seeks to include courses, topics and issues such as climate change, peace and conflict resolution, values and citizenship, and to develop students' reflection on various perspectives (e.g., global/local, futures perspectives). Additionally, the programme seeks to promote students' engagement in action and with community by incorporating community and school projects and service-learning into its structure.

A second area of focus pertains to the development and hosting of short courses, seminars, and workshops for educators at all levels on ESD topics and ways of infusing them into course content. For instance, climate change, as arguably the most critical global environmental issue facing humanity, should be introduced to educators alongside methodologies to infuse climate change into course content using innovative strategies that would not 'overburden' educators at all levels who are already stressed with the delivery of core content. In this regard, UNESCO's reservoir of materials and case studies, along with materials developed regionally, could be drawn upon to facilitate educators' capacities. Workshops could focus on various areas such as content (issues such as biodiversity, climate change), and teaching and learning strategies (e.g., problem-based learning, experiential learning, service learning).

A third area is research, particularly participatory action-based research in which educators, working with colleagues and/or students, undertake inquiries in ESD-related areas in partnership with community members in order to build research competencies, engage in transformative learning, and promote life-long learning in communities. Educators can be introduced to the theory and practice of action research in order that service learning and transformative learning is facilitated.

## CONCLUSION

Educators at all levels have a critical role to play in ESD as they are positioned to impart knowledge, model values and attitudes, develop skills, and create change within schools and, by extension, the wider society. Understanding how ESD is conceptualised by educators in the region is therefore a critical foundational stage necessary to enhance practice. Additionally, due to the relative newness of the concept to the region as well as its 'contested' nature, exploring perspectives on ESD is a useful exercise.

Based on the preliminary inquiry carried out, educators working in the region view sustainable development, upon which ESD is predicated, as a concept comprised of three main spheres: environment, society, and economy — and, for some, a fourth sphere — that of culture. Additionally, ESD is viewed as a participatory, action-oriented, and transformative process that seeks to transcend the dissemination of sustainability knowledge and move beyond the inculcation of sustainability values, skills, and action. Importantly, ESD is viewed as a multidisciplinary process, drawing on and crossing diverse disciplines. It is also viewed as community-centred, crossing the boundaries of the university and moving into the

community. Generally speaking, these views of ESD mirror the global articulations of the concept. Of significance is the fact that these educators emphasise aspects that are not explicitly stressed in these global articulations, such as the need to engage with individuals' emotions as these create an impetus to act, and for educators to be seen not only as change agents, but as moral change agents.

Professional development planning for educators at all levels must therefore take into consideration these findings from the regional literature as programmes, courses, seminars and workshops are planned, and research is fostered. It is hoped that the foregoing discussion encourages reflection on ESD and its related educational orientations, and that it informs the theory and practice of ESD in the region to make it more relevant and truly transformative.

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# A Case Study in Jamaica's Reform of Teacher Education: Preparing Teachers for the 21st Century Classroom

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## ABSTRACT

Educational researchers worldwide identify teacher education as foundational to learners' achievement. Jamaica's Ministry of Education has worked for decades to strengthen teacher education.

With Jamaica's decision to increase teaching entry qualifications to the Bachelor's level, the Jamaica Tertiary Education Commission (J-TEC), commissioned a study of teachers' colleges to propose improvements in their quality assurance frameworks to enable them to offer B. Ed. programmes. The study discovered little difference from previous analyses of the colleges' strengths and challenges; however, Jamaica needs a viable strategy and action plan to reform teacher education for the 21st century.

Accordingly, J-TEC established a Technical Working Group (TWG) to drive the modernisation of the teacher education system. The TWG, supported by an experienced strategic planning consultant, is crafting a Strategic Action Plan in 2016 to reposition Jamaica's teacher education system for the 21st century.

This paper chronicles plans for reforming Jamaica's teacher education system.

**Keywords:** teachers' colleges, planning, educational reform of educators

## INTRODUCTION

This case study of teacher education reform is remarkable for its approach. Rather than beginning by exploring all the aspects that need to be "fixed" to make teacher education "fit for purpose" for the 21st century, the drafting of this strategic plan focused on the positives. The case study doesn't reveal many unique findings needing change, but it uses participatory strategies and appreciative inquiry to identify those changes to the existing system. It is the *process* of developing the strategic plan that is worthy of note in this case study.

## BACKGROUND TO TEACHER EDUCATION REFORM IN JAMAICA

The reform of teacher education has become a "hardy perennial" on the public policy agenda, driven historically by the national development imperative and closely aligned to the relevance and quality of the education system. It is a popular perception that, "if the students have not learned, then the teacher has not taught." Teacher quality has, therefore, been isolated as a critical input in national development; by extension, poor teacher preparation will lead to social stagnation and social dysfunction.

This perception seems particularly pertinent to Jamaica. At each historical juncture, there has been a (non-scientific) correlation drawn between growth in GDP, per capita income etc., and the performance of the education system. The latter has usually been equated with the knowledge and pedagogic competence of the teacher.

History is a guide in this regard. The emergence of local teacher education coincided with emancipation. Education was considered an important component of the civilising mission of the post-slavery society. Between 1835 and 1885, four of Jamaica's teachers colleges were founded: Mico College (1835), the oldest teacher training institution in the Western Hemisphere and, indeed, one of the oldest in the world; Bethlehem Moravian College (1861); Shortwood (1885) and St. Joseph's College (1897).

In the early years, these colleges were characterised by debates that continue to be the themes of teacher education: the appropriate balance between content and pedagogy; designing teacher preparation that models classroom behaviour; the tension between time dedicated to academic preparation and that dedicated to in-school practicum or internship; elevation of teaching to a level equivalent to professions like law and medicine.

The reform of teacher education was always aligned with systemic curricula reform. So, in 1966, the New Deal In Education was a preparatory platform for an independent nation. Integral to this was the target of annual output of trained teachers from 350-1000 over a three-year period. Subsequent system reform programmes like the Development of the Secondary Education Report (1983), the Basic Skills Training Project, The Reform of Secondary Education (ROSE) and the Centres for Excellence in Teacher Training (CETT) programme all had similar components.

Indeed, the rationale for establishing the original Educational Broadcasting Service and broadcast educational television in 1962 was based on the belief that the inadequacy of classroom teachers in number, preparation and skill could be addressed through the live broadcast of lessons across Jamaica from a studio in Kingston (George, 1981).<sup>1</sup> The EBS television broadcasts were to serve a dual purpose: demonstrate how to teach to untrained teachers watching the lessons, and simultaneously teach learners important model lessons in Mathematics and English.

This case study considers the KPMG study in the late 1990s commissioned from the work of Sir Philip Sherlock to have begun the current teacher education reform process. KPMG's mandate was to explore whether so many public teachers' colleges were required in such a small country to serve the needs of the education system, and, if economies could be effected without weakening the fabric of teacher education, make recommendations on the reform of the system. Building on the KPMG study, which recommended the rationalisation of the teachers' colleges, a consulting team examined the efficiency and cost effectiveness of the government-funded teachers' colleges, and made recommendations to strengthen and improve their efficiency.

The USAID-funded hemispheric literacy-focused Centres for Excellence in Teacher Training (CETT) focused on in-service training to improve pedagogical skills for early primary teachers, especially in rural and disadvantaged areas of Jamaica (2002-06). CETT's paradigm shift to learner-centred teaching strategies in literacy instruction pointed the way to teacher education reform for the 21st century.

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1. Educational radio had been successfully used in Jamaica since the 1950s.

In *A Transformed Education System* (Davies, 2004), the government-appointed Task Force on Educational Reform identified several issues that impact teaching and teacher education: the need to license teachers, upgrade their training to the Bachelor's level, improve their remuneration, and involve them in ongoing professional development. The major recommendation that the baccalaureate degree be the minimum requirement for entry into the teaching profession required teachers' colleges to retrofit to be able to deliver this degree, even though only three of them had degree granting status. Therefore, to implement the recommendation, it was decided to use the University of the West Indies (UWI) as the granting institution for such degrees.

The *Vision 2030* Jamaica Education Sector Plan emphasises the importance of education to a country's global competitiveness and for enhancing its economic development and future growth potential. The quality of the teacher education system, therefore, continues to be perceived as essential to Jamaica's development.

Responding to the Task Force Report and its recommendations to strengthen education, Jamaica's MOE adopted a *National Education Strategic Plan 2011-20* (NESP) that calls for holistic learner-centred, competency-based curricula that allow alternative pathways to success and make connections with the real world — including workplace settings. In response to the NESP, the Ministry is converting its Grades 1-9 curriculum to a standards based curriculum, the National Standards Curriculum (NSC), which infuses the traditional academic curriculum with elements of technical and vocational education to break down the traditional silos between academic and technical educational streams and nurture learners who are critical thinkers, problem solvers, and collaborative learners. The NSC responds positively to recent curriculum development and instructional strategies. It has taken as its foundation its predecessors (the Revised Primary Curriculum and the Reform of Secondary Education curricula), applied current constructivist learner-centred theory and practice<sup>2</sup> and incorporated the strategies of STEM/STEAM in its teaching and learning strategies. The subject-based curricula have been developed by the Ministry's Curriculum Unit and piloted in a sample of schools across the country, and the Grades One, Four and Seven teachers will participate in training workshops in July and August in preparation for the September implementation of the new curricula.

Since the approach of the NSC is so radically different from the traditional transmissive teaching model, it will demand extensive changes in teachers' instructional approaches and in the preparation of pre-service teachers in teacher training programmes.

With this history as the backdrop, the challenge being faced by the sector and the wider society is how to prepare our people for the demands of the 21<sup>st</sup> Century: how do we ensure that those who are responsible for this preparation are themselves appropriately prepared? Accordingly, Jamaica has this initiative for repositioning teacher education.

## **THE CARICOM CONTEXT: PREPARATION OF THE EDUCATION AND HRD STRATEGY FOR THE 21ST CENTURY**

The importance that education and human resource development play in supporting national and

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2. Webb's Depth of Knowledge, Krathwohl's Taxonomy of the Affective Domain, and competency-based learning models underpin the teaching and learning strategies included in the NSC.

economic development in the Caribbean region was formally recognised at the Caribbean Community (CARICOM) Heads of Government meeting in March 2014, when the Council for Human and Social Development (COHSOD) was mandated to establish a CARICOM Commission on Human Resource Development (HRD Commission). The purpose of the Commission is to shape a Regional Education and Human Resource Development 2030 Strategy and Action Plan (Regional HRD Strategy and Action Plan) that will form the basis for member states' converged action. The Regional HRD Strategy and Action Plan is scheduled for completion in early 2017.

This strategy is informed by several other CARICOM initiatives: the CARICOM Draft Framework for Data on Education and Training (2015), the CARICOM Regional TVET Strategy for Workforce Development and Competitiveness (2014), the CARICOM Draft Framework of Generic Teaching Performance Standards and Academic Standards (2013), The CARICOM Strategic Plan for the Community 2015-19, and the CARICOM Regional Digital Development Strategy (2011).

One member of the CARICOM HRD Commission also sits on the Technical Working Group (TWG) for the development of Jamaica's Strategic Plan for teacher education, and the Education Sector Specialist assisting the CARICOM HRD Commission to develop the Regional HRD Strategy 2030 is simultaneously working as the Strategic Planning Specialist assisting the TWG for teacher education reform. The synchronicity of these connections between the regional and national activities means that the work at each level can benefit from and inform the other.

## THE CURRENT STATUS OF TEACHER EDUCATION SYSTEMS IN JAMAICA

In 2016, there were eight public Jamaican institutions designated by the Ministry of Education as teacher training institutions operating collectively under the aegis of the Teachers' Colleges of Jamaica<sup>3</sup> (TCJ) offering teacher education programmes. By operating under the TCJ, these institutions can use a common curriculum framework, which "...avoids the fragmentation that could arise if the colleges operated under separate jurisdictions."<sup>4</sup> There are also three other colleges, one university college and one post secondary institution offering Bachelor's degrees or Post Graduate Diplomas whose programmes are accredited by the University Council of Jamaica (UCJ).<sup>5</sup> Three Jamaican universities offer B. Ed., B.S. or B.Sc. degrees in a variety of educational specialities.

Eight Canadian and American universities offer accredited degrees in education in partnership with Jamaican institutions, and three overseas universities offer UCJ-accredited Master's degrees in education subjects locally (face-to-face) without Jamaican partners. While all of the identified programmes are UCJ accredited, the requirements, systems, and certifications are different.

In total, there are 27 public and private post-secondary, tertiary and higher education institutions offering teacher education programmes at the Post Diploma, undergraduate and graduate levels in Jamaica.

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3. While there have been promises of legislation to legitimise the TCJ, at the time of writing this case study, this legislation has not yet been passed. Accordingly, the TCJ is a voluntary association of teachers' colleges in Jamaica.
  4. Teachers' Colleges of Jamaica (2012), Handbook of Regulations Bachelor of Education. Kingston: Joint Board of Teacher Education, p.1.
  5. Jamaica's internationally-recognised accrediting body is The University Council of Jamaica.

Examination of the programme offerings in these institutions indicates that the teacher education landscape in Jamaica is complicated indeed.

### **The Jamaican teacher education management landscape**

The policy and management framework for teaching and teacher education contains a diversity of institutional actors with varying responsibilities:

- Ministry of Education — oversees and provides government support for public teachers' colleges
- Joint Board of Teacher Education — coordinates the quality assurance of teacher education programmes in the colleges
- Jamaica Teaching Council — carries out regulatory functions for teachers; establishes standards for licensing of teachers
- University Council of Jamaica — external accrediting body; accredits teacher education programmes
- The Jamaica Tertiary Education Commission (J-TEC) — the regulatory and supervisory body for tertiary education in Jamaica
- e-Learning Jamaica Company Limited (e-LJam) — operating under the aegis of the Ministry of Science, Energy and Technology, e-LJam is mandated to implement e-learning projects in schools in collaboration with government entities.

### **The Role of J-TEC**

As the regulatory body for tertiary education, The Jamaica Tertiary Education Commission (J-TEC) is mandated to ensure the provision of quality tertiary education in Jamaica. As the regulatory body for tertiary education, teacher education forms a major aspect of J-TEC's remit. In acknowledging its role, the Commission set out to reform the content and processes of teacher education, ensure the existence of functional quality assurance structures, enhance the profile of teacher education, and create a more efficient and modernised teacher education system.

### **Planning for the reform of teacher education for the 21st century**

#### ***Needs assessment and front end analysis of teachers' colleges***

J-TEC commissioned an analysis of teachers' colleges' quality assurance systems to determine what was needed to strengthen quality assurance in the colleges' programmes. The main objective of the study was to "identify the gaps that exist in respect of a robust quality assurance framework in the colleges that will support their mandate to offer degree programmes as the minimum qualification for Jamaican teachers" (MOE, 2014). The study also examined the structures in place to support the colleges' capability to offer the quality of teacher education that would positively impact student achievement.

Findings from the assessment indicated the need for the institutions to strengthen their quality assurance systems by restructuring internal governance structures. The report also recommended

rationalisation of some programme offerings to improve effectiveness and quality, and identified an absence of policies to guide programme development reviews and revisions.

### ***Study tour of Malaysia***

In May 2015 a delegation from the Ministry of Education, including a representative of J-TEC, undertook a study tour of the Malaysian education system. J-TEC's focus for the tour was Malaysia's teacher education system. Features of the Malaysian system included:

- Malaysia recruits pre-service teachers from the top 30 percent of graduates
- Forty percent of the teacher education curriculum is dedicated to field experience
- All colleges have teaching schools that serve as laboratories for pre-service teachers
- Graduates enter a six-month internship programme after graduation
- Certification depends on successful completion of the internship
- Teacher educators must hold a Master's degree, have classroom teaching experience, and undergo a mandatory induction period upon employment.

### ***Technical Working Group for repositioning teacher education***

Building on the findings of these two initiatives, J-TEC convened a Technical Working Group (TWG) for teacher education reform in August 2015 comprising representatives from all of the stakeholders in teacher education. The goal was to design a strategic action plan to undertake a comprehensive reform of the teacher education system that would bring it in line with the demands of teaching learners for the 21st century.

To achieve their mandate, the TWG formed three sub-committees: teacher education, institutional governance and administrative structure and higher education regulations.

To assist in drafting the strategic plan, the implementation plan and supportive policies to undertake the reform process, J-TEC contracted a Strategic Planning Consultant with extensive experience in teacher education reform to support the TWG. In her contract, the TWG provided an outline of what they believed was necessary to develop the strategic action for the appropriate reform of Jamaica's teacher education system. Certainly, the culture shift implicit in the instructional theory being used in the NSC requires new approaches to the development of pre-service (and, indeed, in-service) teachers, so that they are comfortable with using new teaching and learning strategies to develop graduates who not only have the knowledge that will be examined at the end of the school year, but also have skills and competencies beyond those traditionally required in a test-based system.

While the TWG stipulated the deliverables it wanted from the assignment, the consultant also recommended using a participatory planning process that she has used with great success in other settings. The combination of the consultant's and the TWG's ideas is resulting in very positive progress in the development of the strategic plan, the implementation plan and the policies needed to facilitate the strengthening of teacher education in Jamaica.

## DEVELOPMENT OF A “THINK PIECE” ON TEACHER EDUCATION AND POTENTIAL FOR ITS REFORM:

### OUTCOMES OF THE TWG DISCUSSION

To stimulate “out-of-the-box” thinking, the consultant was charged with developing a “think piece” analysing the changes needed in training teachers so that they can manage a teaching and learning system for the 21st century.

To stimulate the discussion, she asserted that the purpose of the education system across the region is to develop the Ideal Caribbean Citizen<sup>6</sup> and defined the output of the education system based on the standards implicit in Jamaica's *Vision 2030*:

...a competent graduate who can easily find employment that s/he wants that will sustain him/her... is able to achieve personal satisfaction and growth while working in an area that benefits him/herself as an individual and contributes to national development goals.<sup>7</sup>

The “think piece” proposes that teacher training and in service teacher professional development take place in a community-based teacher training centre associated with several practising schools that serve as teaching and learning laboratories. The centre is “...a hive of activity” headed by an educational manager who coordinates learning opportunities for pre-service teachers with teacher educators, practising teachers, the community, parents and employers: “...learning...is not about inert knowledge, but active learning and reflection at all levels.”<sup>8</sup> The educational manager forms deliberate links with the community in which the centre is located; the teacher educator fosters a love for teaching in student teachers by modelling teaching strategies that engage them in a learning community and stimulate creative reflection on the value of the experiences in planning learning for their prospective students. The article advocates for pre-service teachers' active learning and engaging with peers in augmenting learning theory through activity and research. Even activities that “fail” are worthy of reflection for learning.

The article explores six elements critical to the reform of teacher education to meet the needs of the 21st century learner:

- developing the teacher as a professional
- changing the structure and operation of the teachers' college
- upgrading teacher educators and the recruitment of teacher educators
- advocating for the political will to reform teacher education for the 21st century
- rewarding teachers in a reformed teacher education system, and
- the organisation and management of teacher education institutions to enhance the new curriculum and teaching model.

The TWG engaged in a stimulating discussion of the proposals, and agreed that, while not easy, the implementation of the proposed changes would definitely strengthen teacher education. They also agreed

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6. Developed in 1996, the description of the Ideal Caribbean Citizen is still relevant in 2016. See Appendix 1.

7. N. George (2016). “Think Piece: Analysing changes needed in training teachers to structure the education system for the 21st century.” unpublished, p. 1.

8. The model described in the “think piece” actually operates in the Aga Khan University's Institutes for Education Development in Pakistan and Tanzania. See <http://www.akdn.org/our-agencies/aga-khan-university/institutes-education-development-ied>.

that it might be useful to design and implement a pilot of the changes to the teacher education system, inviting one teachers' college to try out the proposed changes over a period of time and document the results. The members agreed that if the pilot worked, the other colleges would be clamouring to join.

## **RESEARCH INTO INTERNATIONAL APPROACHES TO TEACHER EDUCATION REFORM: HIGHLIGHTS AND TWG RESPONSE**

The second activity to inform the reform of Jamaica's teacher education system was to undertake desk research to survey other countries' recent efforts and successes in reforming their teacher education systems. The review included regional activity<sup>9</sup> and a sample of individual countries' (developed and developing) initiatives external to the region in teacher education reform (George, 2016).

Teacher education reform in the Caribbean region has a number of commonalities. All reform initiatives acknowledge that the teacher is central to learner performance; consequently, ensuring the quality and relevance of teacher education systems that are preparing and upgrading teachers (both pre-service preparation and in-service professional development) is critical. All of the reform initiatives agree with the implementation of standards for teaching; hence, the importance of the COHSOD approval of the CARICOM Standards Framework (2013) that underpins the consideration of teaching as a profession.

The educational reform initiatives reviewed for the paper also report the need for developing, upgrading and implementing government policies that govern teacher education. Some of the most frequent areas in which policy recommendations have been drafted include:

- incentivising teacher performance through a sustainable reward system for measurable success that recognises levels of teacher expertise<sup>10</sup>
- involving teachers themselves (pre-service, practising and educational administrators) in the upgrading of the teacher education system
- establishing and obtaining acceptance of standards for measuring teacher performance by educational institutions, governments, parents' and teachers' organisations<sup>11</sup>
- standardising high quality, relevant curriculum to train teachers
- upgrading the entry level to teacher education programmes to undergraduate degree level (Bachelor of Education)
- increasing the level at which the title of graduate teacher is awarded
- upgrading "normal school" institutions to colleges and/or incorporating them into universities
- developing systems that make attainment of a teaching licence a process equivalent to that of gaining entry to other professions

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9. The Organisation of American States (2005). A Harmonised Policy Framework for Teacher Education in the Caribbean (2005); the COHSOD Framework for Action (2008), and the CARICOM Framework of Draft Standards of Practice for the Teaching Profession (2013).

10. The implementation of a Master teacher recognition system is a reward system often mentioned to incentivise teachers. However, implementing a Master teacher system has frequently been blocked by teachers' unions because of the inability of system developers to design an acceptable set of indicators to measure the Master teacher.

11. The CARICOM draft Standards of Practice for the Teaching Profession (2013) adopted by COHSOD have actually been approved for implementation in all Member States.

- requiring the teacher licence renewal every five years for continued recognition and remuneration as a professional teacher
- promoting teaching as a valuable profession with opportunities for career advancement to attract high quality university graduates to teaching
- recognising that teaching is primarily a skills-based occupation by augmenting the teaching practicum in the pre-service curriculum with mandatory successful completion of an induction programme or internship following academic training prior
- developing and implementing a required postgraduate qualification (e.g. Master's in Educational Administration or equivalent) that administrators in schools (principals, vice principals, senior managers) must hold to be appointed as senior school administrators.

Other countries' teacher education reform initiatives contained many of those identified in the Caribbean. Some required a demonstrated role for research, data collection and use to recognise teacher success in the classroom; some establish communities of practice through which experienced teachers can mentor new teachers.

Some countries or states engaged teachers' unions or associations directly in the decision-making about teacher education reform. By doing so, these countries/states/provinces report that there has been less "pushback" concerning increased demands for certification, licensing and professional development, and more acceptance of standards and changes in practice, because the changes had come from the teachers themselves.

Research among graduates conducted in several countries (including selected states in the USA) showed that more than 50 percent of graduating pre-service teachers, new teachers with up to three years of teaching experience and those trained teachers leaving the profession within three years of graduating, complained that they did not have enough opportunity to practise teaching skills during their academic programmes, and felt they had been "thrown in at the deep end" when they first joined the teaching staff of a school. More than 70 percent of graduates surveyed believed that they would have benefited from an induction programme in which they received mentoring during their first year of teaching.<sup>12</sup>

Two studies of teaching graduates who were in federally-funded teacher education programmes intended to increase the number of minority applicants being trained as teachers in selected US states participated in an induction programme as part of their training. The performance of their graduates was tracked for three years after they began teaching; the performance of the students taught by those teachers improved markedly over the results reported by these schools prior to their arrival.

While the induction programme alone cannot account for the improved student performance, given the context of student abandonment reported in other studies, the contribution of the induction programme cannot be discounted.

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12. The percentages quoted are a summary of statistics from several surveys reviewed in the desk research. While they are reflective of the reports in the surveys, they do not match any single survey's findings. However, none of the surveys reported less than 50 percent of respondents disagreement with the idea of an internship or induction year.

One of the growing concerns in the TWG has been how to attract into teaching those high performing students at the secondary level who would normally be attracted to professions like architecture, engineering, medicine and law. One strategy discussed was developing an active public relations campaign to attract some of those high performing high school graduates. The TWG noted the need for this kind of positive public relations campaign targeted to students and parents to be included in the Action Plan for the Strategic Plan.

The Bolivian experience of upgrading and professionalising teaching<sup>13</sup> took ten years to implement, but teaching is now attracting top high school graduates and is being perceived as a legitimate profession. The government engaged the unions and teachers themselves in designing the changes in the system from the “ground up.”

The international review of teacher education, however, revealed that efforts to reform and upgrade teacher education in the English-speaking Caribbean have supported and advanced Jamaican teacher education reform significantly in comparison with some other countries. While there are many good initiatives from which we can learn and take advice, Jamaica is far from having to run fast to catch up.

#### **APPRECIATIVE INQUIRY: RATIONALE, DESCRIPTION, OUTCOMES**

Appreciative Inquiry (AI) is described by one of its developers<sup>14</sup> as “a positive revolution in change.” It is an organisational development and change management strategy that builds on positive experiences, dreams for the future, and positive, creative innovation in designing organisational change. The consultant assisting the TWG to develop the strategic action plan for the reform of teacher education for the 21st century recommended the use of this planning strategy because it is participatory, positive and engaging for all its participants. Besides its positive outlook, AI is most useful for the purpose of strategic planning because of its participatory approaches and community building.

The consultant combines AI and Visualisation in Participatory Programmes (VIPP)<sup>15</sup> to ensure the participatory nature of the workshop.

An AI to develop the strategic plan for the reform of teacher education for the 21st century was convened on May 17-19, 2016. The invited participants included a wide cross section of stakeholder groups involved in teacher education in Jamaica. In addition to the members of the J-TEC TWG, representatives of the teachers’ colleges, the UWI and UTech Schools of Education, the Ministry of Education Tertiary and Core Curriculum Units, the Planning Institute of Jamaica (PIOJ), the Jamaica Teachers’ Association (JTA), the Jamaica Teaching Council (JTC), the University Council of Jamaica (UCJ), the National Education Inspectorate (NEI), the Principals’ Association, the School Boards, teacher educators, current college students and recent graduates participated. Unfortunately, while there was good participation from most stakeholders, the UCJ and JTA were unable to attend.

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13. Fernando Carrion, General Director for Teacher Training in the Ministry of Education (Bolivia), reported at the ITEN first Roundtable on Education in the Americas (April 27, 2016).

14. David Cooperrider developed Appreciative Inquiry in the mid-1980s with Suresh Srivastva as the foundation of his doctorate in organisational management. To read about AI see the Appreciative Inquiry Commons at <https://appreciativeinquiry.case.edu/>

15. VIPP was developed by UNICEF Bangladesh in the late 1980s as a strategy to encourage participant involvement in workshops of all kinds. The strategy uses coloured cards and markers for participants to enable them to document thinking and ideas anonymously. Participant cards are shared by the facilitator by posting them on walls in the meeting room. For a description of the VIPP strategies, see [http://www.unssc.org/home/sites/unssc.org/files/publications/vipp\\_-\\_visualisation\\_in\\_participatory\\_programmes.pdf](http://www.unssc.org/home/sites/unssc.org/files/publications/vipp_-_visualisation_in_participatory_programmes.pdf)

The findings of the “think piece”, the research on international efforts to reform teacher education and the development of the CARICOM Strategic Action Plan for HRD and Education set the context for the work of the participants. The AI “Discovery” and “Dream” sessions conducted on the first day created the tone and nurtured a positive atmosphere that would guide the creative thinking to inform the strategic plan on the second and third days of the workshop.

### ***The objectives of the AI***

The objectives established for the consultation were:

1. To explore the positive elements of teaching
2. To design an integrated education system to nurture 21st century teachers and learners, and
3. To plan a system to encourage learners to reach their full potential under the care and with the encouragement of a competent teaching cadre.

After sharing positive stories about educational experiences in which they were involved in the Discovery phase of the AI to set the tone for the remainder of the consultation, the Dream phase enabled participants working in small groups to create a vision of what teacher education could be at its very best — if there were no constraints to developing that vision. They were encouraged to “Dream big” and describe teacher education as they would like it to be in the 21st century. After exploring their dreams, participants worked in plenary to begin converting their dreams to a positive plan for teacher education.

## **VISION, MISSION AND OBJECTIVES FOR THE STRATEGIC PLAN FOR THE REFORM OF TEACHER EDUCATION**

### **Vision**

A quality teacher education system driving human, economic and social development

### **Mission**

To prepare teaching professionals who are reflective, socially conscious, highly proficient practitioners empowered to develop independent, creative and productive citizens.

### ***Objectives***

Following are the ten objectives the participants developed to accomplish the vision and mission for teacher education in the 21st Century:

1. Recruit candidates who are academically sound and socially engaged
2. Develop the teacher as a professional
3. Implement a curriculum that promotes the competencies and qualities of the teacher
4. Engage highly qualified teacher educators who employ current, relevant pedagogical practices
5. Provide adequate student support systems for their success

6. Foster knowledge, use and integration of ICTs in the teaching and learning process
7. Provide a physical environment appropriately equipped to optimise teaching and learning
8. Promote teaching as a profession of choice
9. Promote teaching as a field of enquiry
10. Establish a policy framework to underpin the professional teacher education system.

### **Design phase of the AI**

The design phase of AI enables participants to examine the dreams developed for teacher education and to analyse and structure how the dreams could be realised. Within AI, participants explored seven of the strategic objectives:

Since there is already a sub-committee of the TWG restructuring and developing the curriculum, the participants decided to set that objective aside. They also decided not to develop strategic objective 6, addressing the inclusion of ICTs in the teaching and learning system, perhaps because they felt it needed the input of ICT experts. They also agreed not to address strategic objective 10, since those policies will need to evolve from implementation of the other objectives.

The TWG reviewed and agreed with the results of the AI at its meeting in mid-June.

### **Completion of the strategic action plan for the reform of teacher education**

The preliminary activities that precede the drafting of the strategic plan and accompanying implementation plan have been completed at the time of writing this paper. The outcomes of the AI will underpin the Strategic Plan and inform the Implementation Plan and timetable for implementation. The draft plan will be discussed at the TWG meeting in early July 2016. However, the challenge is not the drafting of the Strategic Plan, but the crafting of the implementation steps and timelines for addressing the strategic objectives.

Once there is consensus among members of the TWG, the Plan will be shared with a wide range of stakeholders for their input and response. The consultant and the TWG members will conduct a series of consultations with those stakeholders to finalise the plan and its implementation. It is anticipated that the plan will be complete by the end of August 2016, so that implementation can begin in the financial year 2017-18.

The stakeholder consultative phase on the Strategic Plan is critically important, because it is through those consultations that commitments about the Plan's implementation will be achieved. There may need to be several different kinds of presentation on the plan, each designed to reach a particular stakeholder audience.

### **SUMMARY AND FINDINGS**

As one member of the TWG observed, the ideas and objectives informing the Strategic Plan for the reform of teacher education are not new, but perhaps teaching is now ready for that reform. Indeed, there is now a regional context into which Jamaica's teacher education reform can comfortably fit, with

a constructive framework approved for developing teaching professionals. Teacher education reform is a subject of discussion, planning and design being articulated in many countries around the world.

Jamaica is not quite at the cutting edge of that reform, but has moved past idle talk to plan for it actively and develop a schedule for its implementation. There are now positive voices among all of the participating stakeholders. The constructive process for developing the strategic action plan has enabled the decision-making to progress smoothly.

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# The Teaching Circumstances of Environmental Education in Primary Schools in Nonthaburi Province, Thailand

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## ABSTRACT

This study investigated the teaching circumstances and challenges of environmental education in primary education in Nonthaburi province, Thailand. The research population was the group of 96 social studies teachers in all public primary schools in the province. Of this number, 30 teachers answered the Likert scale questionnaires and 15 teachers participated in a focus group. The data was analyzed using mean, standard deviation, and content analysis. The findings revealed environmental education practices, concerns about crucial environmental issues, and student behaviors. School played an important role in environmental education throughout various school projects and activities. Importantly, teachers required better knowledge in environmental education. Some recommendations were made in this regard.

**Keywords:** teaching circumstances, challenges, environmental education, primary schools

## INTRODUCTION

The occurrence of natural disasters nowadays indicates that the natural environment is having a significant impact on our lives. Thailand, a small country in Southeast Asia, has at times sustained much damage as natural resources deteriorate from deforestation, drought, and severe floods; and its environmental problems have been increasing over the years. These issues definitely provide grounds for serious concerns and serve as major reasons for us to infuse environmental knowledge into schooling.

It is important to note that human behaviors, directly and indirectly impact the environment through daily activities that respond to needs, beliefs, attitudes and values. In other words, these affect environmental quality as they provide humans with ideas about “what to do” or “what not to do” in the environment.

Environmental education can have a major role in helping to prepare our youngsters to rectify these environmental problems and live sustainably in the future. Education will definitely provide the appropriate knowledge, beliefs, attitudes, and values needed to perform desirable environmental behaviors. Learning about the environment is relatively complex as it is multidisciplinary, involving the natural sciences (physical and biological sciences), social sciences, and applied sciences, demanding a solid knowledge of technology, land use, ethics, domestic law, international law and many other subjects (Buza, 2010). As a result, environmental literacy is crucial in the 21<sup>st</sup> century.

The Basic Education Core Curriculum B.E. 2551 (2008 A.D.) in Thailand has been well established, focusing on environmental education. National learning standards and indicators, particularly in the area of social studies, religion and culture, were set clearly in order to enhance students’ understanding of the

interrelationship between man and the physical environment. This has led to cultural creativity, awareness and participation in the conservation of resources and the environment for sustainable development (The Ministry of Education, Thailand, 2008: Standard 5.2). Schools can formulate their own additional environmental subject areas and activities based upon their needs.

This study was derived from the first objective of the research titled *the Development of a Distance Training Package for Social Studies Teachers on Environmental Education*, published in 2014. It investigated the teaching circumstances in practice, and the challenges faced by elementary teachers with environmental education in primary education in Nonthaburi province, Thailand. Nonthaburi is a northern suburb of Bangkok, where there are a high number of domestic migrants due to economic progress. This leads to the increase of various environmental issues in the community.

## THEORETICAL PERSPECTIVES

The objectives of environmental education were outlined in the UNESCO-UNEP (The United Nations Environment Programme) Environmental Education Newsletter Vol.1, No.1 (January 1996). UNEP is a major global organization involved in environmental education over the past decades; whose objectives are to improve awareness, knowledge, attitudes, skills, and participation (Institute for Global Environment Strategies, 2004), as stated below:

**Awareness:** To help social groups and individuals acquire awareness and sensitivity towards the environment as a whole, and become informed on issues, questions and problems related to environment and development.

**Knowledge:** To help individuals, groups and societies gain a variety of experience in, and acquire a basic understanding of what is required to create and maintain a sustainable environment.

**Attitudes:** To help individuals, groups and societies acquire a set of values and feelings of concern for the environment, and the motivation to actively participate in protection of the environment.

**Skills:** To help individuals, groups and societies acquire the expertise for identifying, anticipating, preventing, and solving environmental problems.

**Participation:** To provide individuals, groups and societies with the opportunity and the motivation to be actively involved at all levels in creating a sustainable environment.

The responses to these challenges focus on the integration of environment and development issues into formal and non-formal education so that through the development of appropriate skills and abilities, environmental sustainability can be attained. Even though UNEP has achieved increased individual and national environmental awareness over the years, the biggest challenge still remains in environmental education (UNEP, 2005). Recently, the new sustainable agenda of the United Nations has launched the Millennium Development Goals. These goals will serve as a guide to the year 2030 and help to make our world more sustainable. Three out of the 17 stated goals concern environmental issues — water and sanitation, energy, and climate change (United Nations, 2015).

Teachers are the main actors in this scenario. Teachers should be well equipped with better knowledge and awareness in environmental education in order to improve their teaching and learning activities to make them more effective. However, in Thailand, teachers do not seem to be acquainted with environmental content, concepts, or environmental education in practice. Environmental education courses may be, at best, a selective course in the pre-service teacher education institutions. It is important to explore ways of promoting and improving the integration of education for sustainable development in their educational strategies.

## METHODOLOGY OF RESEARCH

This study investigated the teaching circumstances and challenges of environmental education in primary education in Nonthaburi province, Thailand through questionnaires and a focus group.

The research participants were social studies teachers in public primary schools under the Office of Primary Education Service Area, Nonthaburi province. There were a total of 96 public primary schools in the province. In this study, 96 participants, one from each school, were purposively selected in order to participate in the survey. The research instruments of this study were Likert scale questionnaires and a list of questions for a focus group. There were 30 returned questionnaires and 15 informants participating in the focus group discussion. The quantitative data of teachers' opinions was analyzed via mean and standard deviation, and the qualitative data was organized via content analysis.

## DATA ANALYSIS

### Part 1: The Teaching Circumstances of Environmental Education

Table 1 illustrates that most teachers agreed with the items related to teaching circumstances in practice. They particularly agreed that social studies classes would be more effective if instructional materials were provided. The teaching process was aligned with the curriculum standards. In particular, the curriculum standards in geography involving the interrelation between humans and the environment were clear; while they were neutral with difficulties in designing lesson plans and applying instructional materials in classes.

In the focus group discussion, teachers indicated the major environmental issues, classified into three main areas: environmental issues, environmental education to help solve the problems, and the role of schools in the community.

#### *1. Environmental Issues as Priority*

Teachers indicated that schools had encountered three main environmental issues, which need to be focused on in teaching and learning:

**Waste Disposal:** Daily waste had been increasing due to population growth in the community. Schools encountered waste issues (disposed papers, plastic, food) within the schools, and waste from the community. As one teacher reported, "the community dumping ground is located near school, we have had trouble with unpleasant smells".

**Sanitation:** Apart from the problems of noise and dust, Nonthaburi province is viewed as an agricultural community. A teacher complained, “at times, we have been confronted with pesticides from the plantation nearby”.

**Energy:** Most schools nowadays are better equipped with electrical appliances such as computers, projectors, multimedia, and music instruments that consume more electricity. A teacher noted, “students have to be more concerned about unnecessary electrical consumption”.

| <b>Items</b>   | <b><math>\bar{X}</math></b> | <b>S.D.</b> |
|--|-----------------------------|-------------|
| 1. The curriculum standards in geography involving the interrelation between humans and the environment are clear. | 3.77                        | 0.57        |
| 2. The teaching process was aligned with the curriculum standards.   | 3.87                        | 0.51        |
| 3. There were difficulties in designing lesson plans.  | 3.20                        | 0.89        |
| 4. Instructional materials were always applied in your classes.  | 3.50                        | 0.51        |
| 5. Social studies classes would be more effective with instructional materials.                                    | 4.40                        | 0.62        |
| <b>Average</b>   | 3.75                        | 0.62        |

## ***2. Environmental education to solve the problems***

Teachers mentioned that it is important to engage students with better environmental knowledge, attitudes, and behaviors through the various teaching processes, outlined as follows:

**The formulation of additional courses:** These courses aimed to study local environmental issues, designed according to the age of students. They covered subjects such as the accumulation of waste, farming safety, landscaping, how to survive flooding, and energy saving.

**The appropriate pedagogy:** Classes were organized with a variety of teaching approaches such as problem-based teaching, project-based learning, and book writing.

**School activities:** Various activities were arranged in order to encourage environmental actions by students such as activities in clubs, and projects such as environmental conservation, waste-free bio-fertilizer, clean and clear canals, green schools, sanitary schools and bikes to collect paper for recycling.

## ***3. The role of schools in the community***

In Thailand, one of the school functions is to promote the relationship between school and community. In doing so, schools have encouraged parents to participate in various school environmental activities to reduce waste, and reuse or share available resources to reduce household expenditure. This also

promotes the close relationship between home and school. “Sometimes teachers explained about making handicrafts for sale. Sometimes the schools invited the people from other organizations to teach how to make soap, detergent, dishwashing materials”, a teacher added.

Regarding the participation of local government, teachers were quite impressed with the help to promote the school’s environmental activities. A teacher mentioned, “they always come to visit the school and help whenever requested”.

**Part 2: Challenges to Environmental Education**

Table 2 reveals that most teachers expressed their agreement of the need for professional development in environmental education. They felt that their students still needed improvement in environmental concerns even though they were active in environmental activities, and had already acquired relatively good environmental behavior.

| <b>TABLE 2: CHALLENGES FACED BY ELEMENTARY TEACHERS IN ENVIRONMENTAL EDUCATION</b> |                             |              |
|--|-----------------------------|--------------|
| <b>Items</b>   | <b><math>\bar{X}</math></b> | <b>S. D.</b> |
| 1. Most students have acquired relatively good environmental behavior.             | 3.73                        | 0.58         |
| 2. The instructional materials were adequate.                                      | 2.94                        | 0.72         |
| 3. Professional development in environmental education was needed.                 | 4.13                        | 0.68         |
| 4. Students were active in environmental education and activities.                 | 3.83                        | 0.59         |
| 5. Students still need improvement in environmental concerns.                      | 4.07                        | 0.82         |
| <b>Average</b>   | <b>3.75</b>                 | <b>0.68</b>  |

In the focus group discussion, there were two important areas that teachers raised as concerns regarding environmental education for students. The first issue was the impact of their behavior on the environment. A teacher noted, “on many occasions, students still left the trash, instead of putting it in the bin”. Another issue was the effort made by their families to create a better environment for their children.

Teachers were mostly satisfied with students’ environmental performance in general, even though it was sometimes sporadic. Furthermore, they noted that environmental cultivation for primary students was much easier than for their secondary counterparts — due to their reduced participation. Fortunately, teachers were optimistic that students’ environmental behaviors would be improved by stronger cooperation between schools, families, and local government.

## MAIN FINDINGS

Regarding teaching circumstances in practice, and the challenges faced by elementary teachers with environmental education in primary schools in Thailand; the important findings were as follows:

1. Teachers recognized that the issues of waste, sanitation, and energy were the main environmental issues that needed to be emphasized in teaching and learning.
2. Schools have definitely made a great effort in implementing various environmental activities creatively.
3. Regarding environmental issues, schools focused on participatory learning. Students took part in activities that cultivated their actual life skills, and collaborated with schools, teachers, and local government.
4. Teachers were very concerned about students' persistently unacceptable behavior and lack of awareness regarding the environment, as well as their parents' inattentiveness towards the environment. Importantly, teachers felt that their teaching processes and learning standards in particular were relatively ineffective.
5. Teachers required better environmental education knowledge, as they were probably not familiar with environmental concepts, subjects and issues, including the availability of appropriate instructional materials.

## DISCUSSION AND IMPLICATIONS

### Teaching Circumstances in Practice

Nonthaburi is a northwestern suburb of Bangkok, Thailand. It is situated in a fertile basin on the bank of the Chao Phraya River, where many fruit and flower plantations are interspersed with a number of historical temples. The town is only 20 kilometers from Bangkok and is conveniently accessible by roads and river. Nonthaburi is viewed as a migrant destination due to its growing economic community. As a consequence, environmental issues have been increasing over time. In this regard, teachers recognized that the issues of waste, environmental sanitation to protect human health, and energy were the priorities that needed to be emphasized in teaching and learning.

However, teachers were unfamiliar with environmental concepts because other subjects such as history, geography, religion, and culture took priority. Training in environmental education was unlikely to be widespread in Thailand. This was not surprising, as Simone (2010) noted that, even in Canada, environmental education had been given less priority in teacher education for the past three decades. The environmental education courses offered by Canadian pre-service teacher education institutions had also remained low. Moreover, Palmer (1998) pointed out in the preface of his book that "environmental education is a field characterized by a paradox. Few would doubt the urgency and importance of learning to live in sustainable ways, but environmental education holds nowhere near the priority position in formal schooling around the world".

So far, schools in Thailand have definitely made an impressive effort in arranging various environmental activities within schools such as waste management, bio-fertilizer production, river

conservation, voluntary projects for environmental improvement of the community, and even a project for weight loss by cycling to paper recycling areas. These projects were usually supported by local government when requested and students fully engaged in the various school environmental activities.

Schools focused on participatory learning in environmental education, where students took part in activities that cultivated their actual life skills; and they also collaborated with teachers and local government. Teachers were very impressed with the significant efforts of the local government to take care of school sanitary environments. This revealed a whole-school commitment to some extent, as the Ministry of Education, New Zealand (1999) recommended. More importantly, the collaborations between schools and local governments may extend the ideas for community and family improvement, leading to significant sustainable development (Darkhor, 2005).

### ***Environmental Education Challenges***

Teachers were mostly satisfied with students' overall performance in environmental behaviors. However, they were still extremely concerned about students' persistently unacceptable behaviors and lack of awareness — including inattentiveness towards the environment of their parents. Teaching and learning need to cultivate students' environmental concepts, attitudes, values and practices continuously in various ways, as environmental education is a lifelong process.

Teachers also felt that their teaching processes, according to the environmental learning standards in particular, were relatively ineffective. Teachers accepted that they were relatively inefficient in arranging various learning activities, due to their inadequate knowledge of learning design, the shortage of instructional materials, and particularly the distribution of ICT facilities. As a consequence, teachers expressed the need for training in environmental education.

## **CONCLUDING REMARKS**

It is noted that teaching and learning in environmental education would be most effective when activities are integrated responsively into curriculum standards. In doing so, students would acquire knowledge that helps them understand meaningfully, become concerned about the considerable importance of environmental and natural resources, and accept personal and social responsibility for their actions. This would lead to holistic and enduring learning.

Environmental education in the primary schools of Nonthaburi province, Thailand, was ineffective as teachers were not well trained, even though this was the main problem affecting students' awareness. Teachers needed encouragement to spend more time and resources on environmental education, including supervision and responsive training, in line with the framework for the 21st century (Palmer, 1998).

Recommendations derived from the study were:

1. Thai teachers should be well trained in several environmental concepts; including learning processes and techniques which would enable them to organize environmental classes effectively. This includes the integration of environmental school activities and learning standards. Supervisors could also play an important role in teacher assistance.

2. Teachers noted that even though environmental behavior was well accepted by elementary students, it was not totally permanent. It was still a challenge to find better practices in teaching and learning.
3. Environmental problems have been recognized as global issues, but they can be rectified by personal actions. Environmentally friendly cultivation of students' behavior must be done by teachers and parents. Further study is needed on the specific methods of encouraging collaboration between parents and schools in environmental education.

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# Creating a Culture of Research: Perspectives of Lecturers and Students at Selected Jamaican Teachers' Colleges

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## ABSTRACT

Effective learning communities are a result of the interplay between theory and practice, which is strongly entrenched in research. With the introduction of the Bachelor of Education programme in Jamaican teacher training colleges, teachers' colleges continue to experience significant challenges in achieving a 'buy-in' from lecturers and students concerning their involvement in conducting action research. Hence, the purpose of this interpretive exploratory mixed methods study was to ascertain the perspectives of lecturers and students on factors contributing to and inhibiting the research culture. This paper was guided by five research questions, utilizing purposive sampling to extract data from 210 participants over eight weeks. Two questionnaires were administered with closed and open ended items. The findings are consistent with literature, as some students believe the period allotted for action research should be extended, while others think supervision is lacking. Lecturers claim their schedule is too compact to allow for personal engagement in research. They agree that research is important, but that the timetable needs to reflect quality time for research.

**Keywords:** culture of research, perspectives of lecturers and students, factors influencing research, action research

## INTRODUCTION

Higher education plays an essential role in society by creating new knowledge, transmitting it to students and fostering innovation. Quality teaching in higher education matters for student learning outcomes, but fostering quality teaching forces teachers' colleges to ensure that the education they offer meets the expectations of students and the requirements of employers, both today and for the future (Hénard & Roseveare, 2012). During the last two decades, much attention has been directed towards developing research in teacher education globally. Teacher education is clearly an essential element for the improvement of education by producing highly qualified teachers. Consequently, many countries have identified the production of "high quality teachers" as the goal and focus of their teacher education programmes (Eid, 2014). Hence, higher education theorists and practitioners purport that institutional research is essential for effective decision-making in colleges and universities (Delaney, 1997).

Saupe (1990) identified institutional research as an essential component of sound college and university governance that should be part of any proposed planning initiatives, policy issues or institutional decisions. In the United States, institutional research continues to evolve as a consequence of state and federal policy decisions, changing clientele, advances in technology, the shifting budgetary climate and continuous demands for institutional effectiveness (Peterson, 1999). In 1996, a survey of 243 colleges and universities in New England, United States revealed a strong relationship between the institutional research function and the institution's size (Delaney, 1997). This finding indicates that institutions with

a rich culture of research have the capacity to diversify their products and services, providing them with considerable advantages over those whose indulgence is minimal.

In most developed countries, teacher education has moved from training teachers to transfer knowledge, to preparing them to practice a new role of producing knowledge (Stewart, 2011). In other words, in the process of becoming and being a teacher, conducting research not only promotes reflection about personal performance in the classroom, but also seems to stimulate a valued process of self-assessment and challenges teachers to identify their personal strengths and weaknesses. Thus, in order to help teachers practice this advanced role, teacher education should equip teachers with self-evaluation, research and problem-solving skills that are based on research-oriented education.

## BACKGROUND

Jamaica, like other countries, has been receiving numerous calls from both the private and public sector to strengthen the quality of teacher training programmes (Tyson, 2011). According to the author, it is believed that teacher education programmes lack rigour. She further cited that teachers must be trained so that they are competent in their field, and at the same time be able to guide their students' educational development. Over the last five years research-based approaches have become integral to Teacher Education Programmes. This is premised on the notion that the knowledge-base in educational research is dynamic, and student teachers must be able to interact and apply the knowledge for personal and professional development (Bentrem, Delvin & Feldhaus, 2013). In order for this to be realized, Zeichner & Conklin (2005) suggested that the integration of theory and practice is critical, and research-based thinking has to be viewed as the connecting factor in this process.

In recognition of the need for research-based programmes in Teacher Education, Teachers' Colleges of Jamaica in collaboration with The Ministry of Education reviewed and redesigned the Teacher Education Programmes to reflect a more research-based structure. In addition, the requirements for professional certification in teaching changed to a four-year Bachelor's Degree in Education, signalling the end of the three-year teaching diploma. In keeping with this new design, the reintroduction of the course 'Introduction to Educational Research' in 2011 and the addition of 'Applied Research,' became significant features. To meet requirements for graduation, student teachers are now required to complete four years of study and conduct an action research.

This new design demands a new set of behaviours, characterized by a fundamental change in what is understood to be action research, the development of a research culture which is supported by activities in every discipline, and the unlearning of any behaviour which goes against this culture.

These changes had considerable impact on lecturers in all eight teacher training colleges, as many of them who had experienced loss of skill-set resulting from the removal of Action Research in the diploma programme, realized that they were now required to facilitate the courses. The impulse for continuous development in educational research diminished significantly, as lecturers began to focus on diverse methodologies to enhance the newly introduced programme. In most instances, this meant retooling to develop competence and become conversant with the content. Another challenge was insufficient time to assimilate the content and utilize the research skills. The effort to create a culture of research was therefore met with strong resistance from some lecturers and students, who contended that research was extra work for their already overloaded schedule.

Notwithstanding, college administrators embraced the change, and to enhance the development of the research process, they consulted with the Ministry of Education and obtained approval to establish the Office of the Director of Research, Development and Projects in 2011. For most colleges, the position was filled either by the appointment of a lecturer or the conduct of internal interviews. One of the major roles of this office is to manage and monitor research activities within each college. This new portfolio demands scrutiny of best practices nationally and internationally, to create leverages to continually evaluate the research process and outcomes.

To this end, lecturers and students benefitted from external and internal exchanges: symposia, conferences, workshops and other research-related activities which provided knowledge and strategies on application and assessment procedures. Additionally, some lecturers and students were able to write and present action research papers at Teachers Colleges' of Jamaica Research Conferences, Annual Research Conferences at their own colleges, and others. In 2013, one college had four fourth-year students and ten in 2015, sharing action research papers at in-house conferences.

With approximately five years of unwavering effort to inculcate a strong research culture among lecturers and students, teacher training colleges — although different in structure, funding regime, size of population and programme diversity — continue to display unity of purpose amidst the overwhelming challenges that exist in creating a rich landscape for research.

## PURPOSE OF STUDY

The purpose of this study was to ascertain the perspectives of lecturers and students regarding the development and maintenance of a vibrant research culture in selected Jamaican teachers' colleges. Through careful analysis, the researchers intended to comprehend the perspectives and attitudes of lecturers and students in an effort to provide a supportive context in which research can be uniformly expected, discussed, produced and valued. Additionally, an evaluation of the factors contributing to and hindering research activity was considered pivotal in helping the researchers to make recommendations to facilitate institutional growth and strengthen capacity-building.

## RESEARCH QUESTIONS

**Main Question:** What are the perceptions of lecturers and students regarding the importance of research at the teachers' colleges?

**Sub-questions:**

1. What are lecturers' attitudes toward conducting research at their colleges?
2. What do lecturers perceive are the factors which have influenced the research culture at teachers' colleges?
3. What factors are preventing lecturers from engaging in action-based research at their respective colleges?
4. To what extent are lecturers involved in research?
5. What are students' attitudes toward conducting action research as a part of their curriculum program requirements?

## Significance

The researchers hope to gain comprehensive knowledge of the research culture at selected colleges to assist with the decision-making process regarding structures needed to engender a strong culture of research. It is hoped that the findings of this study will allow administrators of teachers' colleges to carefully evaluate the progress made within the last four years, and implement prudent decisions to encourage lecturers and students to engage in the research process. The Ministry of Education and the teachers' colleges will amalgamate to provide the support services needed to broaden the scope of research among lecturers and students. Student teachers will value the knowledge and opportunities gained from action (future engagement as professional) research. Likewise, it is expected that other teacher training institutions/agencies in the Caribbean and other countries will welcome the findings and employ strategies to strengthen the culture of research in their respective institutions.

## LITERATURE REVIEW

Creating a culture of research requires being familiar with the attitudes of all who will be involved in creating, maintaining, developing and enhancing such a culture. Such an enterprise also involves familiarity with the factors which will aid, as well as those that will hinder. Dundar & Lewis (2008) identified the indicators of a research culture as individual attributes, institutional and departmental attributes/culture and working conditions. In seeking to understand the perception of lecturers and students to conducting research, this review of the literature will first focus on the attitude of lecturers and student teachers conducting research; then on factors that prevent a culture of research from occurring in higher education institutions, as well as those factors that contribute toward developing a culture of research.

### *The Attitude of Lecturers to Action Research at Higher Education Institutions*

A positive or negative attitude towards research can be attributed to ways in which teacher educators construct the meaning of their professional functioning in a changing environment (Gee, 2001, p. 99) and (Doecke, 2004). Cochran-Smith and Lytle (1993), Goodnough (2008), Jones (2004), Rainey (2000), Sardo-Brown et al. (1995) and Whitehead (1993) discussed the factors that influence the effectiveness of action research processes. Sardo-Brown et al. (1995) identified six major barriers in conducting educational action research:

- teachers' anxiety surrounding the perceived technical nature of research,
- differential status (university lecturers vs. teachers),
- lack of ownership,
- perceptions of treating different groups of students unfairly due to intervention,
- sensitivity of issues if the intervention does not turn out positive; and
- institutional resistance.

In his assessment of action research, Wallace (1991, p.56, in Burns 2005) stated: "To do research properly requires special expertise, a lot of time, financial resources and perhaps particular personal traits, for example, an academic bent, etc." Teachers who do not perceive themselves as researchers are more likely to resist action research (Jones 2004). It becomes more difficult to get the commitment of

teachers in collaborating in action research if they do not see it as important or relevant (Greenbank, 2007). In the study of Rainey (2000), the factors that influence the success of implementing an action research by a teacher include: the amount of time given, level of relevant training provided, level of collaborative support and level of encouragement from colleagues and management. Goodnough (2008) did a study 39 science teachers who used action research in their practices over a three-year period, and reported that the teachers found the same issues mentioned above challenging.

Kumar & Munroe (n.d.) conducted a survey among 51 faculties (16.3% of the on-campus teaching staff) from five of the six Colleges at Aksum University in Ethiopia, and found that the recurring theme from the respondents was the need for research methodology and writing training. Even though the respondents in aggregate were overwhelmingly positive about academic research, there was some discouragement expressed that colleagues were not supportive of participation in research activities and thought it was a waste of time. The respondents' comments indicated that there was resistance to academic research activities at a subliminal level. Intellectual curiosity was not a universal trait of faculties.

Wilson et al. (2000) suggested that when attitudes change, the new attitude overrides but does not necessarily replace the old attitude. Fazio et al. (1986) explained that attitudes are activated automatically only by stimuli that elicit a quick, conscious, evaluative response. University faculties are the primary actors in this research production system, and it is ultimately their attitudes and perceptions that determine the output of action research.

### ***Student teachers' attitude towards action research***

Student teachers' attitude towards doing action research can be categorized under a number of themes: the likelihood of conducting action research beyond the student-teacher experience; division between teaching and research; quality of action research teaching and subsequent use in teaching practice.

Worrell (2006) discovered that many student teachers undertaking action research were confident that they had the capacity to develop effective solutions to authentic problems which would be relevant to the contexts in which they are applied. Galassi et al. (1999) noted that one of the many challenges facing beginning teachers is determining how teaching and educational research fit together, why it should concern them, who the research is ultimately serving, and what the focus of the research is. These researchers also noted the difficulties that novice teachers face in transitioning from students to teachers, as they have a multiplicity of roles: student, teacher and researcher. This causes difficulties in engaging in the action research process, which are added to others mentioned in the literature: primarily, the lack of time.

Qablan et al. (2008) revealed a disconnection between teacher preparation and research which is understood to be, "a search for information using the media". Some student teachers, therefore, restricted the experience of doing action research to merely fulfilling the college requirements, but did not envisage utilizing action research once they became fully qualified teachers. The researchers indicated that some school principals resented attempts at using action research, regarding them as intrusions to be tolerated for as long as teachers are enrolled in teacher education programmes, and then to be thankfully forgotten! A newly qualified teacher may feel demoralized and ostracized about using action research, especially if teaching staff in the school are not supportive (Worrell, 2006).

### ***Factors that Facilitate a Culture of Research***

Institutional transformation guided by research engagement requires the relevant resources. Gibson (2009) noted the importance of academic libraries in creating research and development. He believed that research and development is as much a matter of values and priorities as of operational planning. A library which facilitates the interests of the community to which it belongs is without doubt essential, yet it must be supported by other aspects of institutional and operational planning, such as time dedicated to research and the provision of training. The act of conducting research can no longer be seen as extra work or something added on that creates additional stress, but rather as Njuguna & Itegi (2013) insisted, academic teaching must be embedded in research if it is to contribute to the building of an academically sound mind and lead to successful teaching and learning.

Downes (2011) stated that there must be willingness to take advantage of opportunities as they present themselves, because we owe it to future generations to create new knowledge from which they can benefit — just as we have benefitted from the work of our predecessors. Njuguna & Itegi (2013) supported this point in discussing their own situation in Africa (specifically Kenya). They stated that research plays a pivotal role in the systematic development of new knowledge. They went on to add that research is central to the effectiveness of higher education, whose mission, among many other things, is to create and disseminate knowledge through research.

Farrow & Taylor (1996) conducted a study in two Canadian tertiary institutions and discovered that faculty viewed five factors as positive influences on research; the strongest being the motivation to carry out research, followed by the freedom to design one's own research program, the ability to find research topics, the ability to get internal funds, and the ability to get research published. These five factors, in almost identical order, were identified at each institution. The high level of research motivation is reassuring, suggesting that faculty members are ready to take advantage of whatever strategies might be implemented to facilitate research.

### ***Factors which Hinder a Culture of Research in Higher Education Institutions***

In addition to problems stemming from attitudes there are other factors which can hinder the promotion of a culture of research in higher education institutions. Nadeem (2011), cited in Sanyal & Varghese (2006), discussed the situation of research in higher education institutions in Pakistan, stating that, while “universities in the developed world have a firm tradition of research, universities in the developing world retained strong teaching functions and weak research functions”.

Cheetham (2007) reminded us that the situation in which Jamaican teachers' colleges find themselves is not just building a culture, but changing a culture, which is difficult. Teachers' colleges are accustomed to focusing on teaching and many lecturers do not see themselves as researchers. Johnson & Louw (2014) identified a similar situation in South Africa when the schools of technology were transformed into Universities of Technology, and found themselves without the required culture in research to sustain themselves as universities. They pointed out that the development of such a culture became vital in order to build research.

Itegi & Njuguna (2013) added another dimension to the complexity of the issue when they purported that many lecturers did not learn the necessary skills in the first place, due to a deficiency in training in research methodology. The 2005 Economic and Social Research Council (ESRC) Report on education

research in the United Kingdom showed that many new teacher educators came into the college/university from practitioner backgrounds, often without sustained experience of research in the social sciences or significant amounts of research training acquired through doctoral work. Bazeley (1994) identified among staff at an Australian university in transition, the need for an improvement in their research skills, data collection, and analysis. The result is that many lecturers now experience panic in the face of the new requirement to engage in action research.

Establishing proper infrastructure is affected by the fact that there seems to be confusion as to what exactly the new reality is supposed to be and the assumption that research is extra work because no time is provided to do it (Marchant, 2009). Findings of an empirical study in Namibia (Chetty & Lubben, 2010), showed that most teaching staff consider teaching and research as dichotomous. Research activities are seen to satisfy the institutional requirements for securing research funding and producing publications. Other factors mentioned in the literature (Maguire, 2000; Murray, 2007; Sikes, 2006) which restrict the time and opportunities available to do research include: heavy teaching loads, the impact of partnership work with schools, a lack of strong departmental research infra-structures/cultures, and restricted learning environments.

Marchant (2009) also observed other factors that act as obstacles to engendering a culture of research, such as: “a teaching focussed culture, curricular development and delivery being seen as more critical, lack of skills in interdisciplinary research — including holistic thinking, creativity, intercultural competence and communication, and the lack of commitment to persist with drafting, redrafting, receiving rejections and revising papers for journals”. The researcher cautioned that removing these obstacles is not necessarily the same thing as encouraging research. Fowler & Procter (2007) indicated in their analysis of supportive research environments that early and mid-career researchers may fail to thrive in environments in which isolation, heavy teaching loads and lack of dedicated time for research are contributory factors in creating restrictive learning.

Judkins, McCrone & Inniss (2014) cited the issue of packed timetables as an obstacle to the critical process of transforming from a curriculum-focused culture to a research-driven one — an item which also needed to be placed on the timetables. Cheetham (2007) suggested that this approach required a culture change in which it is acknowledged that there are no opinions in academic conversations, but positions which result from carefully considering the arguments presented. In addition, all participants should remain open to change in light of different and more convincing evidence.

The school context was seen to be a key determinant of whether or not action research is pursued. Thus, student teachers may be empowered to do research, but the school scenario might not be encouraging. Slutsky, Christiansen & Bendau (2005) observed that schools continue to be contexts that limit the rich potential of action research to inform and improve teaching. While teacher research is frequently advocated in educational literature and policy statements, significant reform in school structures, norms and administrative support will be required if teachers are to be expected to become action researchers. The implication of this is that schools where action research is ignored or discouraged will probably not progress much towards becoming learning organizations (Worrell 2006).

## **METHODOLOGY**

A collaborative approach was employed as the research officers of four teacher training colleges in Jamaica examined the perceptions of lecturers and students regarding the importance of research at these institutions.

A mixed methods design combining qualitative and quantitative techniques and data analysis (McMillian & Schumacher, 2010 and Fraenkel & Wallen, 2006) was employed. Given the fact that this study was exploratory in nature, the use of mixed methods helped to identify factors and unearth questions that can guide future studies (McMillian & Schumacher, 2010). Thus, both qualitative and quantitative data provided a clearer understanding of what was studied (Fraenkel & Wallen, 2006).

### **Characteristics of the Sample**

Attempts were made to include all member colleges of the teachers' colleges of Jamaica, but only four of the nine colleges under the TCJ umbrella participated in the study — two of which are located in urban areas and the other two in rural areas. Throughout this study, pseudonyms were used to ensure the anonymity of participants and institutions.

#### **Lecturers**

The sample consisted of only lecturers teaching in the teacher education program who also supervised fourth year student teachers (pre-service teachers) as they conducted their action research, a requirement of the Bachelor of Education program. The sample comprised 38 lecturers representing approximately 21% of the target population of 180.

#### **Students**

Fourth year student teachers who completed both required research courses (Introduction to Educational Research and Applied Research) and completed an action research study were included in the sample. The sample comprised 172 teachers, representing approximately 48% of the target population of 356.

### **Sampling Technique**

In keeping with the views of McMillan & Schumacher (2010) and Creswell (2005 & 2003) the sampling technique employed was purposive. Participants were selected based on the researchers' knowledge of the population at each institution, ensuring that the participants were capable of providing relevant information to address the purpose of the research.

### **Data Collection**

Data collection instruments were inspired by the research questions but were substantiated by the literature, that is, indicators were aligned to the literature. As a part of the validation process, the selected items were audited by all members of the research team and consensus achieved. This process began in March and concluded in April 2016.

A questionnaire comprising six open-ended items was developed to ascertain lecturers' perceptions of research as a part of their daily job function. Instruments were distributed physically and electronically and completed based on lecturers' willingness and availability. The qualitative data collected were analyzed using thematic data analysis. The researchers first examined the data for themes and noted supporting instances for each theme identified. They then thoroughly scrutinized the responses of lecturers and recorded the frequency of each instance related to each theme. This is illustrated in Table 1.

The second phase of analysis of the lecturers' data involved disaggregating data to determine if there were any patterns or trends unique to each institution. Members checking (Creswell, 2005) was applied, to ensure that conclusions drawn about themes and related instances/exemplars were accurate.

To determine students' perceptions of conducting action research as stipulated in the Bachelor of Education Program, a questionnaire consisting of seven closed-ended items requiring students to respond using a Likert scale (strongly agree, agree, neutral, disagree and strongly disagree) and two open-ended questions was administered. Examination of students' data involved both qualitative and quantitative techniques. Students' responses were tallied and the frequency determined. This was done for each institution and then combined, as illustrated in Tables 2, 3, 4 and 5.

Qualitative data collected from open-ended questions were analyzed in a manner similar to the lecturers: (1) identifying themes and noting supporting instances for each theme; (2) recording the responses of students and the frequency of each instance related to each theme; (3) using supporting quotations to further illuminate the themes/instances; (4) examining the data for individual schools to determine if there were any patterns/trends that were unique to an institution; and (5) engaging in members checking (Creswell, 2005). Frequency charts were also used to compare institutions and present patterns and trends revealed by the data.

## DATA ANALYSIS AND DISCUSSION

The researchers used the guidelines developed by Chiseri-Strater and Sunstein (1997) to help with analysis of data. Tables with the relevant themes were used to record lecturers' and students' perspectives, to understand the meaning and interpretation of the relationship as outlined in the literature, and to compare data collected from the survey.

### Responses to Research Questions 1, 2 & 3

#### *1. Views on Conducting Research*

Two major themes emerged from lecturers' responses to conducting interviews: a) Research as the responsibility of the teacher; and b) Research that facilitates the professional development of teachers.

a) Research as the responsibility of the teacher. There is an overwhelming agreement among the sample of lecturers (N=38) regarding research as a major part of their responsibilities. This shows that lecturers value research as a way of learning more and exchanging ideas with others. From one perspective, research is considered an integral tool to teaching practice and pedagogy, as reflected in the following quotes:

*"Conducting research as part of my responsibilities as a teacher educator is crucial to my practice"* (A5).

*“...as teachers we encounter student diversity. If we intend to be effective, we should allow research to drive curriculum. Teaching what makes students learn and succeed is important. Research is the tool that determines these” (B16).*

*“...research is one of the fundamental skills that every teacher educator should be a part of. As a part of my responsibility it would enable me to make and stimulate discussions, challenge assumptions, reaffirm convictions, raise new questions, and make sensible decisions. Hereby, guiding the students in intellectual development” (C4).*

*“Research is an important part of academics and can enhance teaching practice” (D1).*

b) Research facilitates the professional development of teachers. The sample (N=38) believed that research enhances professional development.

*“Research informs one’s practice and contributes to one’s professional development” (A2).*

*“It allows for the uncovering of knowledge that can be inculcated in our student teachers. This will have a domino effect when they go out as professionals” (B1).*

*“I welcome the idea — research will guide me in content selection and teaching strategies” (C1).*

*“Research is integral to my survival as a lecturer at the tertiary level, where the knowledge base is more dynamic and requires more in-depth engagement” (D6).*

## 2. Willingness to do research

a) *Willing, due to perceived benefits* was one of the themes generated from the responses given.

Overall, most participants were willing to do research (n=35).

*“...Our duty to engage in research” (A1).*

*“I am willing to do so in order to enhance my personal and professional development” (B1).*

*“I am very willing to engage in research. Research informs my practice and allows me to stay current and keep abreast” (C1).*

*“I am always willing, as I understand the value of doing research” (D12).*

b) Willing, given the right conditions: Time/workload, support, resources

The conditions highlighted were some of the reasons for lecturers’ unwillingness to engage in research (n =3).

*“Time being allotted to such activities on the timetable” (A2).*

*“I would be willing if I could get the time, support and resources needed to engage in the research process. I have to scaffold student teachers in research but I also need support to engage in personal and group research” (B5).*

*Research takes time and focus and it is hard to conduct research during a forty-hour work week” (B13).*

*“Absolutely, if the terms of employment facilitates all this” (C7).*

*“I am very interested in doing research, but my current workload leaves little or no time for doing research” (D5).*

| <b>TABLE 1. DOMINANT THEMES EMERGING FROM THE LECTURERS' RESPONSES</b> |   |                          |                            |                             |                            |                            |
|--|---|--------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|
| <b>Survey Item</b>   | <b>Main Themes</b>  | <b>Sub Themes</b>        | <b>College A<br/>N = 5</b> | <b>College B<br/>N = 20</b> | <b>College C<br/>N = 7</b> | <b>College D<br/>N = 6</b> |
| 1. Views on Conducting Research  | a) Research as responsibility of teachers.                                      | Importance of research   | 5                          | 20                          | 7                          | 6                          |
|  | b) Research facilitates professional development of teachers.                   |                          | 5                          | 20                          | 7                          | 6                          |
| 2. Willingness to do research  | a) Willing due to perceived benefits  | Positive                 | 5                          | 17                          | 7                          | 6                          |
|  | b) Willing given the right conditions – time/ workload, support, and resources. | Negative                 | -                          | 3                           | -                          | 6                          |
| 3. Factors influencing the development of research culture             | a) Instructional/ Institutional factors<br>b) Personal factors                  | Support                  | 1                          | 7                           | 4                          | -                          |
|  |   | Time                     | 3                          | 3                           | -                          | 3                          |
|  |   | Funding                  | 1                          | -                           | -                          | -                          |
|  |   | Workload                 | 2                          | 2                           | -                          | 3                          |
|  |   | Research policy          | 1                          | -                           | -                          | -                          |
|  |   | Engagement in research   | -                          | 7                           | 1                          | -                          |
|  |   | Competence               | 1                          | 3                           | 1                          | -                          |
| 4. Factors hindering personal engagement in action research            | a) Instructional/ Institutional   | Time                     | 2                          | 20                          |                            | -                          |
|  |   | Support                  | 2                          | 6                           |                            | -                          |
|  |   | Research policy          | -                          | 2                           |                            | -                          |
|  |   | Attitude                 | -                          | 3                           |                            | -                          |
|  |   | Competence               | 3                          | 3                           |                            | -                          |
|  |   | Funding                  | 3                          | 2                           |                            | 2                          |
| 5. Factors facilitating engagement in research                         | a) Instructional/ Institutional<br>b) Personal                                  | Dissemination            | -                          | 2                           | -                          | 1                          |
|  |   | Time                     | 5                          | 19                          | 4                          | -                          |
|  |   | Support                  | -                          | 13                          | -                          | 2                          |
|  |   | Funding                  | 1                          | 2                           | 2                          | 1                          |
|  |   | Research Policy          | -                          | 1                           | -                          | -                          |
|  |   | Professional Development | 1                          | 3                           | -                          | 2                          |

Institutional changes at the colleges are considered key requirements, if the research agenda is to be implemented. This would suggest that at the institutional level, a research policy is required that would spearhead changes conducive to building a research culture.

### 3. Factors influencing a research culture

In exploring factors that influence/promote a research culture, a number of factors are identified, namely: instructional — support, time, funding, competence, workload, lecturers' engagement, research, students' engagement, research policy and personal — attitude. Several lecturers indicated that while the matter of doing research is an ongoing issue, not much had been done from a practical point of view, as evidenced in the following statements:

#### a) *Instructional/Institutional factors*

*"Heavy timetables, inflexible work hours, and onerous administrative tasks" (A2).*

*"There is talk about doing research, but lecturers are overwhelmed with work at the college" (B7).*

*"Research clinics and other fora" (C2).*

*"Currently there is much talk, but not much action" (D5).*

#### b) *Personal factors*

Participants noted that initiatives that would enhance the development of the research culture include; opportunities to attend conferences and workshops locally and internationally, support services to include resources such as software, textbooks, resource teams, reliable internet services and opportunities to share research experiences internally.

### 4. Factors hindering a personal engagement in action research

#### a) *Instructional/Institutional*

The factors identified as hindering personal engagement in action research include: support, funding, competence, attitude and research policy. The frequency of these observations are particularly poignant, as these reflect the difficulties of implementing strategies for cultivating a culture of research. As indicated in Table 1, time is considered the most dominant factor prohibiting such personal engagement.

*"Lack of time (A2).*

*"The teaching hours may prohibit lecturers from engaging in action research" (B13).*

*"The timetable does not facilitate this important development (C4).*

*"Better timetabling that is not spread across the work week, and less demand on lecturers to drive and participate in administrative and extra-curricular activities at my institution" (D6).*

The lack of time could be attributed to a failure on the part of the college administration to deal with this issue, as exemplified in the following statements:

*"There is a lack of clarity as to the vision of the college administration regarding research" (D3).*

*"...lack of urgency in the administration reducing contact teaching sessions" (D4).*

Another fundamental finding which emerged was the feeling that the college administration did not have a clear vision as to the place of research in the institution, which translated into two scenarios: the absence of an institutional research policy, or if such a policy existed, participants may not be aware of its existence or lack an understanding of it. This suggested that unless there was the existence of a research policy, lecturers' may not consider research to be an important activity, as issues such as the heavy teaching load and timetabling may not be addressed. As indicated in Table 1, a research policy should make provisions for the development of lecturers' competence, along with other supports to facilitate their engagement in research. Many lecturers mentioned the lack of:

*“resources such as educational databases and journals” (A2).*

*“resources, funding and support staff” (B20).*

*“administrative support and ...motivation” (C1).*

*“knowledge and skills on the part of lecturers to do research” (D2).*

## **Theme 5: Facilitation of research**

### **a) Instructional factors**

The issues surrounding time and support were mentioned as the major factors needed to facilitate research among lecturers. Twenty-eight participants stated that time was top priority if they were to engage in research.

*“Research becomes an “add-on” activity, as dedicated time is not assigned to the task” (A5).*

*“If I had scheduled time, I would be more inclined to complete research tasks.” (B17).*

*“More flexible teaching schedule that seeks to facilitate definite time given to do research” (C2).*

*“Adequate time for reading and conducting research” (D2).*

The matter of support was considered essential for fifteen participants, as highlighted by the following quotes:

*“I would be willing if I could get the time, support and resources needed to engage in the research process” (B5).*

Other areas identified included dissemination or research via funding, research policy and professional development.

*“... resources, both material and funding, in order to do research” (A4).*

*“...resources and support staff to navigate the process” (B20).*

*“... monetary — grants and publishers. Availability of sponsorships” (C4).*

*“I would greatly benefit from funding opportunities within the institution for more conference attendance” (D6).*

### **b) Personal factors**

*Six participants indicated the need for professional development to enhance growth and development.*

## DISCUSSION

The findings reveal that most lecturers believe that active engagement in research leads to significant improvement in their personal and professional lives. Notwithstanding, these goals remain unattainable, due to the numerous instructional/institutional factors such as time, material resources, research policy and funding which are often lacking. These findings are closely aligned to the literature review. Fowler and Procter (2007) in their analysis of supportive research environments, indicated that early and mid-career researchers may fail to thrive in environments in which isolation, heavy teaching loads and lack of dedicated time for research are contributory factors in creating restrictive learning.

Traditionally, teachers' colleges focus on teaching, thus many lecturers do not see themselves as researchers (Cheetham, 2007). This may have contributed to lecturers' non-engagement in research and development of their research competence. Gibson (2009) purported that research and development is as much a matter of values and priorities as of operational planning...yet it must be supported with other aspects of institutional and operational planning, such as time dedicated to research and the provision of training. It is therefore very obvious that research is quite time-consuming, and requires close attention if colleges are to fulfill their research mandate.

### RESEARCH QUESTION 4:

TO WHAT EXTENT ARE LECTURERS INVOLVED IN RESEARCH?

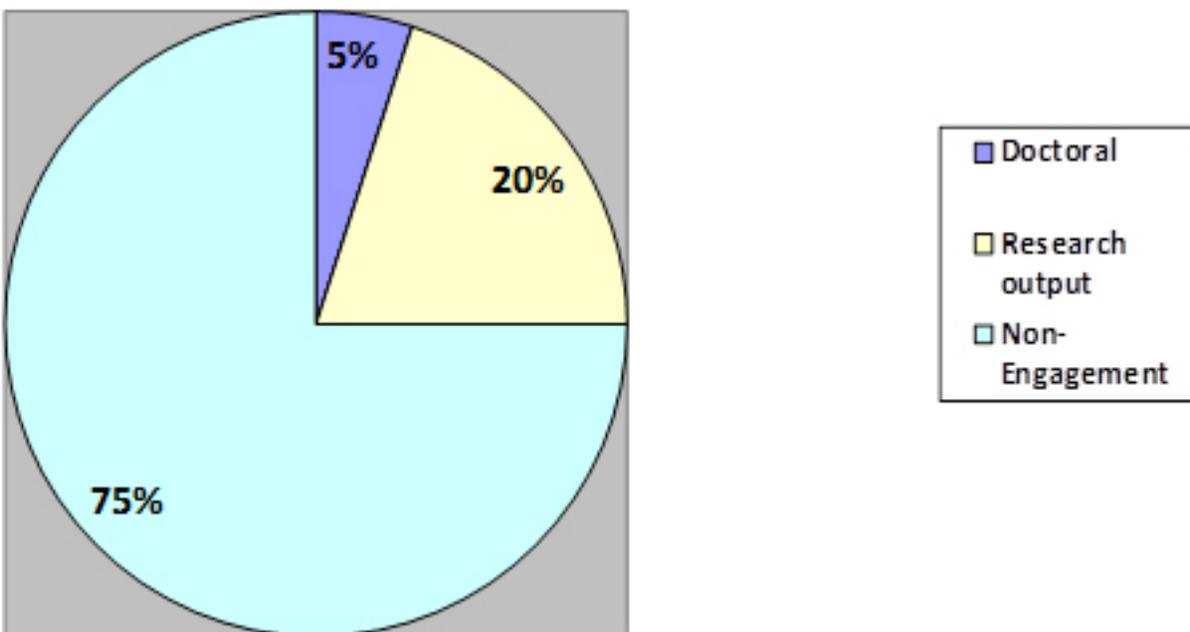


Figure 1 indicates that of the 38 lecturers surveyed, 30 (74%) are currently not engaged in research, although some of these participants considered their teaching of research methodology courses encouraging, and facilitating students in conducting action research as engagement in research. Another 8 (20%) are currently writing a scholarly article or have done some form of research exchange. Surprisingly, only 2 (5%) have pursued doctoral study which provided research engagement.

These viewpoints support the information gleaned from the themes in Table 1, where lack of time and heavy work schedules counted as factors hindering personal engagement in research. Conversely, those who recently engaged or are engaging in advanced studies proffered the view that they were intrinsically motivated and eager to continue the research process. According to Murray (2002), Murray & Male (2005), and Stryker (2007), research is seen as critical to professional development among individuals with advanced degrees or currently pursuing doctoral studies.

*“Working on a paper to make a presentation during the summer of 2016” (C2).*

*“As an early career scholar, I am benefitting from high impact research outputs (conference papers and article publication) completed during my PhD. The aim for me is to continue this momentum into seasoned academic life. I am aiming to do at least two research outputs each year” (D6).*

## **RESEARCH QUESTION 5:**

### **WHAT ARE STUDENTS' ATTITUDES TOWARD CONDUCTING ACTION RESEARCH AS A PART OF THEIR CURRICULUM PROGRAM REQUIREMENTS?**

Results of the survey were disaggregated to present a true picture of student teachers' attitude toward action research on each campus.

Eleven participants completed the survey. The findings reveal that only 9% (n=1) of student teachers agreed that they have a good understanding of the procedures involved in doing action research; 18% (n=2) disagreed, while 73% (n=8) remained neutral. In responding to how adequately the introductory course prepared them to conduct action research in schools, 18% (n=2) agreed that preparation was adequate; 45% (n=5) disagreed, and 27% (n=3) indicated neutrality. As it relates to action research being the most challenging course in the curriculum, 54% (6) strongly agreed, while 9% (1) expressed disagreement and uncertainty.

In responding to item 4, 45% (n=5) believed that lectures provided adequate guidance for their action research; 9% (n=1) strongly dissented, and 45% (n=4) cited uncertainty. The responses to item 5 seemed to support this position, as only 36% (n=4) agreed that they were satisfied with the level of research supervision received during teaching practice; 27% (n=3) indicated disagreement, and 27% (n=3) registered uncertainty. Item 6 indicated a similar trend in terms of the level of supervision received during the completion of their research report; 36% (n=4) expressed satisfaction; 26% (n=4) reported dissatisfaction, and 27% (n=3) remained undecided.

It is therefore not surprising that 36% (n=4) of student teachers felt their exposure to action research has equipped them with the necessary skills to address problems in the classroom, while 18% (n=2) disagreed and 45% (n=5) remained neutral.

| <b>Survey Items</b>   | <b>SA%</b> | <b>A%</b> | <b>N%</b> | <b>D%</b> | <b>SD%</b> | <b>NR%</b> |
|---|------------|-----------|-----------|-----------|------------|------------|
| 1. Good understanding of action research procedures   | 0          | 9         | 73        | 18        | 0          |            |
| 2. Introductory research course adequately prepared me for action research                            | 0          | 18        | 27        | 45        | 0          | 1          |
| 3 Action research is the most challenging course  | 55         | 9         | 9         | 9         | 9          | 1          |
| 4. Adequate guidance was provided by supervisors to aid understanding of procedure for doing research | 9          | 36        | 45        | 0         | 9          |            |
| 5. Satisfied with the level of research supervision during the practicum                              | 0          | 36        | 27        | 18        | 9          | 1          |
| 6. Satisfied with the level of research supervision during the completion of the research report      | 0          | 36        | 27        | 27        | 9          |            |
| 7. Action research has provided necessary skills to address teaching/learning problems                | 9          | 27        | 45        | 9         | 9          |            |
| <b>N=11</b>   |            |           |           |           |            |            |

Examination of data obtained from student teachers' survey reveal that 36% (n = 43) of student teachers believed they had a good understanding of research, while 25% (n=29) disagreed and the remaining 40% (n=46) expressed uncertainty about their level of understanding. In expressing how they felt about the introductory research course, 37% (n= 44) indicated that the course adequately prepared them to conduct action research, with an equal proportion expressing the opposite. Neutrality was expressed by 25% (n=30). This general lack of comfort with action research procedures may be due to the fact that 81% (n=96) of the participants indicated that they found action research to be the most challenging course in the B. Ed. Program. This may have contributed to the stress, confusion and frustration some students reported they felt in their responses to the open-ended question focused on their feelings about action research as a part of the B. Ed. Program.

With regards to supervision, 55% (65) of the student teachers felt that the guidance provided by lecturers aided their understanding of research procedures. However, only 33% (n=39) and 48% (n=56) of the participants were satisfied with the levels of research supervision during practicum and completion of the research report, respectively. Levels of dissatisfaction with the quality of supervision were evident in student teachers' disagreeing and their inability to say definitively whether or not the supervision process was helpful during the practicum [45% (n=53) and 22% (n=27) respectively] or during completion of the report [27% (n=33) and 24.6% (n=29) respectively].

| <b>TABLE 3. STUDENT TEACHERS ATTITUDES TOWARD ACTION RESEARCH AT COLLEGE B</b>                        |     |    |    |    |     |     |
|---|-----|----|----|----|-----|-----|
| Survey Items  | SA% | A% | N% | D% | SD% | NR% |
| 1. Good understanding of action research procedures   | 5   | 31 | 40 | 18 | 7   |     |
| 2. Introductory research course adequately prepared me for action research                            | 13  | 25 | 25 | 26 | 11  |     |
| 3 Action research is the most challenging course  | 67  | 14 | 12 | 5  | 2   | 1   |
| 4. Adequate guidance was provided by supervisors to aid understanding of procedure for doing research | 21  | 34 | 30 | 12 | 5   |     |
| 5. Satisfied with the level of research supervision during the practicum                              | 8   | 25 | 22 | 27 | 18  |     |
| 6. Satisfied with the level of research supervision during the completion of the research report      | 12  | 37 | 25 | 18 | 9   | 1   |
| 7. Action research has provided necessary skills to address teaching/learning problems                | 12  | 37 | 36 | 9  | 5   |     |
| <b>N=118</b>  |     |    |    |    |     |     |
| <b>Percentages rounded off to the nearest whole number.</b>   |     |    |    |    |     |     |

Careful scrutiny of data indicates that 60% (n=12) of the student teachers reported having a good understanding of the procedures involved in doing action research, while 5% (1) opposed the view and another 35% (n=7) remained neutral. Seventy percent (n=13) believed that the introductory research course has adequately prepared them to conduct action research in schools, while 10% (n=2) disagreed and 25% (n=5) indicated uncertainty. However, there was overwhelming consensus that action research was the most challenging course — as indicated by 90% (n=18) of student teachers with a mere 5% (n=1) finding of disagreement and uncertainty.

Interestingly, the majority of student teachers — 80% (n=16) — believed that lecturers who supervised the action research provided adequate guidance which helped them to understand the procedure. Five percent (n=1) rejected the notion, while 15% (n=3) cited neutrality. It seemed this level of guidance was not transcended during the supervision of the fourth year practicum, as 20% (n=4) expressed dissatisfaction as it relates to their level of satisfaction with supervision during the completion of the research report; 50% (n=10) expressed satisfaction, and 30% (n=6) indicated uncertainty.

Overall, student teachers registered a positive attitude toward action research. This was further conveyed through their responses to item seven, where more than half — 70% (n=14) concurred that their exposure to action research has equipped them with the necessary skills to address problems in the teaching/learning environment. It must be noted that 30% (n=6) remained neutral.

| <b>Survey Items</b>   | <b>SA%</b> | <b>A%</b> | <b>N%</b> | <b>D%</b> | <b>SD%</b> | <b>NR%</b> |
|---|------------|-----------|-----------|-----------|------------|------------|
| 1. Good understanding of action research procedures   | 10         | 50        | 35        | 5         | 0          |            |
| 2. Introductory research course adequately prepared me for action research                            | 5          | 60        | 25        | 10        | 0          |            |
| 3 Action research is the most challenging course  | 55         | 35        | 5         | 5         | 0          |            |
| 4. Adequate guidance was provided by supervisors to aid understanding of procedure for doing research | 20         | 60        | 15        | 5         | 0          |            |
| 5. Satisfied with the level of research supervision during the practicum                              | 0          | 0         | 0         | 15        | 5          |            |
| 6. Satisfied with the level of research supervision during the completion of the research report      | 0          | 50        | 30        | 15        | 5          |            |
| 7. Action research has provided necessary skills to address teaching/learning problems                | 20         | 50        | 30        | 0         | 0          |            |
| <b>N=20</b>   |            |           |           |           |            |            |

Findings show that the majority of students agreed that they had a good understanding of the procedures involved in doing action research ( $n=15$ ), with others declaring that they strongly agreed ( $n=8$ ). This showed a strong measure of satisfaction regarding students' understanding of the procedures of research. These findings can be correlated with those indicating that students felt they were adequately prepared to do action research (*strongly agreed*,  $n=8$ ; *agreed*,  $n=14$ ).

However, in comparison to other courses in the 4<sup>th</sup> year B.Ed program, findings reveal the challenges student experienced in doing action research as opposed to other courses. For the most part, students have grasped the procedures for doing action research, but there is an indication that they found the course to be challenging when they compared it with other courses that they were doing.

In relation to the research supervision received during the practicum/teaching experience, (which would have a bearing on lecturers' willingness to become involved in research activity), findings showed that 7 respondents ( $n=7$ ) strongly agreed; while most respondents ( $n=12$ ) agreed that they were satisfied with the level of research supervision received. Only 4 respondents ( $n=4$ ) strongly disagreed or disagreed with the statement. Likewise, findings indicated a high level of satisfaction expressed regarding supervision received from lecturers' on student research projects.

| <b>TABLE 5. STUDENT TEACHERS ATTITUDES TOWARD ACTION RESEARCH AT COLLEGE D</b>                        |            |           |           |           |            |            |
|---|------------|-----------|-----------|-----------|------------|------------|
| <b>Survey Items</b>   | <b>SA%</b> | <b>A%</b> | <b>N%</b> | <b>D%</b> | <b>SD%</b> | <b>NR%</b> |
| 1. Good understanding of action research procedures   | 35         | 65        | 0         | 0         | 0          |            |
| 2. Introductory research course adequately prepared me for action research                            | 35         | 61        | 0         | 4         | 0          |            |
| 3 Action research is the most challenging course  | 35         | 43        | 0         | 13        | 9          |            |
| 4. Adequate guidance was provided by supervisors to aid understanding of procedure for doing research | 30         | 65        | 0         | 4         | 0          |            |
| 5. Satisfied with the level of research supervision during the practicum                              | 35         | 52        | 0         | 4         | 13         |            |
| 6. Satisfied with the level of research supervision during the completion of the research report      | 52         | 48        | 0         | 0         | 0          |            |
| 7. Action research has provided necessary skills to address teaching/learning problems                | 35         | 65        | 0         | 0         | 0          |            |
| <b>N=23</b>   |            |           |           |           |            |            |

## DISCUSSION

These findings can be aligned to the literature, which indicates that the quality of teaching and supervision can positively or negatively impact students’ perceptions about doing action research (Russell, 2000).

This favorable outlook towards action research was translated further in the final question, where the majority of students felt that action research provided them with the necessary skills to address problems in the teaching/learning environment. This could have implications regarding the utilization of action research beyond the teacher training experience (Worrell, 2006).

Evidence from the findings indicates that student teachers’ engagement in the research process has illuminated their responsiveness to action research, although they indicated that they experienced challenges because of the difficulty level. Additionally, their satisfaction with the quality of lecturers’ supervision was appreciated, and the honed skills are transferrable to other areas of their development.

## RECOMMENDATIONS

1. A need for better supervision of the research projects by staff. Student teachers need to contact their supervisors regularly to complete the research project in stages.
2. The availability of reading materials and information for doing research is critical. Linking with the University of the West Indies Library is perhaps a good way to access more resources. This is endorsed in the literature review, as Gibson (2009) suggested that academic libraries are needed to maintain a healthy research culture and build strong community networks.
3. There needs to be better organization of the process of data collection at the schools in which student teachers' conduct their research, and time allowed for data collection.
4. Reorganization and revamping of the research courses (Introduction to Educational Research and Applied Research: Theory and Practice). There needs to be greater clarity regarding the type/nature of research that student-teachers should engage in during their teacher training: research for beginning practitioners versus more robust and rigorous research. This suggests a need for the review of the requirements of research courses, making them more manageable for students, thus facilitating greater interest in and understanding of the research process. Consequently, we suggest simplifying the current course, with emphasis being given to the procedures for doing action research to make them more relevant and understandable. This will increase the likelihood of student teachers engaging in action research as beginning teachers.
5. The implementation of one hour weekly sessions, where lecturers' gather in small groups of three to five persons could result in tremendous gains in capacity-building on the journey of becoming lifelong learners, as each person contributes their knowledge of the process and together they learn the intricacies of the details in an environment where they can find support in times of both failure and success.
6. There needs to be clarity about the nature and frequency of the research that teacher educators are expected to conduct — whether or not lecturers are encouraged to engage in research because of the potential impact it could have on their practice, or whether it is a requirement for some other purpose, such as employability or both. This speaks to the need for a clear policy at the Ministry of Education, TCJ and college levels. This has been confirmed by Judkins, McCrone & Inniss (2014) in the literature review.
7. The provision of scheduled time on lecturers' timetables to engage in research consultations with colleagues and to conduct action and other research. This will strengthen the research skills among lecturers, thereby improving capacity-building within each college (Maguire, 2000, Murray, 2007, Sikes, 2006).

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# Teaching Strategies that could Improve Understanding of Common Fractions: Information from a Grade 4 Class

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## ABSTRACT

The essence of teaching should be to provide activities and experiences that will enable learners to develop understanding. Learners in grade four are passing through the concrete operational stage of development. They typically require concrete objects and direct experiences in order to understand and reason. This paper interrogates the use of manipulative models, pictures/diagrams, written symbols and oral language, and real-world problems in the developing understanding of common fractions. The study was conducted with grade 4 learners and their teachers. The teachers were observed for instances of instruction wherein the different modes for using the different manipulatives that enhance understanding of fractions occurred. The learners' books, class exercises and test scripts were also analysed inductively for errors related to fractions and the use of fractions. Learners were also interviewed in order to authenticate the analysis of their work and the root of the errors. Data made up of learners test scripts, class exercises and homework was analysed inductively, as well as deductively by using the predetermined categories and classes of errors from the literature.

**Keywords:** fractions, manipulatives, modes of representation, teacher knowledge bases

## INTRODUCTION

As learners get exposed to various numbers their numerical vocabulary expands from whole numbers to fractions. Common fraction concepts are among the most complex and important mathematical ideas children encounter during their primary school years (Behr, Lesh, Post & Silver, 1983; Charalambous & Pitta-Pantazi, 2005). Teaching requires one to consider how the understanding of learners should expand and change (Ball & Bass, 2003). When teaching fractions, an active and direct method of instruction is necessary for learners to enhance their informal understanding and to change their informal understanding into a formal network of concepts and procedures (Kilpatrick, Swafford & Findell, 2002).

## STATEMENT OF THE PROBLEM

Learners' weak or non-existing understanding of common fraction concepts, compounded with a fragile comprehension of symbolic representation, leads to relying on whole number concepts when solving problems involving fractions (Lukhele, Murray, & Olivier, 1999). If too much time is spent during the intermediate phase on teaching procedures to manipulate fractions, while too little time is spent on developing concepts, the acquisition of conceptual knowledge will remain deficient (Moss & Case, 1999). For learners to have conceptual understanding of fractions as numbers they need to acquire the

ability to represent numbers using words, models, diagrams and symbols, so as to be able to make the connections between the representations (Cathcart, Pothier, Vance & Bezuk, 2003). Teachers should place more emphasis on conceptual understanding rather than on providing different algorithms to execute operations with fractions (Charalambous & Pitta-Pantazi, 2005).

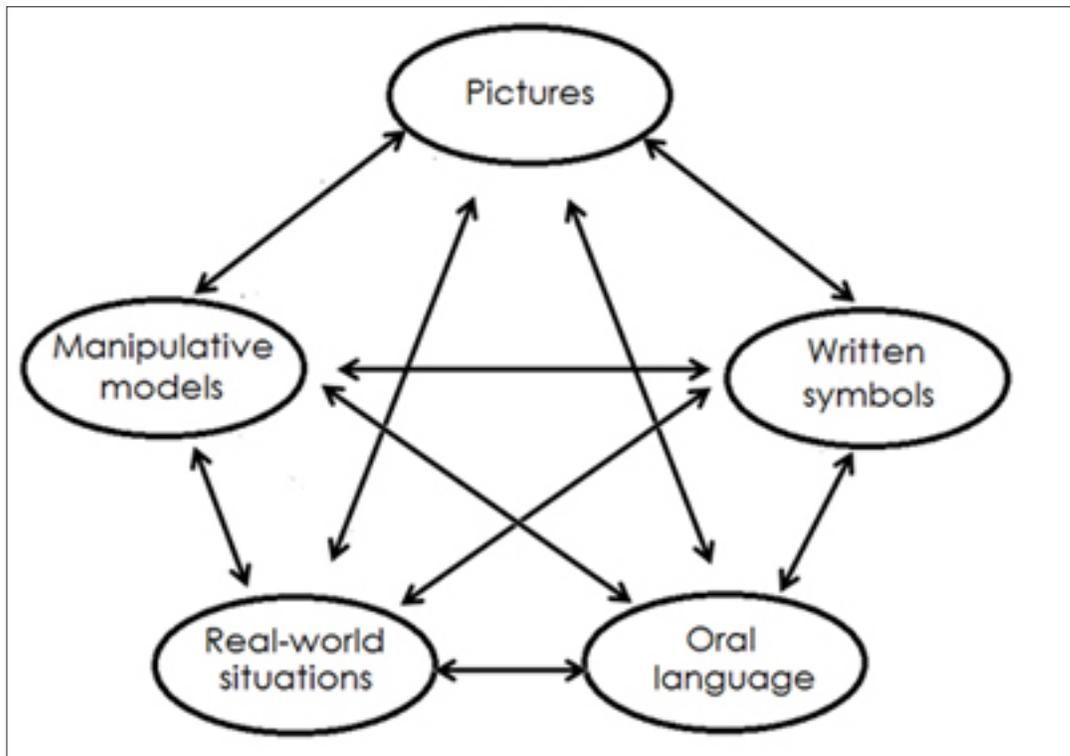
### **THE NEED FOR CONCEPTUAL AND PROCEDURAL KNOWLEDGE**

For learners to have mathematical knowledge they need to establish a relationship between conceptual and procedural knowledge. This will give them a sound knowledge base that will aid in understanding fractions (Hiebert & Lefevre, 1986). One of the possible reasons that learners struggle to understand fractions could be because lessons are too focused on procedures and memorizing rules, rather than on developing conceptual foundations prior to skill building (Sherman, Richardson & Yard, 2005). Procedural knowledge relies completely on memory, which may be inadequate in solving problems involving fractions, due to the lack of connection between conceptual and procedural knowledge. This could lead to errors in calculation and conception. Learners who only have procedural knowledge have limited means of detecting and correcting errors and giving reasonable answers (Masingila, 2006). Rote learning is not linked to previous knowledge and is the cause of mistakes in mathematics, as learners try to recall partially remembered, and/or distorted, rules (Olivier, 1989). During rote learning, pieces of knowledge are stored as isolated bits of information and do not become part of the conceptual structure. However, rote learning can become conceptual knowledge when the isolated pieces of knowledge become part of the conceptual knowledge structure (Hiebert & Lefevre, 1986).

From a constructivist point of view learners will construct their own knowledge. While the teacher uses language to explain mathematical symbols and mathematical models, learners need to map different elements onto each other to understand concepts. For learners to develop an understanding of fractions, they must develop an understanding of the conventional models and representations used, as well as the ideas these models and representations serve to capture. The development of conceptual understanding involves seeing the connections between concepts and procedures, and being able to apply mathematical concepts and procedures in a variety of contexts (Wong & Evans, 2006).

### **TEACHING WITH THE PURPOSE OF BUILDING UNDERSTANDING**

The essence of teaching should be to provide activities and experiences that will enable learners to develop understanding. Teachers may use different mathematical models (for example, part-whole models or number lines) to illuminate different mathematical concepts. Learners exhibit understanding through application, noting relationships, transformations and transfers. These models are supported by a representational system. A variety of representations and opportunities for learners to make translation between modes can improve understanding. Building relationships between representations will happen when a learner listens to the problem (spoken language), represents it with blocks (concrete objects), and writes a response on paper (pictures and or written symbols) (Cathcart, Pothier, Vance & Bezuk, 2003; Wong & Evans, 2008).



**Figure 1.** Modes of representation that could improve learners' understanding of fractions (Adapted from Cathcart et al., 2003:28)

### Misconceptions

Misconceptions can be defined as the incorrect understanding of mathematical concepts. These are specifically the underlying conceptual structures that explain why a learner might produce a particular error or set of errors. Misconceptions come about through learners' over- or under-generalization, or an alternative conception of the situation, and can be as a result of earlier learning. The result of misconceptions is the tendency to produce wrong answers, the arguments that lead to the wrong answers can be explained, and the same error will be made over and over again. Misconceptions make sense when understood in relation to the learner's current conceptual system, which is usually a more limited version of a mature conceptual system (Chambers, 2008; Brodie, 2005; Drews, 2005).

### Concrete operational stage of development and the use of manipulative models

Mathematical knowledge starts at a concrete level and advances through a semi-concrete level to the abstract level, on which the learners are able to work without relying on some form of concrete apparatus. All learners will not reach the abstract level at the same time and some never will (Dednam, 2007). Because of the abstract nature of mathematics, the use of concrete objects and manipulatives can contribute to the development of understanding (Baig & Halai, 2006).

In the concrete operational phase learners can reason, but their ability to reason is based on tangible objects and direct experiences. They learn mathematics by abstracting from their concrete experiences (Baig & Halai, 2006, Reys, Lindquist, Lambdin, Smith & Suydam, 2001). Manipulative materials and models should be available as long as learners find it helpful. Learners learn better when they have a meaningful context for mathematical knowledge and understand the fundamental relationships associated with the knowledge (Reys et al., 2001). Working with concrete objects can help learners deepen their understanding of operations (Baig & Halai, 2006).

There is no single manipulative aid that is best for all children and for all rational-number situations. A concrete model that is meaningful to one child, in one situation, may not be meaningful to another child in the same situation; the same concrete model might not be meaningful to the same child in a different situation (Behr, Lesh, Post & Silver, 1983).

One of the biggest challenges when using manipulatives is to facilitate learners' ability to transfer what they do with the manipulatives to their procedural and conceptual understanding (Suh, 2007; Ojose, 2008). When planning a lesson where manipulatives will be used, the teacher must ensure that:

- the manipulatives chosen support the lesson's objectives;
- learners have been oriented to the manipulatives and classroom procedures;
- lessons involve the active participation of each child; and
- lesson plans include procedures that would develop reasoning skills (Cathcart, Pothier, Vance & Bezuk, 2003).

Learners tend to think the manipulations they do with manipulatives are one way of finding a solution and pencil-and-paper maths is entirely separate (Ojose, 2008).

Developmental activities with concrete representations of fraction quantities help learners to progress from thinking of fractions as "parts of things" to understanding fractions as numbers with a specific location on a number line, and to progress from the concrete representations to recording these on paper. The work learners do should include problems with part-whole, measurement, part-of-a-set interpretations and later quotient operator and ratio interpretations (Cathcart et al., 2003). Pre-partitioned manipulatives can lead to misconceptions, as each of the pieces can be seen as a whole when regarded on its own (Van Niekirk, Newstead, Murray & Olivier, 1999).

### **Drawing/Diagrams**

The use of diagrams to teach and learn fractions has received positive reviews, because diagram drawings made by learners help them to represent and connect pieces of information, as well as to conceptualize the structure of the problem and the basis of the solution (Diezmann, 2002). Mudaly (2010) asserts that diagrammatic representation of fractions helps learners to construct meaning for themselves. It is, however, important for the teacher to remember that pictorial representations and diagrams may also lead to misconceptions. Although the learners might be able to shade the correct fraction, their understanding of fractions may not be principled and might be based on remembering images, for example, a learner who remembers a quarter as a picture of a quarter of a circle (Ball, 1993). The use of a representational context is never perfect and requires knowledge and skill from the teacher, because when a geometric

representation is used to illustrate a fraction it only represents one of several meanings of fractions (Ball, 1993). Teachers need to make the connection between concrete representations and the associated symbols to help learners make connections (Sun & Kulm, 2003).

### **Use of language to improve understanding**

According to Vygotsky's theory, learning takes place because of mediation and one of the mediatory tools is language. The mediator (teacher) uses the tools to facilitate the learning process externally, the learner needs to internalise what is taught to be able to construct and understand a concept (Hall, 2007). Teachers use language to explain the links between mathematical symbols and mathematical models — to enable learners to map different elements onto each other and construct understanding of the explained ideas and concepts (Wong & Evans, 2008). Written language and verbal language play important roles in helping learners to transition from concrete to symbolic representation. Learners need time to describe what they do with the concrete models before they will be able to use symbols to meaningfully record their work (Cramer, Wyberg & Leavitt, 2008).

When teachers refer to the fraction — for instance, two-thirds as “two over three” instead of “two out of three”, the attention is focussed on how two-thirds is written symbolically, rather than on the quantity referred to by the number. With this language learners tend to view fractions as two independent whole numbers separated by a bar. When the language used describes the symbols, the teacher must teach rules to coordinate the connection of one notation to another and one procedure to another (Boulet, 2007). Questions can be used to improve teaching and learning through giving learners the opportunity to explain their thinking while the teacher determines what learners know or do not know. By encouraging learners to think about their work, and providing justification, learning and understanding is promoted (Baig & Halai, 2006). Questions should be used to develop and enhance learner understanding, rather than to find the correct answer (Reys et al., 2001; Drews, 2006). Effective questioning during the concrete operational stage can help learners understand the characteristics of objects (Ojose, 2008). Questions to clarify understanding can lead to discussion and can prevent entrenched misconceptions (Swan, 2004). Learners' understanding of the underlying mathematical ideas can be improved by cooperatively talking about ideas through the responses they provide (Meira, 1998; Cramer et al., 2008).

## **THE USE OF MATHEMATICS IN CONTEXT TO IMPROVE THE CONCEPTUAL UNDERSTANDING OF COMMON FRACTIONS**

In order to enhance learners' informal understanding of common fractions and for them to be able to change their informal understanding to a formal network of concepts and procedures, a more active and direct method of instruction and relevant learning experiences is necessary (Kilpatrick et al., 2002). Knowledge that is free of a specific context becomes more abstract (Hiebert & Lefevre, 1986). Learners find it easier to do calculations with fractions if they are presented as a realistic problem (Kilpatrick et al., 2002). When problems are posed in real life situations, learners can draw on their informal knowledge to solve them. Although informal knowledge is unrelated to knowledge of mathematical symbols and procedures, it can be used as a basis for developing mathematical symbols and procedures (Mack, 1990).

## METHODOLOGY AND DATA ANALYSIS

To investigate the modes of representation that are useful for enhancing the understanding and learning of fractions, lessons were observed and workbooks were reviewed for learners' errors. Teachers were interviewed and so were some learners. The following were the research questions: *What modes of representation do teachers use to enhance grade 4 learners' understanding of fractions? What are the most common misconceptions and the associated errors that learners display when solving fractional problems using these modes of representation?* Eight lessons were observed in which different modes of representation were used by the teacher. Workbooks and assessment scripts of fifteen learners in grade four were used to identify their response to instructions that hinged on modes of representation for teaching fractions and the mistakes made by learners. Each of these learners was interviewed twice. The modes of representation the learners found useful and which enabled them to understand common fraction concepts as well as their misconceptions were identified during the interviews. The learners' responses to the questionnaire were also linked to their answers on the tasks on fractions.

### Lesson observation and analysing of observation

Even though several lessons were observed, this study hinges on the eight lessons that focused particularly on the use of representations for teaching common fractions.

The observations were conducted as non-participant observations, to explore issues that revealed more about the data acquired through interviews and from artefacts. What was observed was the researcher's version of what is out there, and is guided by the purpose of the research. The researchers focused on certain aspects — the field notes and video recordings reflected this focus. The observations were conducted twice: first by direct contact with the naturally occurring events, and then by observation through the video recordings. The actions were interpreted twice: through interpretation of the natural setting, and through the text created from the observation (Henning, Van Rensburg and Smit, 2004).

Themes or topics can be identified from the literature and data can then be searched for these themes or topics — this is deductive analysis (Luneta, 2013; Taylor-Powell & Renner, 2003). From the literature review we identified five themes, namely:

- the use of oral language (mathematically correct terminology),
- written symbols,
- manipulative models,
- real world situations and
- the use of pictures or diagrams.

An observation schedule was developed and used in the lesson observation (See Table 1).

## INTERVIEWS

A sample of 15 learners in grade four took part in the study and were interviewed. The learners were purposefully sampled according to their ability, 5 learners were high achievers whose marks in mathematics ranged from 75 to 100%, 5 consisted of a middle group whose marks ranged from 55 to 74% and the remainder were classified as the lower group with marks from 54% and below. The learners'

workbooks were analysed to identify how they represented fractions as well as the mistakes they made when working with the modes of representation used in the lessons. The modes of representation and mistakes were used to inform the questions for the interviews. Two interviews were conducted with each of the participants. The main purpose of the first interview was to identify the strategies the learners found useful and to identify misconceptions that existed. Before the second interview more modes of representation, such as diagram drawing were used to improve understanding of problematic concepts identified during the first interview. The interviews were video recorded and then transcribed, reduced and analysed inductively.

| <b>Theme</b>         | <b>Teacher</b>   | <b>Learners</b>  |
|----------------------|--|--|
| Oral language        | <ul style="list-style-type: none"> <li>• Use half, quarter</li> <li>• Correct learners not one over two, but half</li> <li>• Denominator indication of number of pieces and size of pieces</li> <li>• Lead learners to discover through sharing of fizzers and writing of symbols</li> </ul> | <ul style="list-style-type: none"> <li>• Learners use half but one over two once symbols are used</li> <li>• Learners to “discover” function of denominator</li> </ul> |
| Written symbols      | Symbols and fractions in words written on board  | Learners copy in their workbooks   |
| Manipulative models  | Use jelly tots and fizzers   | Learners use fizzers and jelly tots and divide into fractions  |
| Real world situation | Sharing  | Sharing  |
| Pictures/diagrams    | Draw diagrams with symbols and words representing the division with sweets on board  | Learners copy in workbooks   |

The teacher used the modes of representation when teaching the observed lesson. The effectiveness of the teaching was measured by learner participation, as well as their responses during the interviews and the correct responses they provided in the class exercises, as well as their tests. The learners’ informal knowledge was used by providing them with sweets (manipulatives) to share (viz. divide) among themselves and link it to formal knowledge by using oral language, fraction symbols and diagrams. First the learners shared fizzers (continuous quantity) in pairs where the fizzer represented the unit, and then they shared jelly tots where six jelly tots were a unit (set of discrete objects). The learners had to draw the division of the fizzers and write down the fractions represented by each part of the diagram, which was later also represented on a fraction wall. The jelly tots’ sharing in groups was also represented with diagrams and symbols.

The teacher used terminology like halves, quarters, eighths etc. Questions were asked to clarify understanding, for example: “What fraction will each one have if one fizzer is shared equally between two learners?” “What do we call the fraction if we divide the fizzer in four equal pieces?” “How many quarters will you need to make one fizzer?” “How many quarter fizzers will be the same as half of a fizzer?”

As the learners divided the fizzers the teacher was dividing a rectangle on the chalkboard to indicate the divisions. They had to copy it in their workbooks as diagrammatic representations. She brought it to their attention that no matter how many times the fizzer is divided it stays the same initial fizzer (part-whole interpretation). Learners were asked how the different fractions can be represented symbolically and what a denominator is. The teacher emphasized that the number of pieces the fizzer was divided into represented the denominator, and also that the size of the pieces will become smaller if they are divided further.

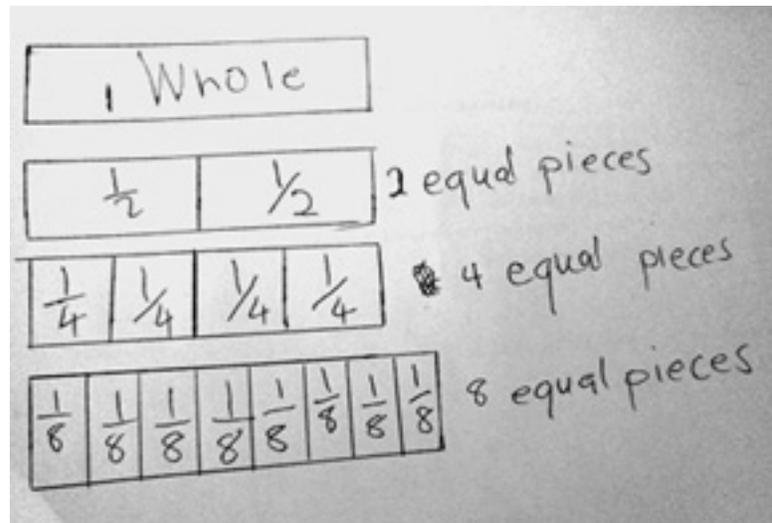


Figure 2: Representation of fizzer division

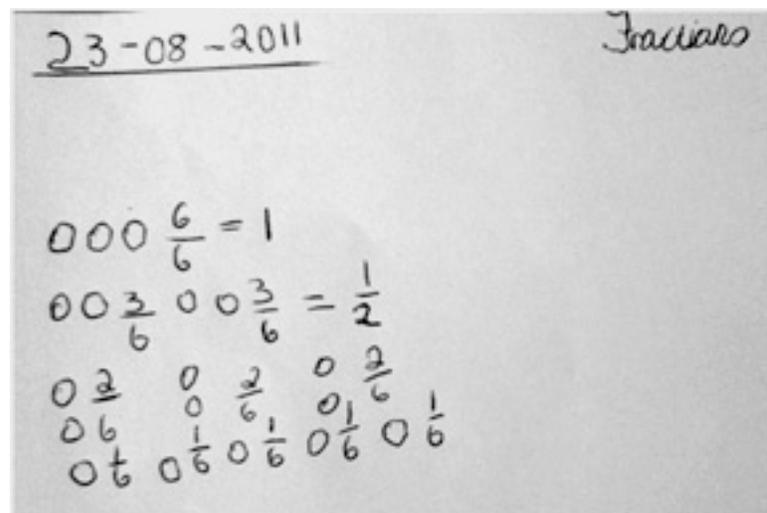


Figure 3: Representation of jelly tot division

The teacher also used a worksheet with geometric figures (continuous quantity) — some were pre-divided and the learners had to divide the others. On one worksheet (Figure 3) language and symbols were used with the diagrammatic representation. On another worksheet (Figure 4) objects such as apples and marbles were divided (set of discrete objects), and the learners had to write down the fraction represented by a fraction of the whole.

## FIRST INTERVIEW

In response to the question with concrete or visual representations, the learners said the following in response to what they found useful and enhanced their understanding of fractions:

Participant A (preferred the fraction wall and responded): *“I could see the size of the fractions on the fraction wall.”*

Participant B responded: *“I preferred the fizzers ... I could see how much we got and if we put it together it will be one again. With the jelly tots I could see to divide them in groups.”*

Participant C expressed the opinion: *“The jelly tots and fizzers and pictures helped me to understand fractions better.”*

Participant D: *“I could add the fractions on the number line.”*

Participant E: *The jelly tots and fizzers helped me ... it is like sharing.”*

## Learners’ understanding and misconceptions of common fractions, as identified during their first interview

The learners’ experiences in class were reflected in the definitions of fractions that they gave. *“When you divide something”*; *“When you cut a pizza in 8 pieces”*; *“Sharing equally”*; *“Fractions are for sharing”* and *“Stuff that are equal”*.

The grade four learners had the following definition of a denominator in the symbolic presentation of fractions: *“How many parts are there”*; *“It tells me about the fraction ... how many people get”*; *“It tells you how many pieces there are”*; *“In how many pieces something was broken”* and *“How many pieces”*.

To evaluate their understanding of the relative size of a fraction, learners were asked to compare fractions: Which is bigger — a half or a quarter of the same sized object? Twelve of the fifteen participants responded that quarters will be smaller, because it was *divided more times*. One of the learners over-generalized whole number knowledge and exhibited the misconception that a quarter will be bigger because four is bigger than two. This is a common misconception among learners who have not understood the concept of fractions and their denominators — that depending on the numerators, the larger denominators will not always mean a larger fraction.

24-05-2011

Fractions

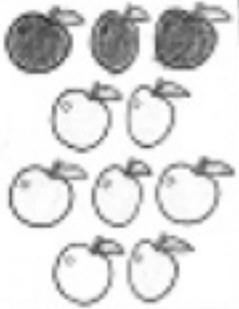
**Fractions**  
Count the number of apples.

Colour 3 apples red,  
Colour 6 apples green.

What fraction are red?  $\frac{3}{10}$  ✓

What fraction are green?  $\frac{6}{10}$  ✓

What fraction is not coloured in?  
 $\frac{1}{10}$  ✓



Count the number of marbles.

Colour 8 marbles blue,  
1 marble red and the rest yellow.

What fraction are blue?  $\frac{8}{12}$  ✓

What fraction are red?  $\frac{1}{12}$  ✓

What fraction are yellow?  $\frac{3}{12}$  ✓

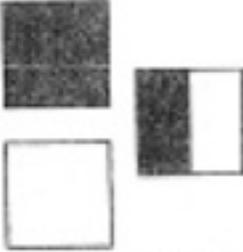


How many squares are there?  $\frac{3}{1}$

How many are coloured grey?  $\frac{1}{3}$  ✓

What is half of 3?  $\frac{1}{2}$

What fraction of the 3 squares is coloured grey?  $\frac{1}{3}$  ✓



63

201-04-11

|   |   |   |   |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

Figure 4. Worksheet: squares divided.

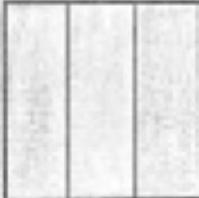
23-05-2011                      Fractions

---

**Fractions**



This square has been divided into 2 equal parts.  
 Each part is  $\frac{1}{2}$  of the whole.  
 Write  $\frac{1}{2}$  in each part.



This square has been divided into 3 equal parts.  
 Each part is  $\frac{1}{3}$  of the whole.  
 Write  $\frac{1}{3}$  in each part.



✓ This square has been divided into 4 equal parts.  
 Each part is  $\frac{1}{4}$  of the whole.  
 Write  $\frac{1}{4}$  in each part.



This square has been divided into 6 equal parts.  
 Each part is  $\frac{1}{6}$  of the whole.  
 Write  $\frac{1}{6}$  in each part.



Divide this square into 8 equal parts.  
 What fraction of the whole is each part?  
 $\frac{1}{8}$

|   |   |   |   |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

Figure 5. Worksheet: dividing groups.

## SECOND INTERVIEW

During the second interview, learners were presented with problems to be solved. Manipulatives such as fractional pieces, fraction walls and Cuisenaire rods were used. Learners were encouraged to use visual representations, such as diagrams, flow charts, tables and methods, including halving and doubling. The use of diagrams was encouraged as it actively engaged the learners in constructing meaning for themselves (Mudaly, 2010). Doubling and halving in tables were used in an attempt to connect their knowledge of whole numbers to fraction concepts. They were expected to explain their thinking. Problems and ideas from the series “Number Sense Workbook” by Brombacher and Associates, were used.

One of the participants from this class was presented with the following problem: “Mrs Faku needs one-third of a cup of nuts to make a muffin. If she has five cups of nuts how many muffins is she able to bake? (Adjusted from Number Sense Workbook 12, page 8) She used the following methods to calculate that she would be able to bake 15 muffins.

Another learner from this class was presented with the following problem: Four friends need to share five chocolate bars, how much chocolate will each friend get? Below is the learner’s diagrammatical representation of the problem (One and a quarter bar).

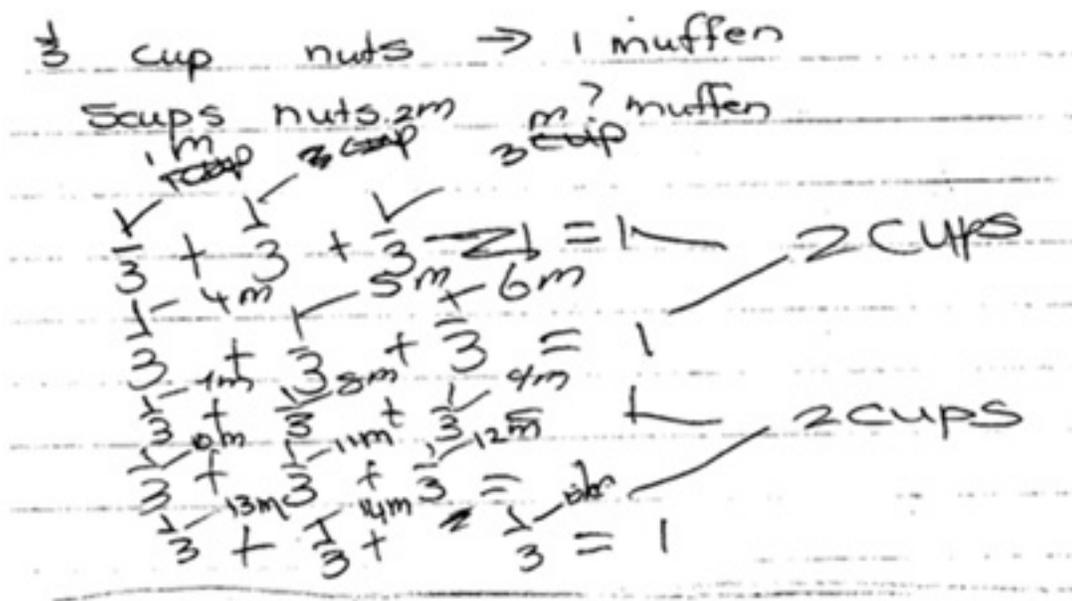
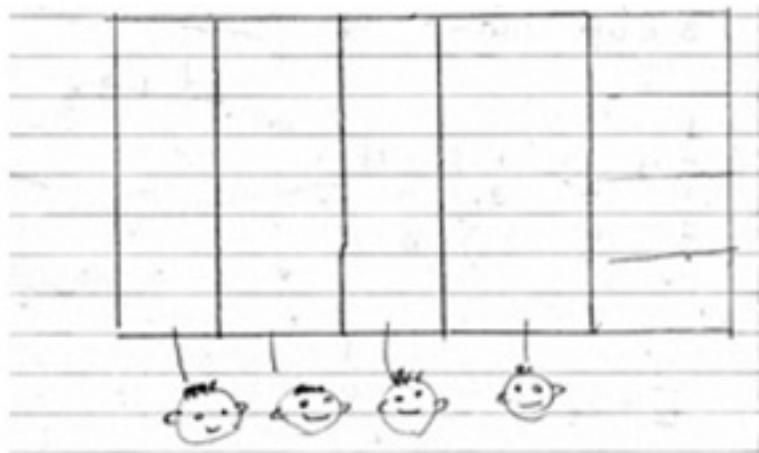


Figure 6. Learner’s solution for nut and muffin problem.



**Figure 7.** Learner’s diagrammatic solution.

## CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the modes of representation used by the teacher in a grade four class and to determine how this can enhance the understanding of basic common fraction concepts. In grade four different modes of presentation were integrated, the sharing of sweets is a realistic situation the learners are used to, combined with drawings/diagrams to help learners represent and connect pieces of information, the use of oral language and mathematical symbols all proved useful to the learner. The learners’ knowledge was reflected in the way they defined fractions, their understanding of the relative size of fractions, and their ability to solve problems involving common fractions. They understood that the denominator indicates the number of pieces, as well as the size of the pieces and the bigger the denominator the smaller the pieces.

The three groupings of students seemed to operate almost at the same level in terms of conceptual understanding of fractions by using the different modes of representation. The low achievers seemed more involved and learning increased when there were different representations of fractions rather than when represented in one way. Primary school teachers should be aware of the complexity of fractions and the modes of representation that can enhance the conceptual understanding of fractions by learners. Because of the cognitive development stage of primary school learners, manipulatives and diagrams are important to concretely and semi-concretely represent fraction ideas, using their informal knowledge to build their formal knowledge. Oral language should be used to clarify and define concepts, and make the links between mathematical symbols and mathematical models. Questions can be used to enhance conceptual understanding.

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# Teacher Education and Classroom Practice: The Perspectives of Recent Graduates of a Teacher Education Programme

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## ABSTRACT

A current discourse in the field of teacher education today is the effectiveness of teacher education programmes. In light of this, this research, employing a qualitative case study design, seeks to explore whether the skills student teachers acquire as part of their initial teacher education programme — the Diploma in Education (Dip Ed) — are transferred to the classroom setting. Four core teaching skills — lesson planning, classroom management, use of technology and assessment — were the focus of the research. Data was gathered through a focus group interview and an open-ended statement questionnaire. Six participants, recent graduates of the programme during the period 2013-2015, were purposively selected from the following curricular areas — Science, Modern Languages, English and Social Studies. The findings revealed that the programme provided most of the student teachers with the necessary skills in two core areas — lesson planning and the use of technology — which they were able to utilize in their classroom teaching. However, in the two other core areas — classroom management and assessment — most found that their preparation was inadequate and consequently they experienced difficulty in applying these skills in their classroom. This points to the need for programme review in terms of structure, modes of delivery and the programme's links to classroom realities.

**Keywords:** teacher education programmes, core skills, lesson planning, classroom management, use of technology, assessment

## INTRODUCTION AND BACKGROUND

Producing quality teachers remains the major goal of teacher education programmes across the globe for “improvements in student learning depend on substantial, large-scale changes in how we prepare and support teachers” (Ball and Forzani, 2009, p. 497). As is reported in the OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes (2009), “Improving the efficiency and equity of schooling depends, in large measure, on ensuring that teachers are highly skilled, well resourced, and motivated to perform at their best” (p.3). Thapa (2012) affirms that “...teacher training is a vital element in preparing [the] skilled teacher who plays an important role in shaping the quality of classroom delivery” (p. 69). Yet, according to Harris and Sass (2007), “...there is no consensus on what factors enhance, or even signal, teacher quality” (p. 1). Therefore, Darling-Hammond (2010), citing Edward Crowe, a policy analyst, points to the fact that:

“new assessments are needed to tell whether teacher education graduates have developed the classroom teaching skills to be effective with their students because current teacher tests don't

directly measure what teachers do in the classroom, and they don't indicate how well teachers will do in the classroom" (p.1).

The degree of transfer of the skills acquired in teacher education programmes becomes a matter of great significance, for as Joyce and Showers (1981) point out "the eventual goal of learning...is the transfer of acquired and mastered skills to classroom practice;...the use of knowledge and skill in unique settings" (p. 163). Therefore, this issue becomes the focus of this research study which attempts to find out what, in the perspectives of recent graduates (2013-2015), are the aspects of their teacher education programme which facilitated the transfer of the skills they acquired during the Diploma in Education (Dip Ed) programme. This research study builds on a former study done by James, Phillips et al. (2013) who sought to gain insights into the views of teachers on their in-service teacher education experiences. This study, however, spotlights four teaching skills and builds on the issue of transfer.

The Dip.Ed. teacher education programme is an in-service programme which targets secondary school teachers across the island of Trinidad and Tobago. It is an intense, one-year programme, which aims to "ensure that classroom practice is informed by a solid theoretical base in the foundation disciplines, curriculum theory, and methodology." (Faculty of Humanities and Education Regulations and Syllabuses–The University of the West Indies, 2012–2013, p. 72). The stated objectives of the programme are to:

- encourage teachers to give the greatest attention to past and present practices and future possibilities in the teaching of their subjects.
- encourage teachers to read and to think about various problems related to the history and practice of education generally, and their own subjects in particular.
- encourage teachers to think about education as a process involving delicate relationships among teachers and students.
- lead teachers to consider the professional implications of the nature of their occupation and to strive for continued professional growth.

*(Faculty of Humanities and Education Regulations and Syllabuses. UWI, 2012-2013, p. 72)*

Each year, approximately two hundred teachers access the programme through which their skill of classroom teaching is developed. Teacher education is provided in a number of subject areas including, Mathematics, English, Science, Modern Languages and Social Sciences. The programme adopts a teacher-centered approach and its delivery mode includes reflective practice, lectures, and on-site practice. The programme consists of plenary sessions as well as subject-specific sessions for which lecturers with expertise in the different subject areas, have responsibility.

## PURPOSE OF THE STUDY

The Dip.Ed. is one of the major teacher education programmes in Jamaica. The quality of its graduates is of great concern to all stakeholders and on-going programme review is therefore critical. As a means of engaging in such a review, the research sought to elicit from recent graduates of the programme their perspectives on the degree to which they have been able to transfer skills in the Dip Ed programme to their classroom practice. The intent is to identify possible gaps in the teacher education programme and to

point to areas in the programme that are in need of further strengthening. The insights gained can inform future programme review and provide programme developers with data which can serve to ensure that the existing Dip Ed programme is of high quality. In this study, we adopt Darling-Hammond's (2006) definition of quality teacher education which speaks to three critical components — “tight coherence and integration among courses and between coursework and clinical work in schools, extensive and intensely supervised clinical work integrated with coursework using pedagogies linking theory and practice, and closer, proactive relationships with schools that serve diverse learners effectively and develop and model good teaching” (p.1).

## RESEARCH QUESTIONS

The overarching research question which guides the study is:

*From the teachers' perspective, are core classroom teaching skills acquired during the initial Dip. Ed. teacher education programme transferred to their classroom practice?*

Arising from it are the following sub-questions:

1. Are the skills of lesson planning, classroom management, use of technology and assessment transferred to classroom practice?
2. What aspects of the teacher education programme facilitate this transfer?
3. What aspects of the teacher education programme do not facilitate this transfer?
4. How can the Dip Ed programme be improved to facilitate the effective transfer of these core skills in the classroom?

## LITERATURE REVIEW

### **The teacher education and classroom practice divide**

Education in classrooms today can be very challenging (Loughran, 2007) and therefore what is required is “...immensely skilful teaching — and schools that are organized to support teachers' continuous learning” (Darling-Hammond, 2008, p.91). Skilful teaching entails sound content knowledge, pedagogical skills and the ability to motivate students to learn. Citing Ball and Cohen (1999), Darling-Hammond (2008) affirms that developing these skills requires learning opportunities for teachers that are more powerful than simply reading and talking about new pedagogical ideas. She further asserts that among other things, “[t]eachers learn best by studying, doing, and reflecting; by collaborating with other teachers...” (p. 93). In addition, Darling-Hammond (2008), borrowing Miller and Silvernail's (1994) term, speaks of the “rub between theory and practice” as an essential practice which occurs most meaningfully in real school contexts, informed by research and inquiry (p. 93). Therefore, in Joyce and Showers's (1981) view, the focus of teacher education programmes cannot be only on “how to help teachers acquire and improve their skills, but also to help them integrate those skills in their active repertoire” (p. 163). However, as De Jong et al. (2010) point out, integrating theory and practice has proven to be challenging and transfer complex. Thus, teacher education is failing to meet the needs and expectations of the student teacher and to impact practice in any significant way (Darling-Hammond, 2008; Feiman-Nemser, 2001; Opfer and Pedder, 2011). Indeed, Korthagen, Loughran and Russell (2006) state that:

“...not only did graduates of teacher education appear to experience severe problems during their first period in the profession, but also a washing out effect of insights gained during teacher preparation was inferred, raising doubts about whether the insights from teacher education had actually been achieved” (p. 1021).

Wideen, Mayer-Smith, and Moon (1998) support this view and declare that the transfer of learning from teacher education programmes is minimal and in their opinion, this calls into question the effectiveness of such programmes. For Korthagen, Loughran and Russell (2006), this minimal transfer results in a problem which needs to be solved: the issue of integrating theory and practice in such a way that teachers can cope with the challenges which are part of routine, everyday teaching. They further add that there are two assumptions which must be challenged before changes can be made. The two assumptions are that “[t]hose learning to teach can readily translate what they are told into practice” and that “[s]upervision of those learning to teach should focus on the subject being taught rather than on the overall process of professional learning” (Korthagen, Loughran and Russell, 2006, p. 1024). Segall (2002) underscores then that the fundamental challenge facing teacher educators is altering deeply held, acculturated views of teaching and learning and the imperative of moving beyond a narrow instrumentalist approach that emphasizes the ‘how to’, ‘what works’, and the mastering of the ‘best’ teaching methods.

### Factors impacting learning to teach

Spaulding, Klecka, Lin, Wang and Odell (2011) in their editorial remind us of “the all too familiar lament” made by graduates of teacher education programmes that they learnt all they needed to know in the “trenches”, not the “towers” (p.3). This speaks very loudly to the inability of teacher education programmes to sufficiently meet the needs of the graduates and hints at the challenge experienced by teachers in transferring skills acquired. Grossman, Hammerness, & McDonald (2009) point to the fact that pedagogy is an essential element of teacher education for she believes that, “...*how* one teaches is part and parcel of *what* one teaches” (p. 425). Moreover, she contends that an even more critical issue is the pedagogy of teacher education — how the student teachers are taught — because in her view, “[v]arious approaches used by teacher educators might affect what the teachers learn about teaching...as well as how they engage in the practice of teaching itself” (p. 426). Korthagen, Loughran and Russell (2006) also identify modelling by teacher educators in their own practice as one of the key principles which can facilitate the desired change in teacher education. Singh, Pokharel, Singh, Silawal and Thala (2003) affirm that indeed one of the shortcomings of teacher education programmes is that teacher educators do not “become role models for teachers” (p.1); they “do not practice what they preach” (Feiman-Nemser, 2001, p. 1020). Indeed, Feiman-Nemser (2001) points out that “the pedagogy of teacher education mirrors the pedagogy of higher education where lecturing, discussion and seat-based learning are the coins for the realm” (p. 1020). Like Feiman-Nemser, Grossman (1992) sees the need for an enhanced pedagogy and advocates for the inclusion of specific instructional strategies, among them case-based teaching, simulations and role-plays.

Loughran (2007) also makes a call for greater focus on the pedagogy of teacher education, which in his view can result in students of teaching coming to such a depth of understanding about teaching, what he calls “see into teaching”, that teacher educators “gain a genuine appreciation of the skills, knowledge and abilities that shape practice” (p. 1). Loughran (2007) also suggests that it is necessary for teacher

educators to communicate to students of teaching the complicated nature of teaching and furthermore demonstrate methods to treat with that complexity, for he believes that they "...mask the skilful ways in which teachers respond to the problematic nature of practice" (p.2). In his view, this is knowledge that is critical to the development of the student of teaching, for it is necessary to disabuse the novice teacher that "teaching progresses along a preordained path with little divergence from a well-established objective or goal" (p. 2). There is need also to highlight for students of teaching that "teaching is much more than well-rehearsed scripts and routines...that genuine examples of such situations must be made available... preferably through the very experiences of their own learning in their teacher education classes..." (p.3).

Ball and Forzani (2009), acknowledging that learning to teach is complex and intricate, advise that teachers need to be skilfully trained — training which should involve "seeing examples of each task, learning to dissect and analyze the work, watching demonstrations, and then practicing under close supervision and with detailed coaching aimed at fostering improvement" (pp. 497-498). Related to this is another issue which plagues teacher education and challenges transfer of skills — the difficulty that teacher educators experience in knowing "the difference between teaching and telling" which in Loughran's (2007) view is "a major dilemma for many teacher educators" (p.3). Loughran (2007) contends that indeed "it is not enough to simply tell students of teaching that which appears problematic and that which does not...nor is it helpful in learning about teaching to simply hear how to deal with such situations" (p.3). Unfortunately, according to Ball and Forzani (2009, p. 503), there is the tendency for "the focus of teacher education to slip easily into an exclusively cognitive domain, emphasizing beliefs and ideas over the actual skills and judgment required in enactment" when there is a more overwhelming need for students of teaching to be offered "more deliberate opportunities...to practice the more intricate work of instruction" (p. 503). Feiman-Nemser (2001) highlights the need to support teachers throughout their entire career in order to ensure that they are able to sustain the skills acquired in their teacher education programme. She reiterates that "unless teachers have access to serious and sustained learning opportunities at every stage in their career, they are unlikely to teach in ways that meet demanding new standards for student learning..." (Feiman-Nemser, 2001, p. 1,014). She therefore advocates for "a professional learning continuum from initial preparation through early years of teaching" (p. 1014). Another issue which, in Feiman-Nemser's (2001) view, impacts teachers' ability to engage in what she calls "reform-minded teaching", is "the weak relationship between courses and field experience" which results in a general lack of coherence throughout the programme (p. 1,014). The teachers then experience grave difficulty in developing the skills necessary to engage in effective classroom practice.

With regard to the core teaching skills, the literature reveals that classroom management is one area which teachers believe to be problematic (Rosas and West, 2009). Indeed, both Kagan (1992) and Grossman (1992) identify the integration of classroom management and instruction as a task which beginning teachers struggle with, and one for which they are not adequately prepared. Integrating technology into instruction also presents challenges to beginning teachers. Albion (2001), citing Handler (1993), states that "fewer than 25% of teachers graduating from some US institutions considered themselves 'adequately to thoroughly' prepared for using computers in instruction" (p.322).

### **A call for change**

Based on the many impacting factors, there are three critical areas of change that are being advocated in the literature for improved teacher education programmes.

There is need for a reconceptualization of teacher education as a continuum that begins with initial teacher education and continues throughout the teacher's career (Feiman-Nemser, 2001; Grossman, 1992).

The literature highlights a shift to a practice-based approach to learning to teach. Ball and Forzani (2009) are of the strong belief that:

“a practice-focused curriculum for learning teaching would include significant attention not just to the knowledge demands of teaching but to the actual tasks and activities involved in the work. It would not settle for developing teachers' beliefs and commitments; instead, it would emphasize repeated opportunities for novices to practice carrying out the interactive work of teaching and not just to talk about that work” (p. 503).

This belief is supported by Grossman, Hammerness and McDonald (2009) who affirm that indeed there is a need for a shift in curriculum focus which entertains adding “pedagogies of enactment to an existing repertoire of pedagogies of reflection and practice” (p. 274).

Hammond (2006) identifies the need to bridge the gap between the sites of teacher education and the school and declares that “the enterprise of teacher education must venture out further and further from the university and engage ever more closely with schools in a mutual transformation agenda...” (p. 3). Korthagen, Loughran and Russell (2006) reiterate by calling for a shift “toward a more democratic and inclusive ways of working with schools and communities” (p. 1021).

Researchers (Feiman-Nemser, 2012; Grossman, 1992; Ball & Forzani, 2009; Korthagen, Loughran and Russell, 2006) all call for this change, because they recognise the importance of what Darling-Hammond (2006) calls “powerful teaching” in today's challenging classrooms (p.1). Teachers therefore need not only to learn core skills ‘in the towers’ but to be able to demonstrate them in the trenches.

## METHODOLOGY

A social constructivist approach was taken to the research. This allowed us to search after the meanings that the teachers brought to the experience of the Dip Ed. programme. Each teacher brought a perspective which led to a composite understanding of their teacher training and its transfer to their classroom practice. The research study embraced the qualitative paradigm. Merriam (2009) posits that the central goals of qualitative research are to acquire an understanding of how individuals come to terms with their lives, outline the process of meaning making, and explain how individuals interpret what they experience. Within the qualitative paradigm, a case study design was adopted which enabled us to intimately engage with the participants to gather data from the ground (Denzin and Lincoln, 2005). The focus was placed on recent graduates, one group of teachers who accessed the programme during the period 2013-2015. In order to capture “rich, thick” insights into the nature of their experience, six participants were purposively selected from the following curricular areas — Science, Modern Languages, English and Social Sciences. The six female teachers, Chantal, Maria, Tamara, Laura, Petal and Windy all teach at the secondary level. Their profile is outlined in Table 1 below.

| <b>TABLE 1: PROFILE OF PARTICIPANTS</b> |                     |                |               |                |              |                |
|---|---------------------|----------------|---------------|----------------|--------------|----------------|
| <b>Profile</b>                          | <b>Participants</b> |                |               |                |              |                |
|   | <b>Chantal</b>      | <b>Maria</b>   | <b>Tamara</b> | <b>Laura</b>   | <b>Petal</b> | <b>Windy</b>   |
| <b>School type</b>                      | Government          | Denominational | Government    | Government     | Government   | Denominational |
| <b>Form level</b>                       | 1-5                 | 4-6            | 1-5           | 3-6            | 1-5          | 1-6            |
| <b>Years of teaching experience</b>     | 7                   | 8              | 11            | 20             | 20+          | 8              |
| <b>Subjects</b>                         | Science             | English        | Spanish       | Social Studies | English      | Geography      |
| <b>Previous teacher training</b>        | No                  | No             | No            | Yes            | Yes          | No             |

Two methods of data collection were used — a focus group interview and an open-ended questionnaire. Before the focus group interview, the teachers were informed of the purpose and aim of the research and they provided written consent, signalling their willingness to participate. The focus group interview was chosen as it can stimulate ideas among the group and aid in recall, therefore resulting in comprehensive accounts of their experiences (Bogdan and Biklen, 1992; Fontana and Frey, 2005). As the group comprised only six participants, the dynamics of the interaction among the participants were easily managed as it was possible for the teachers to each take turns responding to the questions. The data collected therefore reflected the views of all. The open-ended questionnaire granted the opportunity for the participants to individually record their thoughts, and this served as a means of corroborating the views expressed in the focus group interview. The data from the focus group meeting were transcribed. Information from both the interview and the open-ended questionnaire was assigned codes from which the major themes and sub-themes, the conceptualisation of teacher education, the nature of the teacher preparation provided and the nexus between teacher education and the school, were generated. (See Figure 1).

These themes linked to the research questions served as the means of gaining insights into the experiences of the six participants in terms of the transfer of the four core skills into their classroom practice.

## FINDINGS OF THE STUDY

The themes generated from the analysis were salient and they were repeated in the findings unearthed in response to all the research questions. They underscored the major issues which can enhance the quality of the teacher education programmes offered and which can affect the degree of transfer experienced by the six teachers who formed the sample. Consistently throughout was the reverberation of the need to carefully conceptualise teacher education, bridge the gap between the training institution and the school, and ensure that the nature of the preparation can result in skilful teaching which can be easily transferred to the classroom.

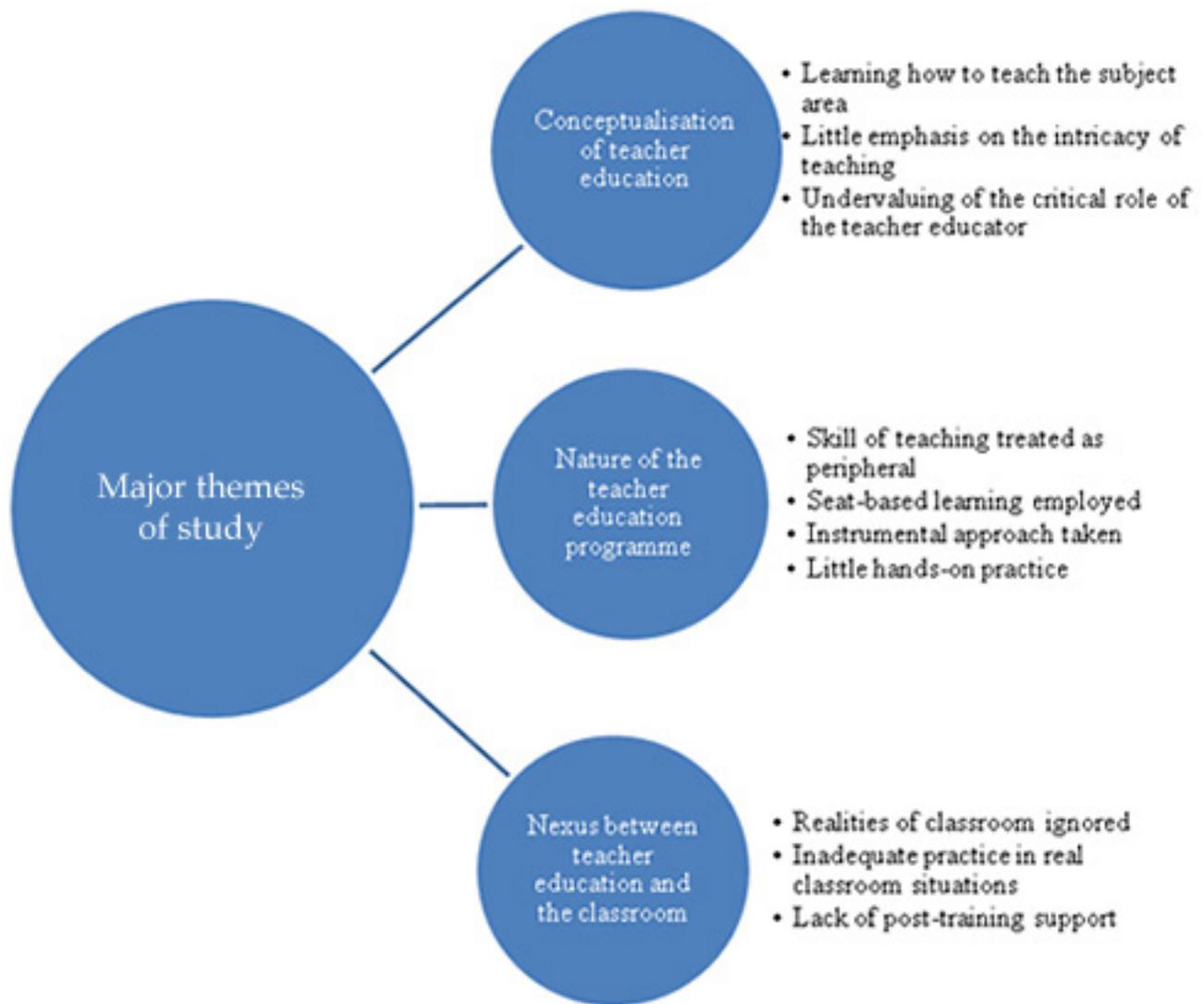


Figure 1. Major Themes and Sub-themes of the Study

## Research Question 1

*Are the skills of lesson planning, classroom management, use of technology and assessment transferred to classroom practice?*

Most of the teachers agreed that through the Dip Ed programme, they acquired skills in lesson planning and were able to transfer them. Chantal admitted that before the Dip Ed programme,

“...I just going [go] in [to the classroom], I teaching [teach]...and I [am] going without any vision”; but by the end of the programme, she felt confident and was able to acknowledge that “it was very good to know how to plan to get outcomes” (Interview, 2016).

In the questionnaire, she affirmed, “I was exposed to lesson planning skills and techniques that enhanced my teaching ability” (Chantal, Questionnaire, 2016).

Laura shared: “Those lesson plans we did at Dip Ed were so useful...I find it [is]...a good bank so now that I can go back...Many times I do it...” (Interview, 2016). In addition, she stated that lesson plans were now easily transferred, especially if they were done electronically and therefore they are now ‘reusable’.

Windy, however, felt that lesson planning was not a skill that she could easily transfer because, for her, “lesson planning is an illusion as to what takes place in the classroom” and the Dip Ed. programme “does not take into consideration the dynamism of the classroom; the hiccups that occur” (Interview, 2016). She further stressed: “So for me, although I learnt the skills, I still have challenges executing a full lesson plan despite...how best I plan it, even up to today in the classroom” (Windy, Interview, 2016).

The majority of teachers, however, did not experience the same confidence about being able to transfer their classroom management skills to the classroom setting. In fact, Laura firmly states:

“I did not learn classroom management skills from Dip Ed. I learnt from my experiences of being a teacher for many years...and learning from teachers who were exemplars...it did not come from Dip Ed” (Interview, 2016).

Windy expressed similar sentiments, “I don’t recall learning classroom management skills. It’s just a matter of skills that...I would have developed on my own” (Interview, 2016). Tamara concurred, “I don’t remember being taught about classroom management.” She further stated, “In the general sessions... maybe in the psychology session, it was mentioned” (Tamara, Interview, 2016).

Therefore, for Tamara, Laura, Petal and Windy, the issue of transfer in the case of classroom management did not arise. Chantal and Maria, however, claimed that they had been given enough knowledge and provided with sufficient opportunity to not only acquire the skill but to transfer it to their classroom practice. Maria reflected,

“I don’t know if he could predict the classroom management skills [that would be needed] and the outcomes...but he taught us contingency planning...and he tested our skills as a teacher...he scaffolded me and showed me how to get out of a [difficult] situation” (Interview, 2016).

In regard to assessment, on the other hand, all the teachers felt that they had received inadequate training. Maria remarked, “I learnt that [about assessment] from reading, not from what was demonstrated to me, not from what was taught in Dip Ed...” Overall, it was felt that there was insufficient training in this area. Consequently, it became difficult to effectively demonstrate the skill in the classroom.

The teachers admitted, though, to having acquired skills in the use of technology, even if in a limited way, and to be able to transfer those skills to the classroom. Windy revealed, “Yes, the skill is there...I just implement little bit by little bit and I see changes in my children” (Interview, 2016). Chantal also shared, “I was exposed to Weebly and I still use it” (Interview, 2016). Even though they were faced with on-site challenges, they persisted. “I am trying to use them [technology skills] but you know what the problem is with technology — the school environment and context. It is difficult” (Chantal, Interview, 2016).

It should be noted that because of the structure of the programme, individual teachers experienced the teacher education differently, depending to a large extent on the subject cluster they belonged to and the level of expertise of the lecturer who facilitated their preparation. This raises questions not only about programme structure but also speaks to the inequity in the quality of the teacher education received and points to the need for quality assurance measures to be included in the programme.

## Research Question 2

*What aspects of the teacher education programme facilitate this transfer?*

The teachers who experienced learning in the core areas were able to identify the factors which facilitated transfer of skills to their classroom practice. One factor was the concentrated focus on and development of skills, including intense practice. Chantal affirmed, in reference to lesson planning,

“It took a lot of practice...our supervisor drilled us. I did so many of those, I good.”  
(Interview, 2016)

They were equally in support of demonstration sessions and modeling, which they felt strongly helped them more easily acquire the skills. One teacher confessed that, as a result of the teacher education programme, she felt confident about her classroom management skills and it was “because it was demonstrated [for me] (Maria, Questionnaire, 2016). She also said that the lecturer’s demonstration of a particular skill “was an ‘Aha’ moment because I saw it demonstrated in action for me while I was teaching...on-the-spot training...” (Maria, Interview, 2016).

These two factors speak to what they considered aspects of the teacher education programme that, for them, were essential — adequate opportunity to practice what they were taught; in-depth hands-on experiences and examples of good teaching. For them, the bridging of the theory-practice gap facilitated their acquisition of teaching skills as well as their ability to transfer same to their classroom practice. This points to the need for a reconceptualization of teacher education

## Research Question 3

*What aspects of the teacher education programme do not facilitate this transfer?*

The teachers were equally able to identify factors which prevented their effective use of skills in the classroom in the core areas where they felt transfer was difficult. For them, the development and transfer of skills in classroom management and assessment were not facilitated in the Dip Ed. programme. Laura expressed the view that classroom management was not treated with adequately. She stated, “For me, that was not a focus at all in Dip Ed.” Windy concurred that classroom management was not treated as a significant component of the programme.

“Dip Ed. was more about how to execute a lesson; more in terms of delivering content and delivering it well. The fringes — it helped execute the lesson” (Interview, 2016).

There was therefore a heavy focus on the core pedagogy of the subject content to the neglect of the generic classroom teaching skill — classroom management.

Laura reported that they were told about classroom management, it was “mentioned”, rather than being taught how to effectively manage a classroom or given the opportunity to practice in real settings. Petal indicated,

“For me, it was too theoretical...there were not opportunities...to be put in real situations, for you to observe, discuss the actual skills necessary in the real classroom in the school...The focus was on a well-prepared and executed lesson plan without looking at the other issues, the noises. You focus on the lesson plan and the contents of same with the hope that that would lend itself to...a quiet class, an interactive class — so the classroom management was just supposed to fit into the lesson plan (Interview, 2016)”.

In the teachers’ view, assessment received similar treatment — teachers were just told about the skills. Therefore, Tamara laments that in regard to group work, “Some things were highlighted but we did not get a chance to really ‘dig up in it’. Yes, they said group work. They SAID it” (Interview, 2016). This was underscored by Windy, who pointed out that, “...less emphasis could have been placed on the theory and more on skill-building” (Questionnaire, 2016).

Another issue, in the teachers’ perspective, which prevented easy transfer of skills was that the realities of the classroom where practice occurs were not acknowledged in a significant way in the teacher education programme. For instance, Windy underscored that because the skills were taught and acquired in what she calls ‘unreal settings’, “it [was] difficult to execute when students were rowdy and you have all the natural day-to-day challenges with the classroom” (Windy, Interview, 2016). Similarly, the remarks the teachers made about the contextual challenges experienced with regard to technology infusion indicated that they were not prepared in the programme to use technology in classrooms which did not facilitate their efforts.

Critical factors that negatively impacted transfer were the instrumental nature of the programme, the focus on the theory to the neglect of practice and the “seat-based” methodology employed. In addition, there was the disjuncture/distance between the place where the skill was acquired and the place where the skill was to be enacted — a lack of acknowledgement of the realities of the classroom.

#### **Research Question 4**

*How can the Dip Ed programme be improved to facilitate the effective transfer of these core skills in the classroom?*

In spite of their experiences, all the participants indicated that there was need for improvement in the Dip Ed programme in order to more effectively facilitate the transfer of the core skills identified in the study. Maria asserted:

“I really enjoyed my Dip Ed experience, but we could focus more on...maximizing time by focusing more on classroom management skills, assessment skills, use of technology and lesson planning. We got some but not all, so we could maximize that aspect of it” (Interview, 2016).

Laura stated with regret, “I needed more out of the programme” (Interview, 2016). In the words of Windy, the Dip Ed teacher education programme “is a crash course right now” so there is need to prioritise what is important; determine what quality is, and maximize teaching time.

Petal concurs, “I understand the challenges as regards time, but maybe they need to revisit the programme and get quality, don’t try to fit everything” (Interview, 2016).

Laura has also raised some strong concerns about the need for ongoing refresher courses and the need for the programme to be more ‘dynamic’ and responsive to the classroom realities. She suggested that lecturers can introduce simulations, “craft something that mirrors the real classroom”, offer the teachers the opportunity to practice skills and receive feedback in real life settings. Additionally, Windy and Tamara called for the inclusion of workshop sessions which would allow for intense hands-on training. Tamara claimed “...our curriculum team did a great job, but as it relates to pedagogical skills, I suggest more workshop-oriented approaches so that teachers leave being able to actually do the thing” (Tamara, Interview, 2016).

Thus, as it relates to Research Question 4, the participants felt that the Dip Ed programme could be improved by focusing on core skills as emphasized by Maria, Tamara and Petal; by maximizing available time as emphasized by Chantal; and by focusing on linking theory to practice as emphasized by Windy and Tamara. These factors can contribute to the improved quality of the teacher education programme to which they have been exposed.

## DISCUSSION AND CONCLUSION

The findings revealed that where the transfer of skills to classroom practice occurred, this ability was based on the following factors — the concentrated attention on the skill of teaching, the intense practice of the skill, and the use of demonstrations and modelling. The teachers felt that time must be dedicated to their learning of the skills and that there must be a balance between theory and practice. They too underscored what Miller and Silvernail (1994) call the ‘rub between theory and practice’ as an essential part of the teacher education programme. The findings showed clearly that for many of them the programme was too theoretical. They strongly believed that it was not facilitating to merely tell them about the skill, provide the supporting theory or even relate to them what they must do to acquire the skill. Ample opportunity must be provided for them to also engage in hands-on activities through which acquisition could occur. This perspective is supported by Darling-Hammond (2008) who emphasizes that developing core teaching skill “requires learning opportunities for teachers that are more powerful than simply reading and talking about new pedagogical ideas” and that “teachers learn best by studying, doing, and reflecting...” (p. 93). This is a view also shared by Joyce and Showers (1981) who iterate that teacher education programmes must have as their main focus the facilitation of the integration of core skills into teachers’ classroom repertoire. The value of including demonstrations and modelling as part of the pedagogy of teacher education was also emphasized, for both can work in tandem to reinforce the theory and what was practised. There is substantial evidence in the literature which underscores these elements — modelling, demonstration — as critical to effective teacher education programmes (Grossman, 2009; Korthagen, Loughran and Russell, 2006; Singh, Pokharel, Singh, Silawal and Thala, 2003; Feiman-Nemser, 2001).

Consistent with the research were the barriers identified by the teachers. Among them was the predominant focus on learning to teach the subject area to the neglect of some of the supporting skills. Indeed, based on the study, the supporting skills were deemed peripheral to learning to teach the subject area “in the fringes” (Windy, Interview, 2016). As a result, greater focus was placed on the subject being taught, rather than on the development of professional skills. This learning through active teaching in the classroom, learning in the trenches, is acknowledged by Spaulding, Klecka, Lin, Wang and Odell (2011) as the norm in teacher education programmes, and is an element which Korthagen, Loughran and Russell (2006) concur can undermine the effectiveness of any teacher education programme. The findings also revealed that in teacher education programmes, the difficult, intricate nature of teaching was often kept hidden and was not addressed in the programme (Loughran, 2007). Teachers were therefore left unprepared or under-prepared when they found themselves in difficult situations without the skills necessary to deal with the intricacies which faced them. This issue is linked to another barrier to transfer — the apparent disconnect between the teacher education received and the realities of the classroom where their skills are to be transferred — which Feiman-Nemser (2001) suggests can have a negative impact on knowledge and skill transfer by teachers.

The research also pointed to areas where improvement was deemed necessary in order to ensure that the teachers have a richer, more meaningful experience of teacher education, one which adequately prepares them for quality teaching. It is suggested that the focus on sustained practice should be intensified. In addition, more time and attention should be given to each of the four areas, and real classroom situations should be simulated in order to bridge the gap between the learning in the programme and actual classroom practice — the practice-focused curriculum that Ball and Forzani (2009) advocate for and Grossman, Hammerness and McDonald (2009) and (Loughran, 2007) recommend. There is also the need for focus to be placed on providing support for the teachers post-training. This is the post on-site coaching which Feiman-Nemser (2001) identifies as a critical element of teacher preparation. If these improvements occur, then there is the possibility that there will be demonstrated in classrooms what Darling-Hammond (2008, p. 91) says is required in schools today “...immensely skilful teaching...”. Moreover, it is suggested that quality teacher educators, with the knowledge, expertise and understanding of the demands of teacher education are also a critical factor in the preparation of quality teachers — a point alluded to by many (Loughran, 2007; Singh, Pokharel, Singh, Silawal and Thala, 2003). If, however, the improvements are not made, the Dip Ed will continue to fall short of its goal to prepare competent and capable teachers for the nation’s schools, as has been observed about other teacher education programmes across the globe (Wideen, Mayer-Smith, and Moon, 1998; Korthagen, Loughran and Russell, 2006). In addition, the quality teacher education that Darling-Hammond (2006) speaks of will remain elusive.

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# Pedagogical Content Knowledge Intensities of Science Educators in Education Institutions in Zambia: Towards Improved Teaching for Quality Science Education

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## ABSTRACT

This paper reports findings of a survey by the Ministry of General Education (MOGE) in Zambia on Pedagogical Content Knowledge (PCK) of science lecturers at Colleges of Education (COEs) and teachers of Collaborating schools (CSs). The study sought to explore and link pre-service and in-service educators' general PCK and Content Knowledge (CK) of science curriculum. The study employed a survey design, following qualitative data collection methods. A PCK test on teaching science was developed with seven questions to measure educators' PCK. A total of 141 teachers and 49 COE lecturers wrote the test. Marked PCK test scripts were analyzed. The findings indicated respondents' low CK on common curriculum topics and weak PCK, especially in scientific concepts and process skills, hence the need for strengthening. These findings have implications for MOGE pre-service and in-service teachers, support structures, and COE lecturers, as they indicated educators' inadequate PCK understanding, and the resulting poor learner performance in national examination results.

**Keywords:** science education, pedagogical content knowledge, subject matter knowledge

## INTRODUCTION

The Ministry of General Education in Zambia and Japan International Cooperation Agency (JICA) conducted a Baseline Survey in September, 2015. The survey was done to assess the base Pedagogical Content Knowledge of science lecturers and teachers in the nine colleges of education and their Collaborating schools (CSs) as a basis for deciding on the focus of intervention for the new project on Improvement of Pedagogical Content Knowledge (IPeCK): Linking Pre-service and In-service Education.

### Background

The Ministry of General Education believes that the quality and effectiveness of its educational system depends heavily on the quality of its teachers in educational institutions (Ministry of Education, 1996). To this effect, MOGE has institutionalized College-Based and School-Based Continuing Professional Development (CBCPD and SBCPD) programs as a sustainable and cost-effective platform for teachers in schools and lecturers in the COEs to continuously update knowledge and sharpen teaching skills, as well as stay abreast of modern trends and developments in the educational system. Topics for CPD have usually been selected from such areas as pedagogic routines, subject content, school management, guidance and counseling etc. (Ministry of Education, 1996). Importantly, SBCPD and CBCPD have been

viewed as key to improving the quality of teaching and learning provisions in educational institutions, particularly in mathematics and science subjects. Significant emphasis has been placed on “the key areas of mathematics and science where achievements far from satisfactory” have, year-in-year-out, been recorded in national examination results, national assessment surveys and international assessments in these subject areas, have therefore continued to stand out as areas of concern to the MOGE (Ministry of Education, 1996, p. 53; Ministry of Education, 2014; Examinations Council of Zambia, 2015). In the same vein of learner achievement, the education sector has also been considered to be underperforming, according to the Sixth National Development Plan (Republic of Zambia: Sixth National Development Plan 2011- 2015, 2011).

Furthermore, the revision of the curriculum in 2013 that demanded educational outcomes of knowledge, skills and values in learners meant redefining and reorienting both teachers at school level and lecturers at colleges of education as a source of teacher training, to help them cope with the demands of the revised curriculum. Consequently, MOGE, with the technical support of JICA, carried out a Baseline Survey in September 2015 to assess and determine the Pedagogical Content Knowledge of teachers and lectures in science subjects as a point of entry to begin to evaluate their preparedness in meeting the demands and needs of the revised curriculum, as well as to exploit other avenues for improving the quality of teaching and learning in these subjects. The findings of the survey would help determine the interventions and programs (such as CPD foci) needed to enable educational institutions to effectively provide the learners or students with the much needed competencies of skills, knowledge and values. This would ultimately improve the general outlook of the school performance of learners in national examinations, assessment surveys and international assessments. The role of pedagogical knowledge in the revised curriculum is also underscored by Mishra and Koehler (2006) as actually contributing to methods of teaching and learning, as it includes, among other things — overall educational purposes, values, and aims” (p. 1,028).

From the foregoing, it is also imperative that the COE curriculum be amended to meet the aspirations of the revised school curriculum of knowledge, skills, positive attitudes and values, so that college graduate teachers can be relevant and competent in implementing the school curriculum effectively, once employed as teachers (Ministry of Education, Science, Vocational Training and Early Education - MOESVTEE), (2013). Other weaknesses identified in the teacher training curriculum in Zambia were that it was loaded with mainly “cognitive factual knowledge, with sharp distinctions between subject content and pedagogy” (Ministry of Education, 1992, p. v). The observed weakness, where content is completely separated from pedagogy, is indeed seen in the prevalent tradition in teacher training institutions where subject content is taught separately by a content lecturer and methodology by a methods lecturer — as distinct components that do not speak to each other. The absence of a specific training course for newly appointed COE lecturers, who are mostly from secondary schools, is seen as mere addition of subject content lecturers without in-depth PCK understanding as they are themselves products of the local universities, trained on content in a separate department from the methods department. For these reasons, integration of PCK at COEs and schools, support the MOGE’s longstanding need for “improving the quality of pre-service teacher educators and also promoting the ongoing professional development of serving teachers” (MOE 1992?, p. vii). The ideas expressed here are similarly reiterated in the views of the National Research Council, (1996) that:

Higher education, 2- and 4-year college professors need to model exemplary science pedagogy and science curriculum practices as teachers need to be taught science in college in the same way they themselves will teach science in school. Changing the pedagogical practices of higher education is a necessary condition for changing pedagogical practices in schools (1996, p. 238).

To this end, it is the desire of the MOGE to bring about improved student learning achievements through enhanced teacher knowledge integration as PCK for improved pupil performance (Ministry of General Education, 2015). As such, the Ministry of General Education (2015, p. ii) views “improved learner achievement to be directly related to improved teacher performance in terms of classroom practice”.

### **Statement of the Problem**

Poor performance in the sciences in national examination results, assessments and surveys has continued being a source of worry to the education ministry in Zambia. This worrisome learner performance is occurring despite interventions at the point of educational provision delivery at school and college levels in the form of SBCPD and CBCPD, among others. No extensive study has been conducted in Zambia to explore and link how educators at school and college level relate and interpret what is to be taught and learned (content knowledge) and how it is to be taught and learned (pedagogical knowledge), let alone, the amalgamation of content knowledge and pedagogical knowledge in their teaching practices and classroom experiences. This study therefore sought to determine the PCK use and application/practice by science teachers and lecturers as a starting point to understanding the problem/process of science knowledge delivery, which could possibly be the source of poor learner performance in schools.

### **Objectives of the Research**

The research sought to:

- a. Find out the present levels of PCK of science teachers in the CS and lecturers at COE in Zambia.
- b. Link PCK intensities of school teachers in the CS and lecturers at COE in terms of PCK utilization in planning teaching and learning experiences.
- c. Help in determining the focus and direction of future interventions and programs in teacher education institutions and schools in Zambia.

### **Research Questions**

The following research questions were used to meet the objectives of the research:

- What is the present PCK status of science teachers and lecturers at colleges of education?
- How do the PCK intensities of school teachers compare with those of lecturers?
- What kind of interventions and programs could be implemented in schools and colleges to enhance the quality of teaching in science, in order to improve learner performance in schools?

### Significance of the Research

The findings of the study will help the MOGE to ascertain the focus and direct emphasis on current training programs in CoE and in-service teaching practices such as CPD in schools countrywide.

### CONCEPTUAL FRAMEWORK

The conceptual framework that guided the research used “Shulman’s formulation of pedagogical content knowledge” which Mishra and Koehler (2006, p. 1017) view as fundamental in the construction of conceptual frameworks in related educational fields — science knowledge for teaching not an exception. The conceptual framework realizes the desired knowledge abilities essential to effective science teaching practice and learning that ought to be exhibited by any accomplished educator (teacher or lecturer). The way in which teachers’ content knowledge is integrated with classroom teaching skills in such areas as the curriculum, learners, learning environment and pedagogy is believed to be a function of the teaching experience, which also brings about effective learning (Cochran, 1997). Accordingly, a teacher is expected to show major proficiencies in knowledge areas of “Subject Matter, Pedagogy, Learners, and Learning Environments” (Cochran, 1997, p. 1). According to Mishra and Koehler (2006), Shulman’s formulation of pedagogical content knowledge for science teaching could thus be diagrammatically represented as follows:

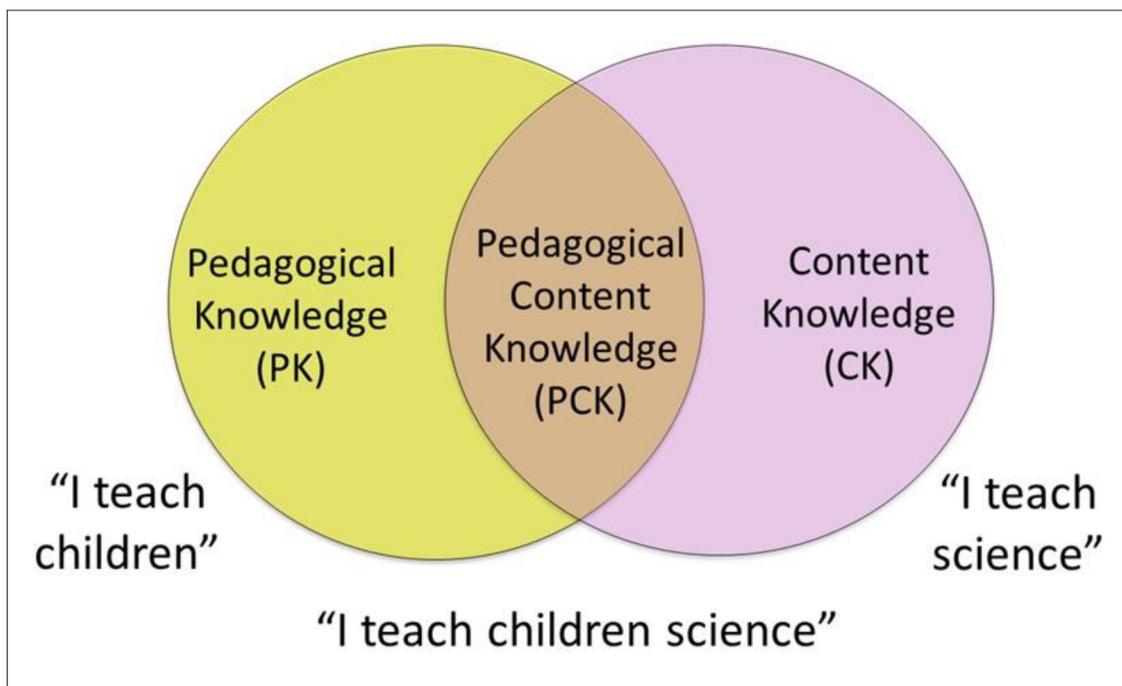


Figure 1. Pedagogical content knowledge.

From the above PCK framework for science knowledge for teaching, it is evident, as observed by Jacobsen, Eggen and Kauchak (2009, p. vi), that “learning to teach is complex and multifaceted in that it requires many different kinds of knowledge.

## METHOD

This study employed a survey design, involving science lecturers in all the nine Government CoE that train integrated science teachers and integrated science teachers in the respective collaborating school for the CoE. Written PCK science test items were given to the science lecturers at the CoE and teachers of integrated science from respective CS for each CoE, purposively selected as informative sources to respond in their own words to mainly free response science test questions. The PCK test was specifically designed to measure educators’ application of knowledge for teaching science on selected PCK domains such as; knowledge of the curriculum, understanding of learners, laboratory safety, scientific concepts, process skills, as well as use of teaching and learning materials. Some test items also asked for their Subject Matter Knowledge (SMK) i.e. Content Knowledge (CK). The seven test questions, some with part questions, were all selected from the integrated science Zambian syllabus topics, and these topics were the same at every grade level from grade 1 to 9. With regards to teaching and learning, though the topics were the same across all grades, their depth of treatment varied by grade, depending on the learners’ ability and intellectual development. The duration of the PCK science test was one hour and the test was given to respondents following a “collective administration of a captive audience” (Kumar, 1999, p. 113) just before or just after a common task that drew them together at the same time in the education institution. The target population of the PCK science test was all science lecturers in the 9 CoE and integrated science teachers in all the respective collaborating schools for the CoE. The PCK science test was administered to a total of 141 science teachers of grades 4 to 9 and 49 science lecturers in the nine government CoE, countrywide.

Prior to the actual baseline survey, a pilot was conducted at a university and a private college to see if the PCK test questions were clear and solicited the intended responses. The pilot provided an opportunity to edit and correct the PCK test items that were not producing expected responses from the respondents, or were not totally clear. The pilot also gave an idea of the duration to be allowed for writing the test in the baseline study as well as consolidating the marking key.

## RESULTS AND DATA ANALYSIS

This section presents the results, interwoven with the data analysis for the science PCK test results.

Marked scripts for PCK tests were analyzed question by question, and scores were initially recorded college by college. Microsoft Excel was then used to generate comparative graphs of the PCK science test scores for all the COE.

The results of the study are presented below, alongside their graphs, in terms of average score by PCK domains for the COEs and CSs.

The following were the areas of science teaching knowledge, capturing the demands of the Zambian revised curriculum:

| TABLE 1. DISTRIBUTION OF QUESTIONS TO THE VARIOUS PCK DOMAINS. |                |                                   |                   |           |                    |                       |                         |                        |
|--|----------------|-----------------------------------|-------------------|-----------|--------------------|-----------------------|-------------------------|------------------------|
|  |                | Domains of Science Syllabus       |                   |           |                    |                       |                         |                        |
|  |                |                                   | 1. The Human Body | 2. Health | 3. The Environment | 4. Plants and Animals | 5. Materials and Energy |                        |
| Subject Matter Knowledge                                       |                | Subject Matter                    | Q1-i, iii         | Q5-ii     | Q6-i               |                       | Q4-ii, iv<br>Q7-ii, v   |                        |
|  | Domains of PCK | A. Curriculum (sequence of topic) | Q1-ii             |           |                    |                       |                         | Q2                     |
|  |                | B. Concepts                       | Q1-iv             |           |                    | Q6-i                  |                         | Q2, Q3-i<br>Q4-i, Q7-v |
|  |                | C. Process Skills                 |                   |           | Q5-ii              |                       |                         | Q3-ii, iii             |
|  |                | D. T/L Materials                  | Q1-ii             |           |                    | Q6-ii                 |                         | Q4-iii<br>Q7-iii       |
|  |                | E. Learners                       |                   |           | Q5-i, iii          |                       |                         | Q4-i                   |
|  |                | F. Lab. Safety                    |                   |           |                    |                       |                         | Q7-i                   |

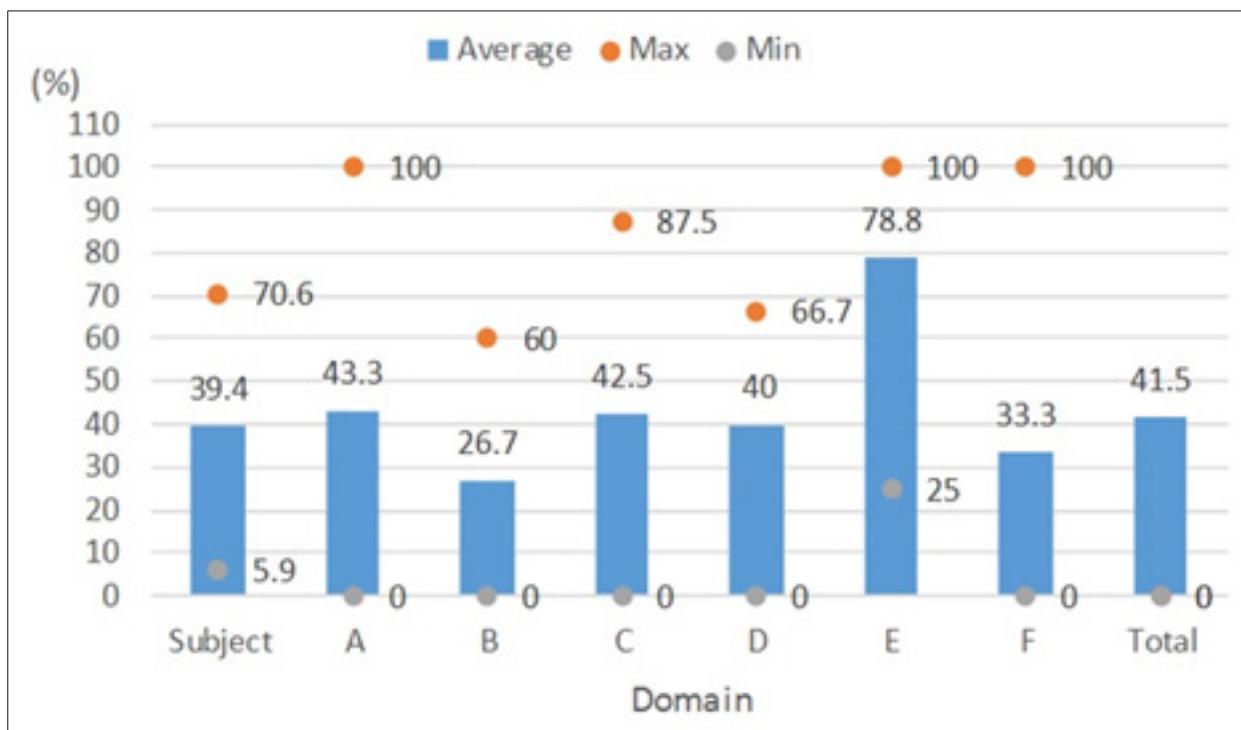
- a. Knowledge of sequence/connection between science concepts in curriculum
  - Understanding of the content in science syllabus/curriculum
  - Understanding of sequence of topics by grade level in science syllabus
  - Skills for preparing unit plan according to syllabus and school calendar
- b. Understanding of science theories and concepts
  - Understanding on meaning of science concept
  - Understanding on value of science concept
  - Ability to use science language/expression expertly
  - Ability to select appropriate knowledge representations, models, examples, analogues, materials, scientific terms
  - Knowledge of how to translate complex/difficult concepts/ideas into learnable topics (i.e. to help pupils understand the science concepts)
- c. Knowledge of the science process skills (or the scientific process or method or scientific thinking)
  - Understanding of the interplay between experiment and theory
  - Ability to reinforce learning of theoretical subject content of the syllabus
  - Knowledge/skill on alternative strategies for problem solving

- Ability to organize and evaluate science process skills in the lessons such as;
  - Observation,
  - Presentation of data (data tabulation, pie charts, line graphs, bar graphs),
  - Analysis of results,
  - Drawing appropriate conclusions based on observation(s) and/or results,
  - Evaluating the results (identify sources of errors and suggest possible improvements) etc.
- d. Knowledge and skills on the preparation and use of teaching/learning materials
  - Knowledge of using science apparatus and equipment
  - Knowledge and skills of selecting/developing effective materials according to lesson objectives
  - Knowledge for explanation/representation of concept (contents) with visualized/ embodied models
  - Manipulation of apparatus
- e. Ability to deal with learners
  - Ability to select what the pupils are likely to already know as the starting point and later, what would be difficult for them.
  - Interpret learners thinking
  - Teach pupils to think
  - Analyse learners' misconceptions / difficulties
  - Offer appropriate alternatives / counterexamples to learners' misconceptions/difficulties.
  - Knowledge of how best to evaluate pupil learning (knowledge of different test items/ formats)
- f. Knowledge and skills for laboratory management and friendly environment
  - Laboratory safety (rules and regulations)
  - Handling of chemicals/apparatus

The PCK test results were presented by domain of science knowledge for teaching and learning.

The graph in Figure 2 shows that the highest average score was in the domain of dealing with learners, which was 78.8%, followed by the domain of 'knowledge of sequence or connection between science concepts' at 43.3%. The lowest score was in the domain of 'understanding of science theories and concepts' with 26.7%.

The graph in Figure 3 shows that the highest average score was in the domain of dealing with learners, which was 61.3%, followed by the domain of 'subject matter knowledge' at 20.6%. The lowest score was in the domain of 'laboratory safety' with 10%.

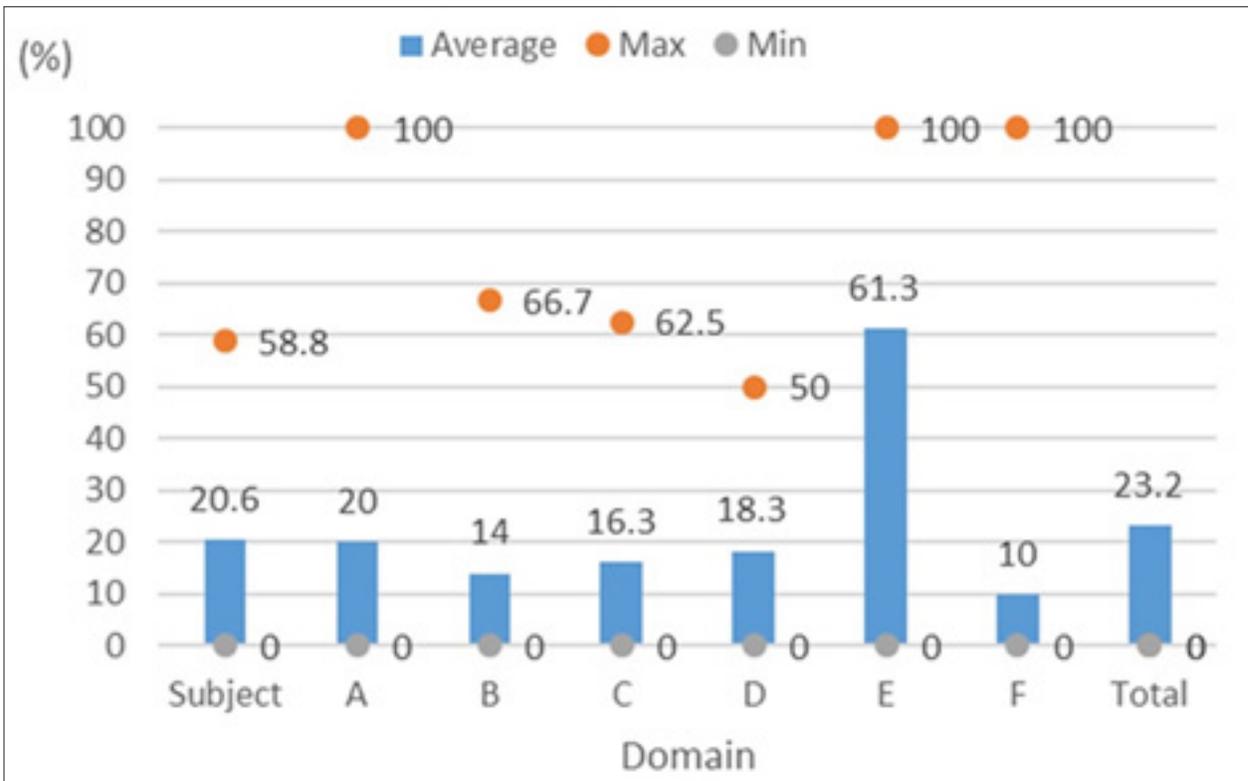


**Figure 2.** Percentage of correct answer by domain (COEs).

The results in Figure 4 show the average score by domain and their total overall score, by COEs and CSs. Both the COEs and CSs registered their highest average score in the learners’ domain (knowledge/ understanding of learners), with about 78.8% and 61.3%, respectively. For the COEs, the biggest challenge was recorded in the domain of scientific concepts, with an average score of 26.7%. CSs, on the other hand, faced the most challenge in the domain on laboratory safety, with an average score of 10%. The results therefore indicate that the desired minimum average score of correct answers was in the learners’ domain for both COEs and CSs. It is clear from the results that in all the other domains, both the COEs and CSs scored below the desired average minimum of correct answers (i.e. knowledge of teaching and learning materials, science process skills, curriculum aspects, as well as subject matter (content)).

Comparing the performance for COEs and CSs in the particular domains, it is clear that even though lecturers from colleges of education seem to have scored higher than teachers from collaborating schools, the tendency of average score distribution was very similar, as Figures 2 and 3 indicate.

The graph in Figure 4 shows that there is a similar tendency in the percentage average score by PCK domain between COEs and CSs. The result also indicates that there is uniformity in strengths and weaknesses among science lecturers and teachers in PCK. For both, the highest average was in the domain of learners, and lowest in the domain of laboratory safety (for CSs) and in the domain of concepts (for COE).



**Figure 3.** Percentage of correct answer by domain (CSs).

## DISCUSSION

These results revealed the proportional strengths and weaknesses of lecturers and teachers of science in the fundamental aspects of content and pedagogy and the general subject matter knowledge. It was thus evident that the degree of PCK intensities was not very different between teachers and lecturers in colleges of education, as it was relatively low. Teachers in collaborating schools who took part in the PCK test were non-university graduates, mostly certificate holders teaching lower primary — unlike the college lecturers who were all university degree holders, some at first degree level and others at master's level.

The domain of scientific concepts revealed a serious knowledge gap, whose implications rest on the way science is taught and learnt. This places further demand on lecturers to develop deep understanding and knowledge on the aspects in the 'concept' domain which is a prerequisite for producing quality science teachers. In cognitive science, 'deep understanding' generally refers to how concepts are represented in the mind and more importantly, how these 'concepts' are connected with each other (Grotzer, 1999). As such, deep understanding of science concepts involves the ability to recall many connected concepts at once, where every single concept has a deep meaning in itself. The low average score of lecturers in the concept domain signals the urgency to attend to the situation, and at the same time pinpoints the possible source of the problem of poor understanding of scientific concepts in schools.

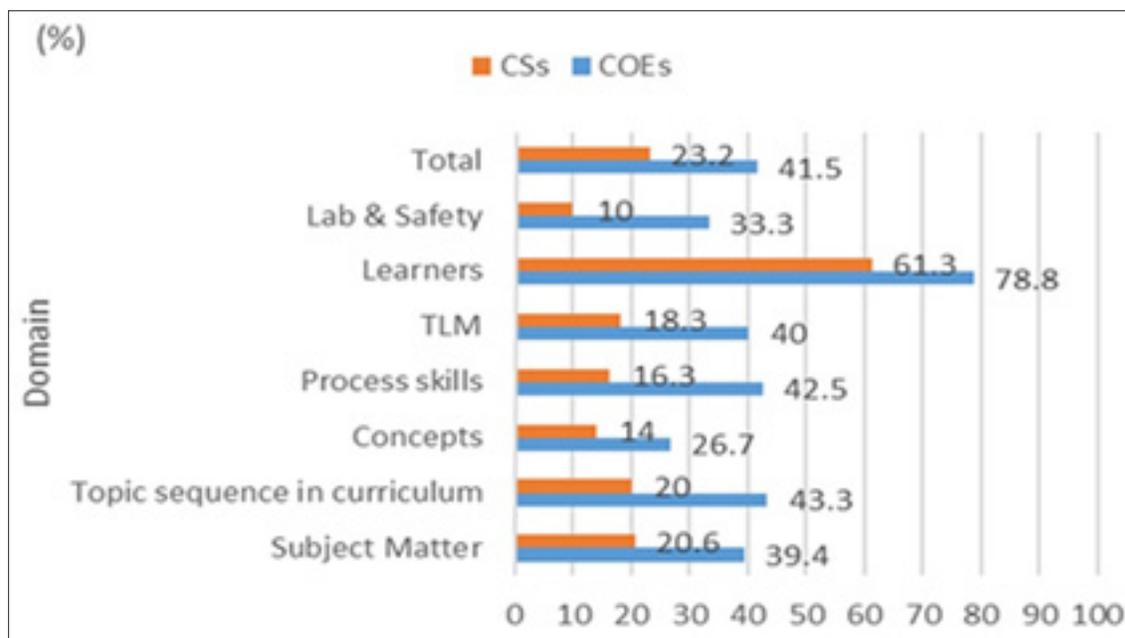


Figure 4. Colleges of Education (COEs) and Collaborating Schools (CSs).

For collaborating schools, the most challenging domain where they scored the lowest average was the domain for laboratory safety, at 10%. Indeed, most primary schools have no science laboratories and science lessons are offered in the ordinary classrooms largely as theory.

## CONCLUSION

Whereas COE lecturers and teachers answered subject matter questions relatively fairly, they answered questions on scientific concepts very poorly, particularly questions related to the value behind the teaching and learning of the concepts. Generally, the research findings show that PCK challenges exist for in-service and pre-service science educators in government educational institutions in Zambia. The PCK knowledge gaps could be further affecting the teaching and learning of the sciences, thereby limiting the realisation of the learners' full potential and performance in national examinations and other related forms of assessments. In order to improve the quality of science education in Zambia, there is need to improve the PCK intensities of science educators.

## RECOMMENDATIONS

The general results of the study suggest the need for effective training in PCK and PCK domains. This calls for increased collaboration between COEs and CSs in their professional practice, which would ultimately bridge the gap between pre-service and in-service teacher education. The current situation also calls for strengthened CBCPD and SBCPD activities to share best practices and help each other by learning from one another locally. This could be achieved by utilizing the already existing framework of School Programme of In-service for the Term (SPRINT). Furthermore, there is also need for the MOGE

to revisit current teacher training practices of offering subject content in a manner totally divorced from the teaching methodology. Notwithstanding, the revision of the existing college curriculum could be the starting point, as it may not be in tandem with the demands of the revised school curriculum. Additionally, there will be need for the MOGE to introduce short induction courses for newly appointed lecturers as a way of professionally orienting them to the demands of their new job.

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# Research to inform policy: Challenges for Teachers in Shifting Primary Schools from Half-day to Full-day Schooling

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## ABSTRACT

During the last decade, increasing numbers of primary schools in Vietnam have shifted from operating half-day (HDS) to operating full-day (FDS). As Nguyen and Griffin (2010) have reported, students from FDS outperformed their peers from HDS. Furthermore, the existence of two school models, full-day and half-day, may lead to unequal opportunity for students to learn. Therefore, there is a need for the Ministry of Education and Training Vietnam to consider shifting all primary schools to full-day schooling. However, the shift to full-day schooling involves challenges for teachers and schools in terms of pedagogy, management and resources. The objectives of this paper are to explore the challenges faced by schools and teachers when shifting from HDS to FDS. A mixed methodology was employed. As a result of the study, a range of policy recommendations regarding professional development and school resources for successful implementation of the change to FDS have been developed.

**Keywords:** policy research, survey, full-day schooling, half-day schooling, primary schools

## RATIONALE AND OBJECTIVE OF THE PROJECT

Until recently, the majority of primary schools in rural and remote areas in Vietnam offered half-day schooling (HDS), in either a morning (7.30-11.30 a.m.) or afternoon session (1.00-5.00 p.m.). In the cities and towns, schools have gradually shifted from HDS to full-day schooling (FDS). At the school level, the transition often starts by having selected classes running for a full-day while other classes still operate on a half-day program. Depending on the success of these classes and the needs of parents, the number of full-day classes within a school gradually increases. This leads to a co-existence of different types of classes and schools in the educational system: half-day classes (HDC) and full-day classes (FDC) within a school, and half-day, full-day and mixed schools within a province.

The co-existence of different types of classes and schools may produce inequity in an educational program, even between and within schools. Such a system is likely to disadvantage students who have the greatest educational needs. In the 2001 and 2007 studies of grade five achievements, the ratio of between-school variance to within-school variance was extremely high – among the highest in the world (Griffin & Nguyen, 2009). This means that there are huge differences between schools in terms of students' opportunity to learn. The introduction of FDS for specific classes within schools may increase existing learning opportunity inequalities within a school. If this is the case, it would mean that inequality is merely transferred from between schools to within schools, assuming private tutoring is not compensating for FDS.

In a recent study of the introduction of FDS by schools in Germany, Pfeifer and Holtappels (2008) predicted that by increasing time spent in school, home effects would be reduced, thus lessening the disadvantages to children from lower socioeconomic backgrounds. The increased learning time created more opportunities for students to excel. Gaps in academic achievement between these students and those from other countries would be hypothesised to decrease. The data from the national survey of student achievement in Vietnam also show that students from full-day schooling outperformed their peers from half-day schooling in both reading and mathematics (Nguyen & Griffin, 2010).

As it appears that shifting from HDS to FDS is a good solution for improving student achievement and reducing inequality between high and low socio-economic groups, it is important for the Vietnamese government to know the extent to which the primary education sector is ready for the shift in terms of teaching and physical resources (e.g. classrooms and food) and how to make the transition happen in a smooth and successful manner. The objective of the study reported here was to provide the Vietnamese Ministry of Education and Training (MoET) with an assessment of the capacity of the current teaching staff working in full-day and half-day classes and schools. Analysis of the current situation of primary school teachers and resources clarified the challenges that would be faced by the education system, schools, school leadership and teaching staff, if FDS were to be implemented nationwide. Recommendations for policymakers regarding how to assist schools in their transition to FDS are made at the end of this report.

## RESEARCH QUESTIONS

School and teacher capacity are important factors to consider when determining the feasibility of implementing FDS in more schools in Vietnam. Identifying the professional development training needs, the experience, and the level of acceptance of FDS by teachers and school leaders is also essential for the transition from HDS to FDS. It has been well established in the international literature addressing school and teaching quality and conditions for successful change (Darling-Hammond & Bransford, 2005; Griffin, Nguyen, Gillis & Mai, 2006; Scannell, 2007; World Bank, 2004) that the following aspects need to be examined:

- Teacher qualifications and experience
- Teaching skills
- Teacher subject knowledge
- Teaching conditions, e.g., students per teacher, workload, adequacy of teaching resources
- Teacher professional development needs
- Teacher experience and acceptance of FDS

This study seeks to address the following questions:

1. What are the characteristics of full-day schools (FDS) and half-day schools (HDS) in terms of class sizes, resources, and teachers' qualifications and experience? To what extent are these characteristics different across full-day and half-day schooling types?
2. What are the professional development training needs for teachers and principals when transferring to full-day schooling?

3. To what extent do schools and teachers have experience with full-day schooling? Are they willing to accept full-day schooling?
4. What are the strategies for a successful transition?

## **METHODOLOGY**

A sample survey was conducted of primary school principals and teachers from 20 provinces selected to be involved in this project. The design of the instruments followed the necessary steps documented by Postlethwaite (2005), who established theoretically sound procedures that reflect the needs of individual countries. Two sets of questionnaires for teachers and principals were designed. Sample selection followed all necessary steps to ensure the accuracy and representativeness of the inferences drawn (Ross, 2005). Focused interviews with regional educational team leaders, school teachers and leaders were conducted, both before and after the survey. The pre-survey interviews were to confirm the theoretical framework of the study and inform the questionnaire specifications. The post-survey interviews provided interpretations and explanations of the survey findings and validated the drafted recommendations. The data entry process was well planned, thoroughly supervised and checked for errors.

### **Development of Instruments**

A framework for the issues facing schools was drawn up using the framework of teaching and management quality in primary education employed for the Southern African consortium for monitoring student achievement (Ross, Saito, Dolata, Ikeda & Zuze, 2004) and the monitoring of student achievement in Vietnam (World Bank, 2004). The teacher and management framework was confirmed via focused interviews with a range of stakeholders, such as district and provincial level education officers, school principals and teachers. The interview results provided the evaluation team with a comprehensive specification for designing the principal and teacher questionnaires. The first version of the questionnaires was panelled further with school principals and teachers. The revised version of the questionnaires was then piloted in four schools before they were finalised.

### **The Sample**

This study was conducted in 20 provinces selected by the MoET in conjunction with the Education unit of the World Bank. The population included 109,853 teachers from 4,569 primary schools located in these 20 provinces. A probability sample was drawn using stratified two stage cluster sampling (Ross, 2005). The stratification variables were:

- types of school (half-day schools are schools with 0% of students involved in FDC; full-day schools are schools with more than 0% of students involved in FDC),
- economic levels: five economic levels as recorded in the data provided by MoET.

It was agreed that schools that had fewer than ten teachers should be excluded from the study. At stage one, schools were selected using a specialised sampling software, IIEPSAMP (Saito, Dolata & Ross, 2012). At stage two, ten teachers from each selected school were randomly chosen. As a result, a probability sample of 4,130 teachers from 413 primary schools was drawn. The percentage of FDS, HDS and mixed schools were 41.6%, 28% and 30.4% respectively.

### Data Collection, Data Entry and Analysis

A manual for data collection at schools was developed by the research team. Data collectors were education officers who worked at the district education offices. They were trained in data collection before being sent to schools. In each school, randomly selected teachers and the school principal were asked to complete the structured questionnaires.

Data was entered using a Windows Data Entry Manager (WINDEM). Once data entry was completed, random checks against each of the data entries were made to verify their accuracy. Data cleaning and data analysis took place in Melbourne. The descriptive data analysis was performed using Statistical Package for the Social Sciences (SPSS). Dummy tables were established to facilitate comparison between teachers teaching in full-day classes and schools and those teaching in half-day classes and schools.

### SURVEY RESULTS

In order to understand the challenges faced by half-day schools and mixed schools (where both half-day classes and full-day classes operate) when shifting from teaching half-days to teaching full-days, the characteristics of FDS were presented in contrast with the characteristics of HDS.

#### Teachers' Characteristics and Qualifications

Teachers' characteristics and teaching experience are presented in Table 1.

| School Type | Age  |      | Gender   |     | Ethnicity |      | Years of teaching |      |
|-------------|------|------|----------|-----|-----------|------|-------------------|------|
|             | Mean | SE   | % Female | SE  | % Kinh    | SE   | Mean              | SE   |
| FDS         | 37.7 | 0.29 | 91.8     | 0.9 | 97.8      | 0.54 | 11.5              | 0.3  |
| HDS         | 36.7 | 0.35 | 74.2     | 1.9 | 92.2      | 1.06 | 10.7              | 0.37 |
| Mixed       | 39.1 | 0.35 | 82.0     | 1.5 | 95.2      | 0.58 | 12.3              | 0.32 |

On average, the teachers involved in the study are 37.9 years of age; 83.8% of them are female; 95.2% are of Kinh ethnicity; and their mean number of years teaching is 11.5 years. The percentages of female teachers and teachers of Kinh ethnicity in FDS are higher than those of HDS.

#### *Teachers' Training*

As there have been so many types of teacher training in Vietnam in the last 30 years, it is important to know the number of years teachers were trained before receiving their formal teaching qualification in order to understand the nature of teacher training in the country. The number of years teachers were trained is reported in Table 2 and in Figure 1. To assist in understanding the variation of teachers' training across class types and school types, the length of teachers' training has been presented separately for each of those categories.

| TABLE 2. YEARS OF TEACHERS’ TRAINING BY SCHOOL TYPE. |                   |      |         |     |         |      |                   |      |
|--|-------------------|------|---------|-----|---------|------|-------------------|------|
| School Type  | Less than 3 years |      | 3 Years |     | 4 Years |      | More than 4 years |      |
|  | %                 | SE   | %       | SE  | %       | SE   | %                 | SE   |
| FDS  | 34.2              | 2.41 | 23.5    | 1.6 | 17.2    | 1.66 | 25.1              | 2.03 |
| HDS  | 35.5              | 2.4  | 35      | 2.1 | 8.9     | 1.23 | 20.5              | 2.12 |
| Mixed  | 36.8              | 2.36 | 25.8    | 1.8 | 12.3    | 1.36 | 24.7              | 2.36 |

The percentage of teachers with four or more years of teacher training is higher for FDS schools than HDS schools. This demonstrates that teachers who are involved in FDS teaching are likely to be more qualified than those in HDS.

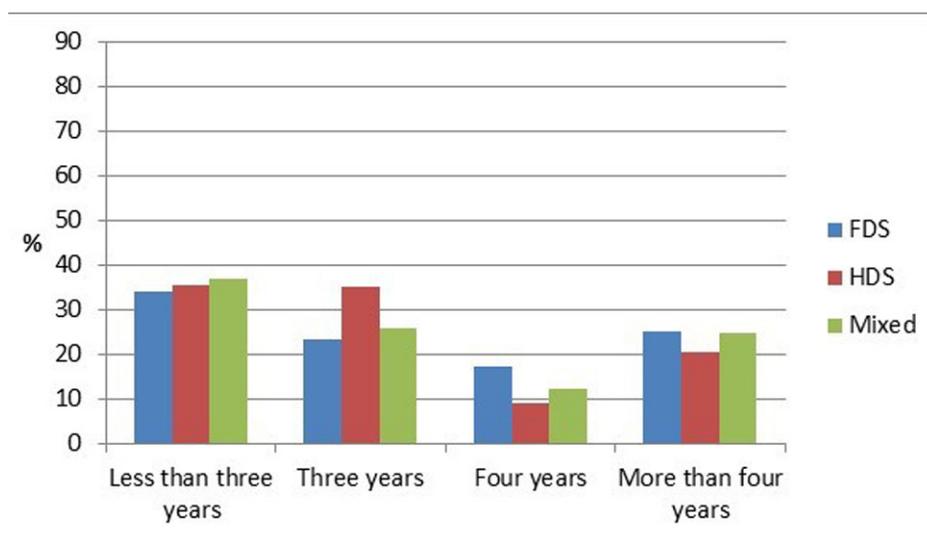


Figure 1. Years of teacher training by school type.

Teachers from FDS and mixed schools have more years of training than their peers from HDS schools.

**FINDING 1:**

Teachers from FDS are likely to have more teacher training than their counterparts from HDS.

**Teaching Excellence**

In Vietnam, teachers are assessed for teaching skills each year. Teachers with excellent teaching skills are given the “Teaching Excellence Award” at various levels. The award represents teachers’ pedagogical skills and knowledge. The percentages of teachers that have been assessed as excellent at different levels are recorded in Table 3. For each teacher, the highest level is reported.

| School Type  | Assessed as an excellent teacher at school level |      | Assessed as an excellent teacher at district level |      | Assessed as an excellent teacher at province level |      | Assessed as an excellent teacher at national level |      | Not assessed as an excellent teacher |      |
|--------------|--|------|--|------|--|------|--|------|--------------------------------------|------|
|              | %  | SE   | %  | SE   | %  | SE   | %  | SE   | %                                    | SE   |
| <b>FDS</b>   | 57.8   | 1.88 | 17.1   | 1.25 | 1.8  | 0.44 | 0.2  | 0.11 | 23.6                                 | 1.76 |
| <b>HDS</b>   | 46.4   | 2.47 | 13.0   | 1.26 | 1.1  | 0.30 | 0.2  | 0.12 | 41.1                                 | 2.58 |
| <b>Mixed</b> | 54.2   | 2.32 | 14.4   | 1.12 | 1.9  | 0.47 | 0.1  | 0.08 | 32.1                                 | 2.22 |

Among the three types of schools, FDS have a higher percentage of teachers assessed as excellent at almost all levels. It is apparent that FDS can employ or select teachers of a higher quality. As parents often want to send their children to classes and schools with more qualified and experienced teachers, the class sizes of FDS are higher. This data suggests that in order to change HDS into FDS, the teachers who teach in HDS should improve their teaching performance. Professional development courses should be run to help HDC and HDS teachers catch up with their peers from FDS. In addition, when drawing on the experience of the current models of FDS for mass implementation, caution should be taken, because teacher qualification levels vary across school types.

**FINDING 2: The percentage of teachers assessed as excellent at all levels from FDS is higher than that of HDS. Teachers from FDS have better teaching performance than their peers from HDS.**

### *Availability of Teachers for Specialised Subjects*

For analysis, the subjects in primary schools were divided into core subjects (compulsory) and specialised subjects (non-compulsory). Successful schools that fully implement FDS often use the extended time for running extracurricular activities such as outdoor pursuits, computer and information technology instruction, or foreign language programs. It is proposed to MoET that the extended time for curriculum in the FDC program could be used for extracurricular activities or specialised subjects, such as IT or foreign languages. It is important to know the current employment of specialised teachers in primary schools in Vietnam in order to understand the capacity of the system to meet this curriculum demand in terms of teacher supply. This data is presented in Table 4, Table 5, and in Figure 2.

**FINDING 3: The number of specialised teachers in FDS is higher than in HDS and mixed schools. For HDS there is on average of one IT teacher per 10,000 students and one foreign language teacher for every 2,500 students. Information technology and foreign languages are the two subject areas in which HDS experience the most serious shortages of teachers.**

**TABLE 4. NUMBER OF SPECIALISED TEACHERS PER 100 STUDENTS.**

| School Type | Music  |       | IT     |       | Foreign language |       | Physical education |       | Arts   |       |
|-------------|--------|-------|--------|-------|------------------|-------|--------------------|-------|--------|-------|
|             | Number | SE    | Number | SE    | Number           | SE    | Number             | SE    | Number | SE    |
| FDS         | 0.24   | 0.021 | 0.1    | 0.015 | 0.26             | 0.03  | 0.23               | 0.067 | 0.24   | 0.027 |
| HDS         | 0.21   | 0.031 | 0.01   | 0.004 | 0.04             | 0.01  | 0.12               | 0.017 | 0.18   | 0.029 |
| Mixed       | 0.18   | 0.014 | 0.03   | 0.008 | 0.13             | 0.015 | 0.15               | 0.017 | 0.16   | 0.014 |

**TABLE 5. PERCENTAGE OF SCHOOLS WITH SPECIALISED TEACHERS.**

| School Type | Music |      | IT   |      | Foreign language |      | Physical education |      | Arts |      |
|-------------|-------|------|------|------|------------------|------|--------------------|------|------|------|
|             | %     | SE   | %    | SE   | %                | SE   | %                  | SE   | %    | SE   |
| FDS         | 86.3  | 3.25 | 42.1 | 4.09 | 78.8             | 3.45 | 56.3               | 4.23 | 80.3 | 3.56 |
| HDS         | 70.4  | 4.68 | 6.9  | 2.48 | 19.9             | 3.86 | 44.1               | 4.86 | 60.5 | 5    |
| Mixed       | 75.7  | 4.19 | 19.6 | 3.53 | 52.8             | 4.56 | 51.8               | 4.56 | 67.6 | 4.44 |

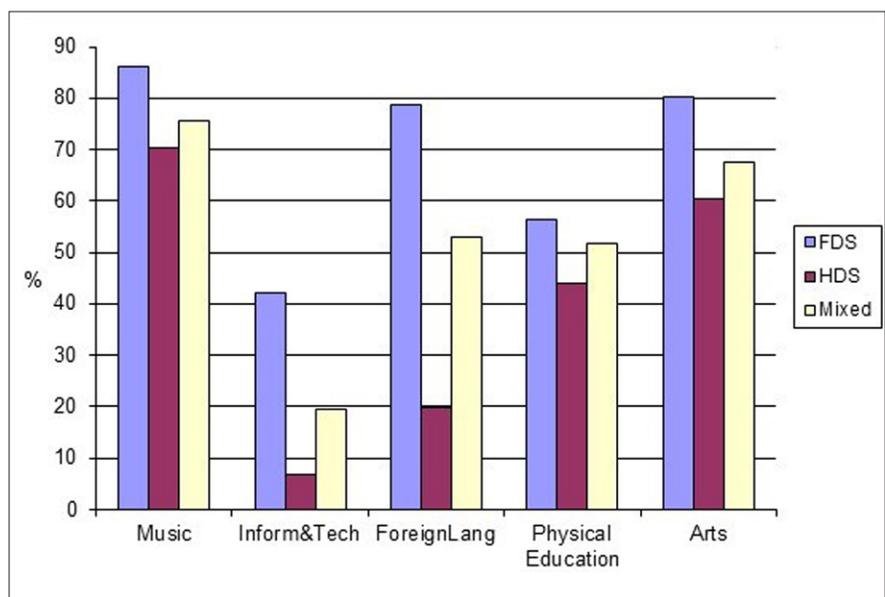


Figure 2. Percentages of schools with specialised teachers.

### *Teaching Conditions*

The number of students per class, number of 45 minute periods per week, and additional time spent to complete tasks are presented in Table 6.

### *Class Size and Workload*

| <b>TABLE 6. NUMBER OF STUDENTS PER CLASS, NUMBER OF PERIODS PER WEEK AND ADDITIONAL TIME SPENT TO COMPLETE TASKS.</b> |                                       |      |                                     |    |   |     |
|---|---------------------------------------|------|-------------------------------------|----|---|-----|
| Class Type  | Number of students per class (N=3861) |      | Number of periods per week (N=4052) |    | Additional time spent to complete task (N=4044) |     |
|   | Mean (students)                       | SE   | Mean (period)                       | SE | Mean (hour)                                     | SE  |
| FDC   | 31.3                                  | 0.36 | 28.1                                | 0  | 3.6   | 0.1 |
| HDC   | 26.1                                  | 0.43 | 22.4                                | 0  | 4.3   | 0.1 |

The average number of students in FDC is higher than that of HDC. However, the maximum number of students in a class is 59, while the minimum is five for FDC and two for HDC. This reflects the high demand by parents for their children to attend FDC in mixed schools which offer both FDC and HDC. This shows the need and support for FDS from parents in the transition period.

Teachers in FDC need to teach more periods per week than those in HDC; on average the difference is almost six periods. This is to be expected. That is why the time that FDC teachers spend on preparing for classes at home was slightly lower than that of HDC teachers.

**FINDING 4: For the time being, teachers from FDC have to work with more students than their peers in HDC. FDC and FDS teachers have a heavier workload than their counterparts from HDC and HDS.**

### *Adequacy of Teaching Resources and Classroom Conditions*

Teachers were asked to comment on the adequacy of teaching resources and classroom conditions. The results are presented in Table 7.

Both teaching resources and classroom conditions in FDS are better than in HDS. Only 8.8% of FDS teachers indicate that teaching resources are not adequate, whereas the corresponding figure for their peers from HDS is 16.5%. Regarding classroom conditions, similar patterns were found across the three school types. The difference in teaching resources can be seen in Figure 3. The difference in classroom conditions can be seen in Figure 4.

Regarding the seriousness of the problem caused by teaching resources and classroom conditions, for HDS, fewer teachers report teaching resources as being inadequate, compared to those reporting classroom conditions are inadequate. The difference in classroom conditions between different class and school types is larger than the corresponding situation in teaching resources.

| TABLE 7. ADEQUACY OF TEACHING RESOURCES AND CLASSROOM CONDITIONS. |              |      |             |      |                    |      |
|---|--------------|------|-------------|------|--------------------|------|
| Teaching Resources  |              |      |             |      |                    |      |
| School Type   | Not adequate |      | Appropriate |      | Highly appropriate |      |
|   | %            | SE   | %           | SE   | %                  | SE   |
| FDC   | 8.8          | 1.32 | 82.5        | 1.62 | 7.5                | 1.15 |
| HDC   | 16.5         | 2.16 | 77.3        | 2.2  | 5.1                | 0.97 |
| Mixed   | 11.8         | 1.68 | 80.5        | 1.06 | 5.7                | 0.99 |

| Classroom Conditions |              |      |             |      |                    |      |
|----------------------|--------------|------|-------------|------|--------------------|------|
| School Type          | Not adequate |      | Appropriate |      | Highly appropriate |      |
|                      | %            | SE   | %           | SE   | %                  | SE   |
| FDC                  | 9.6          | 1.43 | 71.9        | 2.1  | 17.1               | 1.94 |
| HDC                  | 31.3         | 2.82 | 60.6        | 2.75 | 7.0                | 1.48 |
| Mixed                | 15.6         | 2.04 | 70.2        | 2.2  | 12.4               | 1.67 |

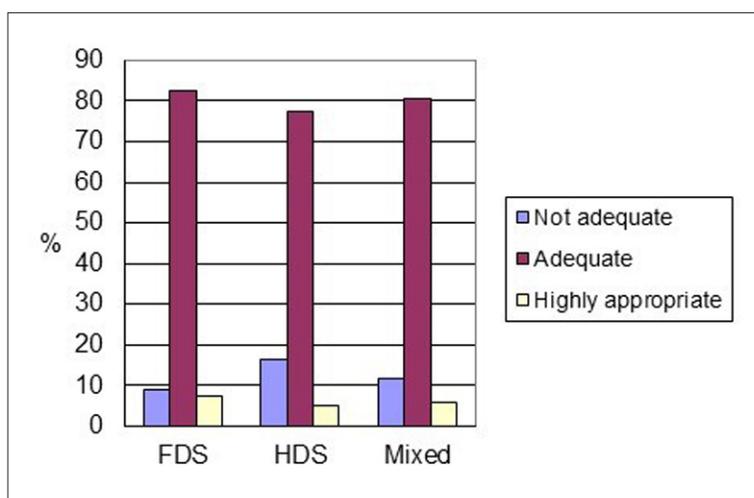


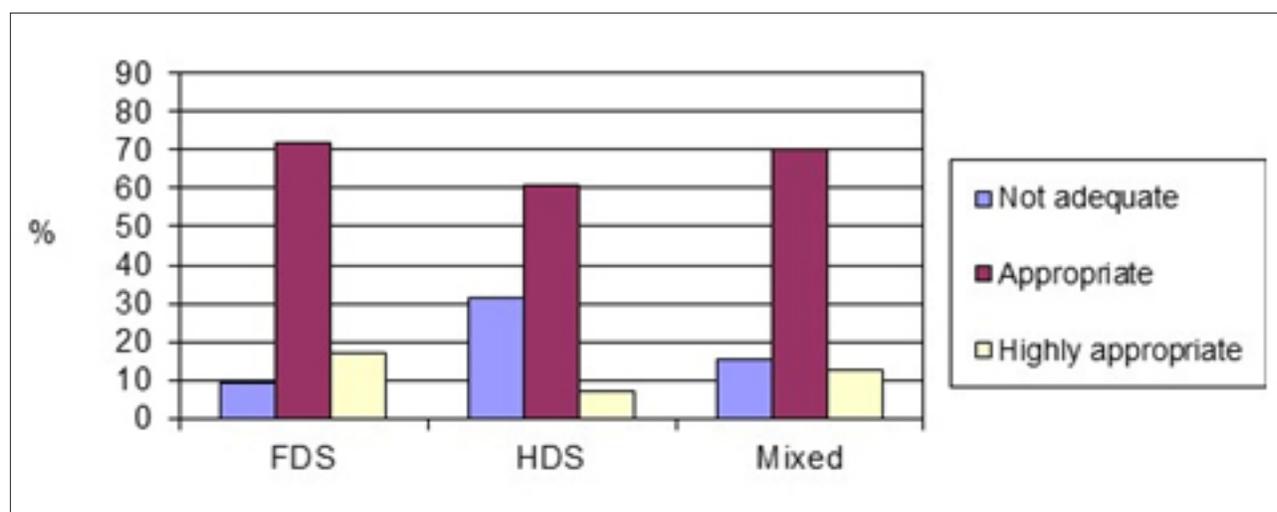
Figure 3. Teaching resources by school type.

**Finding 5: FDC and FDS have better teaching resources and classroom conditions than HDC and HDS. This shows that in order to implement FDS, it will take time to improve HDS and HDC resources.**

**Additional Training Needs When Transferring to FDS**

Principals were asked to identify the additional training needs that would be required if their school were to shift to FDS. The principals’ responses to the question “What additional training focused on FDS would you require for your teachers?” are presented in Table 8 and Figure 5.

| TABLE 8. PRINCIPALS’ OPINION REGARDING ADDITIONAL TRAINING NEEDS OF TEACHERS TO IMPLEMENT FDS. |                   |      |                    |      |                |      |                      |      |                        |      |
|--|-------------------|------|--------------------|------|----------------|------|----------------------|------|------------------------|------|
| School Type  | School Management |      | Pedagogical issues |      | Subject matter |      | Students’ assessment |      | Relations with parents |      |
|  | %                 | SE   | %                  | SE   | %              | SE   | %                    | SE   | %                      | SE   |
| FDS  | 66.4              | 4.11 | 79.4               | 3.4  | 57.4           | 4.23 | 41.4                 | 4.24 | 45.4                   | 4.26 |
| HDS  | 68.1              | 4.69 | 73.8               | 4.33 | 47.3           | 5.09 | 34.8                 | 4.88 | 45.9                   | 5.08 |
| Mixed  | 65.8              | 4.3  | 78.1               | 3.72 | 48.3           | 4.64 | 35.4                 | 4.46 | 39.1                   | 4.49 |



**Figure 4.** Classroom conditions by school type.

The tendency was relatively consistent across school types. The additional training needs for teachers were ranked by the principals in this order:

- Pedagogical issues
- Class management
- Subject matter
- Relations with parents
- Students’ assessment

Pedagogical issues and class management were identified as the two areas in which teachers would need the most professional development when schools transfer to FDS. The principals’ responses to the question “What additional training focused on FDS would you require for yourself?” are presented in Table 9.

| School       | School Management |      | Pedagogical issues |      | Financial management |      | Personnel Management |      | Relations with parents |      |
|--------------|-------------------|------|--------------------|------|----------------------|------|----------------------|------|------------------------|------|
|              | %                 | SE   | %                  | SE   | %                    | SE   | %                    | SE   | %                      | SE   |
| <b>FDS</b>   | 30.7              | 2.33 | 16.3               | 1.96 | 22.6                 | 2.13 | 19.2                 | 2.07 | 15.4                   | 1.89 |
| <b>HDS</b>   | 20.1              | 1.99 | 10.8               | 1.61 | 13.7                 | 1.73 | 11                   | 1.6  | 8.5                    | 1.46 |
| <b>Mixed</b> | 21.2              | 2.08 | 12.9               | 1.73 | 16                   | 1.85 | 12.8                 | 1.73 | 9.9                    | 1.55 |

Figure 6 illustrates that the additional training needs for the principals are ranked in the following order:

- School management
- Financial management
- Personnel management
- Pedagogic issues
- Relations with parents

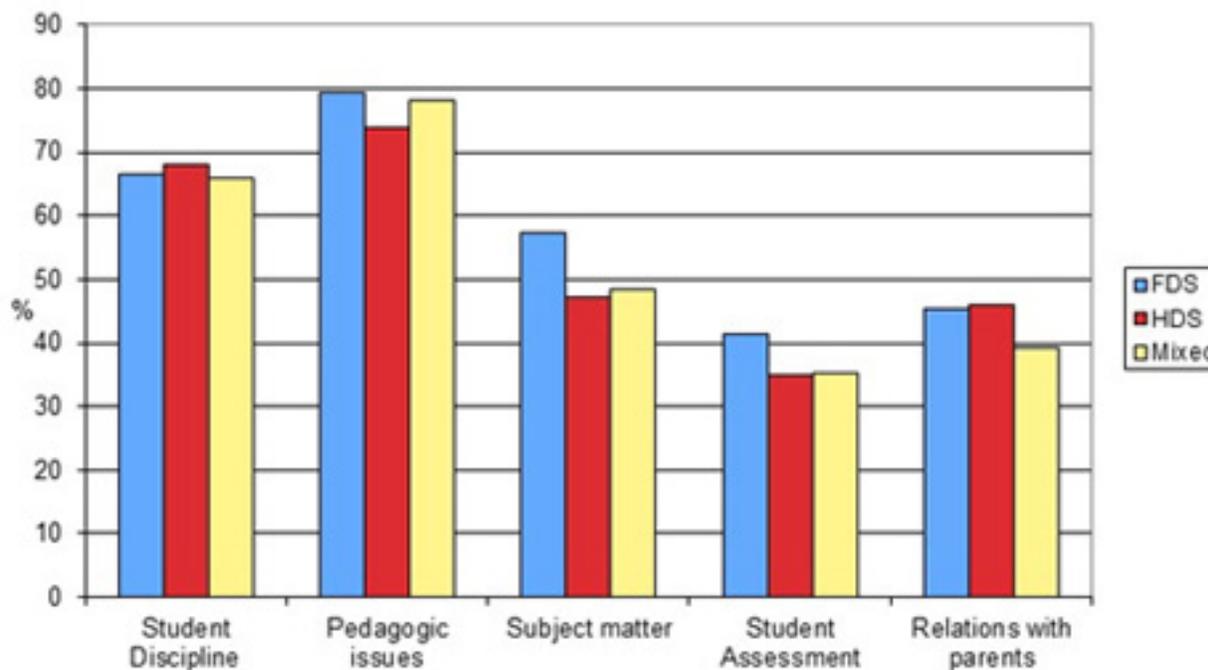


Figure 5. Principals’ opinion regarding their training needs for FDS.

School management and financial management are the two issues school principals need most support for, in order to run an FDS program.

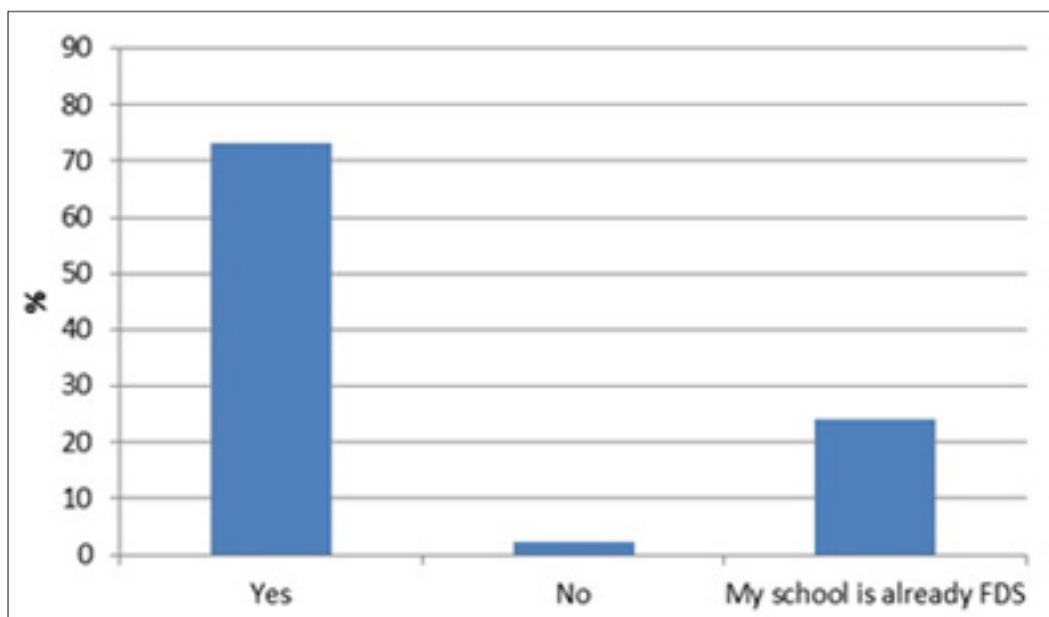
**FINDING 6:** According to school principals, in order to shift to FDS, the two areas in which teachers need additional training are pedagogical issues and class management. The two areas in which principals need additional training are school management and financial management.

### EXPERIENCE AND ACCEPTANCE OF FDS

The extent to which Vietnamese primary schools have experience with full-day schooling is presented in Figure 6.

Less than one third of the schools (28%) are HDS only. More than 70% of schools are either FDS (41%) or mixed (31%). It was also found that approximately 55% of the 413 schools surveyed have more than two years of experience running an FDC program. More than one third of the 413 schools involved in the study have run FDC for more than five years. This creates a good pool of experienced schools that could help towards expanding the FDS program across Vietnam.

Principals’ responses to the question “Would you like your school to become an FDS school?” is presented in Figure 7.



**Figure 6.** Principals’ willingness to run FDC.

It can be seen from Figure 8 that approximately 97% of the principals have either already transferred to FDS, or want to.

**FINDING 7:** More than 70% of primary schools in Vietnam have experience in running FDC or FDS. There is a strong willingness amongst the school community to transfer to FDS.

## **INTEGRATING THE SURVEY AND GROUP INTERVIEW FINDINGS**

After the survey data was analysed, focus group discussions with teachers and principals were conducted in the three regions to obtain detailed explanations of the data and to discuss strategies for a successful transition to FDS.

### **Teachers' Qualifications and Teaching Resources**

The findings related to teachers' qualifications indicate that teachers from FDS, or FDC in mixed schools, are likely to have more years of training than their counterparts in other schools. In addition, the percentages of teachers assessed as excellent at all levels from FDC and FDS are higher than those of HDC and HDS. FDS are also more likely than HDS to have bachelor degree holders working in their schools. Overall, the results demonstrate that teachers from FDC and FDS are of a higher teaching quality than their peers from HDC and HDS. Thus, FDC and FDS have better teaching resources than HDC and HDS. However, the full-day school or full-day classes tend to have more students than the half-day schools and half-day classes. The implementation of full-day schooling nationwide will reduce the pressures of enrolment on the existing full-day schooling and full-day classes to some extent.

These findings suggest that schools with better teaching staff and material resources are those changing to FDS. In mixed schools, highly qualified or high performing teachers are often selected to teach FDC. These classes are often given the best resources in the school. Existing FDS are responding as pioneer schools and are more capable of reacting quickly and making changes to meet the needs of FDS and their communities. In contrast, HDC schools have less qualified teachers and fewer resources. There is, therefore, a high risk that these schools will not have the capabilities or resources needed to be successful in implementing FDS. The results of this study suggest that requirements, criteria and conditions for schools to become FDS or mixed schools should be developed to assist schools to make a more targeted response to improve their infrastructure and teacher resources prior to implementing FDC or FDS.

HDS schools that wish to offer FDC or FDS should be encouraged to recruit more qualified teachers to facilitate their transition to FDS. At the same time, specific professional development courses targeting the skills and knowledge in managing and organising FDC and FDS should be provided for HDC teachers and principals. These professional development courses should be targeted at narrowing the gap in teachers' qualifications and experience.

The difference in the level of teacher training and resources between FDS/FDC and HDS/HDC schools discovered in this study suggests that there are multiple sources of disadvantage for students in HDS/HDC. HDS/HDC schools have less qualified teachers and their students spend less time learning in school. The significance of implementing FDS must therefore be more strongly linked to the issue of equity and the provision of equal opportunities for students from different backgrounds, rather than simply being related to meeting the demands of parents for longer hours of care for children.

### **Training Needs and Professional Development**

The survey of school principals indicated that more than 70% require further training in school management. The areas of additional training identified by principals were school management, financial management, personnel management, pedagogic issues and relations with parents. In addition, almost

80% of principals indicated that teachers in their schools required training in pedagogical issues and 70% indicated their teachers needed training in school management. Teachers also indicated that to adapt to the demands of FDS they will need to be trained in pedagogical issues, school management, subject matters and relations with parents.

Data on the ratios of specialised teachers per student from the survey of principals show that there are more specialised teachers as a proportion of total teachers in FDS than in HDS, and more in HDS than in mixed schools. HDS experienced the most serious shortages of trained teachers in information technology and foreign languages, although FDS also had shortages of information technology teachers, reporting that on average a teacher would be in charge of 1,000 students. By comparison, specialised teachers in FDS schools for music, foreign languages, physical education and arts were reported to be responsible for teaching just 400 students.

### **Experience with and Acceptance of FDS**

The data from the survey of principals demonstrated that many schools in the 20 surveyed provinces have experience in running FDS and FDC. More than 40% of schools run an FDS program and more than 70% currently offer FDC. Almost all principals stated that they want their schools to become FDS and only a very small proportion indicated they were not interested in offering FDS. These results suggest that FDS implementation is being well received and accepted among school principals and is consistent with the worldwide trend toward FDS. Schools can choose to operate both full-day and half-day schooling classes – a gradual shift that provides a start for schools and communities, enabling them to become familiar with problems and issues associated with FDS.

The focus group discussions suggested that parents feel pressured to send their children to after-school classes where FDC is not offered. The implementation of FDS, and to a lesser extent FDC, will help reduce the need for parents to be concerned about after school care and extra tuition for their children. FDS in particular will increase the time children have to learn at school. This is likely to help reduce gaps in student achievement caused by differences in socioeconomic background.

## **CONCLUSIONS AND RECOMMENDATIONS**

The study provided comprehensive information for evaluation of the feasibility and strategies for the primary schools in Vietnam to shift from half-day schooling to full-day schooling. The study also provided policymakers with evidence of the need for preparation of school teachers for an important shift from half-day schooling to full-day schooling.

The evidence indicates that more FDS and FDC programs are being implemented in affluent areas and FDS and FDC are better off in terms of teaching staff and resources. Thus, although FDS is being accepted by schools, there is a risk of increased levels of inequity developing across the school system unless steps are taken to support implementation of FDS in more schools. Teachers are also teaching outside their areas of expertise and shortages exist for specialist classes beyond the core curriculum. Further actions are needed to continue to build the expertise of the teacher workforce.

For each of the findings presented in the previous sections, a consultation process for establishing policy recommendations was conducted with policymakers. The recommendations were then thoroughly

discussed with stakeholders from northern and southern areas of Vietnam. As a result, the following recommendations were formed:

**Recommendation 1:** Provinces should draw on the experience of thriving FDS and mixed schools that successfully run FDC. The specific skills and knowledge used in running FDS by experienced school leaders and teachers should be analysed and integrated into professional development programs for HDS transitioning to mixed schooling or FDS.

**Recommendation 2:** It would be worthwhile conducting studies to understand the problems and issues that lay behind the decision of a small number of school principals who refused the opportunity to make their schools FDS.

**Recommendation 3:** The characteristics of HDS suggest there is a risk that many will not be successful in making a transition to FDS. To reduce the risk, preparation for a transition period is needed. Requirements, criteria and conditions for schools to become FDS or mixed should be developed in order to help schools improve their infrastructure and teacher training to the level required before they can run FDC or become FDS.

**Recommendation 4:** Measures should be taken to recruit better qualified teachers, or teachers with experience in FDC and FDS, into HDS to facilitate the transition from HDS to FDS. At the same time, specific professional development courses targeting the skills and knowledge of running and organising FDC and FDS should be provided for HDC teachers and principals.

**Recommendation 5:** To facilitate the transition from HDS to FDS, priority should be given to pedagogical issues and school management when designing professional development courses for teachers. Similarly, priority should be given to school management and financial management when designing professional development courses for principals.

**Recommendation 6:** More specialised information technology teachers are needed in all schools. Measures will also need to be taken to recruit specialised teachers into primary schools for foreign languages and other specialist areas if FDS is to be more widely implemented.

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# Professional Development and Collaborative Partnerships: A U.S. “Model of Growth and Development” and its Impact on Teacher Growth and Professional Development

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## ABSTRACT

Teacher preparation programs must prepare future teachers to more effectively address the needs of students who are in high-need and low performing schools. The need for high quality teachers in shortage areas is widely noted as persistent and ongoing (Brownell, Sindelar, Kiely, & Danielson, 2010). Indeed, the areas of math, science and special education continue to lack personnel who can meet this demand throughout the United States. The Network for Enhancing Teacher Quality (NET-Q) Research Study sought to train and provide more highly qualified teachers in the areas of math, science and special education. All elements of NET-Q were strategically designed and chosen to enhance teacher preparation at the P-12 and university levels. In this paper, we examine the ways in which the NET-Q project impacted pre-baccalaureate teachers who are being prepared in terms of (a) their attitude towards teaching, (b) their views on their professional growth, and (c) their student outcomes. During the NET-Q research study 2,118 bachelor students and 3,968 graduate students were impacted by changes made to enhance their teacher training programs. Of the 84 year-long residents, 96% completed the program, with 88% of the beginning teachers being retained in teaching in high-need local education agencies (LEAs) three years after initial employment and 91% being retained in the programs after one year. Additionally, 75% of the highly qualified teacher residents hired by the high-need LEA were members of underrepresented groups. Results from the Teacher-Intern-Professor groups with Anchor Action Research revealed an overall effect size of .387 which shows a statistical significance with the resident in the TIP classroom outperforming the experienced comparison classroom teacher when teaching the same unit of instruction and using a collaboratively agreed-upon assessment. Through this research we are beginning to show linkages and evidence in support of a PDS approach at the classroom level.

**Keywords:** teacher quality, professional learning communities, student teaching, school-university partnership

## INTRODUCTION: CONTEXT AND OBJECTIVES

The primary purpose of this research paper is to present a model of teacher recruitment, professional development, and teacher retention. Derived from two multiyear instruction and research projects, the Network for Enhancing Teacher Quality (NET-Q) and Collaborative Resources for Encouraging Transformations in Education (CREST-Ed), this model is designed to increase the number of highly qualified teachers who are committed to high-need schools in the state of Georgia. Project activities of the model include:

- a. enhancing pre-baccalaureate teacher preparation programs;
- b. enhancing post-baccalaureate teacher preparation programs through residencies,
- c. promoting science, technology, engineering and mathematics (STEM) education; and
- d. supporting the implementation of internationally benchmarked, college-and-career-ready academic standards. A comprehensive induction and mentor program, enhanced professional development school partnerships, and collaborative development of parent engagement strategies complement these initiatives.

The NET-Q project is a data-driven initiative that offers resources to address the needs of P-12 partners and learners by preparing high-quality new teachers and bolstering the existing workforce through targeted professional development. P-12 partner needs were identified through a series of meetings that included opportunities for school administrators and university faculty to discuss how best to address ongoing challenges in local schools.

Partner school district challenges were also reflected across the state. The STEM achievement gaps in Georgia remain significant and highlight an urgent need for highly qualified math and science teachers. As few as 12% of new teachers are certified for secondary-level STEM areas, yet almost half (49%) of the 2013 middle and secondary teaching vacancies are STEM positions. Troubling percentages of math (14%) and science (15%) teachers in Georgia are teaching without full certification in their content area (i.e., they are not highly qualified). According to the Georgia Professional Standards Commission, STEM areas will need 2,247 teachers. In 2013, the projected number of teachers who would complete programs in STEM areas was 1,209. The impact of these shortages is especially magnified in rural areas.

Student performance in the STEM areas demonstrates room for improvement as well. For example, 29% of 8<sup>th</sup> grade mathematics students in Georgia scored at or above the proficient level in mathematics on the 2013 National Assessment of Educational Progress (NAEP), lagging far behind the national average of 34%. In high-poverty schools, the 8th-grade NAEP math tests show an average of 23 points lower for Georgia. On the high school End of Course Test, 63% of Georgia students did not satisfy the algebra standards. (Algebra is a gateway course for advanced mathematics.) In addition, 79% of African American students and 71% of Hispanic students scored below the national average. These data indicate that immediate and focused attention must be provided in the preparation of teachers in STEM areas.

In response to these issues, we designed the project to address the following objectives:

1. To determine the impact of a residency model on teacher retention.
2. To determine the impact of academic achievement and student growth through use of the Teacher-Intern-Professor (TIP) model.
3. To determine if Cross Career Learning Communities impact practice and teacher retention.

The NET-Q project, which implements teacher residency and the TIP model with Anchor Action Research (AAR), is grounded in research which strongly suggests that the residency model has a significant impact on the quality of new teachers entering the field (Urban Teacher Residency United, 2014). Pre-baccalaureate and post-baccalaureate reform around extended field experience and hands-on experiential activities in STEM university classes has also been shown to increase the number of

underrepresented students entering STEM fields (Drake, Moran, Sachs, Angelov, & Wheeler, 2011). The theory of change is that STEM, special education, and ESOL teachers can best improve their teaching skills through ongoing, sustained collaboration within a specialized professional learning community such as a Cross Career Learning Community embedded in the schools (Hargreaves & Fullan, 2013). All elements of the project were designed and strategically chosen to enhance teacher preparation at the P-12 and university levels.

### **Residency design**

The NET-Q Teacher Residency provided effective pre-service preparation through innovative and comprehensive structures. Each residency program was grounded in research and required content and pedagogical courses that infuse special education, technology, and literacy across the content areas. Key components of the NET-Q Teacher Residency are strong cohort structures, highly qualified mentors, year-long teaching apprenticeships, and comprehensive induction. Residents benefit from the cohort structure of the programs and through digital communication and collaboration, which continues through induction.

Coursework supports and complements the residents' teaching and experiential learning. The content focus of the teacher residency program includes middle and secondary level math, science, ESOL, early childhood education, and/or special education. Residents benefit from authentic learning with educators who are experienced in content area instruction and special education. Courses emphasize pedagogical approaches that are grounded in research and supported by inquiry and formative assessment. Additionally, teaching proficiency for Residents was evaluated using the Teacher Keys Effectiveness System (GaDOE, 2013).

### **Selection of teacher residents**

Recruiting individuals from underrepresented populations to teach in high-need partnership schools, rural communities and teacher shortage areas is strongly emphasized. Recruitment focuses on mid-career professionals from other occupations, former military personnel, and recent college graduates with a record of academic distinction. Partner districts assist with recruitment through their various communities and communication resources.

All candidates who meet GSU's College of Education & Human Development (CEHD) and departmental admissions criteria were invited to take part in the NET-Q Teacher Residency interview process. Applicants must have a minimum 3.0 undergraduate grade point average. Strong content knowledge or record of accomplishment in the field or subject area to be taught are required (as documented by an undergraduate degree in an associated content area or equivalent experience). Strong verbal and written communication skills are required and may be demonstrated by performance on appropriate tests (e.g., GACE, GRE) and interviews. Official college and university transcripts are evaluated to determine whether each applicant satisfies content area requirements for admission. Applicants must also submit (a) two letters of recommendation, including one academic or professional letter, (b) a resume, and (c) other requirements that may be specified by the faculty. Applicants must provide a writing sample on a topic related to teaching in a high-need school, which will be scored based on content and clarity. University faculty members from CEHD, P-12 representatives, and NET-Q faculty interview teacher residency applicants.

NET-Q Teacher Residents were supported by highly qualified mentors who are rigorously selected and trained. A mentor coordinator collaborated with partnership schools to facilitate this process. The NET-Q Teacher Residency mentor training includes reviewing the needs and development of residents, examining cases, problem-solving, responding, and exploring ways to develop collegial relationships with constructive feedback.

The mentoring model that is used in the NET-Q initiative starts with a systematic selection process, an ongoing needs assessment, and year-long professional development seminars. In the selection process, each mentor is required to:

- hold a valid, renewable teaching certificate;
- have at least 3 years of successful experience in his or her subject area;
- have a solid content knowledge of the current curriculum and related assessment measures;
- demonstrate outstanding instructional skills and technology use;
- model effective interpersonal and communication skills with colleagues and families;
- demonstrate effective classroom management practices in inclusive settings; and
- collect and use data for instructional decision-making.

Upon identifying potential mentors who meet these criteria, guidance is provided through a needs assessment that illuminates areas that they feel could contribute to their growth, and will demonstrate their capacity and willingness to participate in activities related to the project and to commit the necessary time and resources to honing their own skills and to mentoring a pre-service teacher.

As with the resident professional development sequence, the foundation of the mentor series is rooted in the practices of Cross Career Learning Communities (CCLC) such that mentors will have an opportunity to reflect on their previous and current practices in order to identify and share the skill set that has contributed to their success as effective teachers. Additionally, this model of professional development allows for a structured format for exploring new topics that will lead to further professional growth in areas of content and in mentoring. The content that supported these monthly meetings included the modules from the website [www.mentormodules.com](http://www.mentormodules.com), developed for the NET-Q project.

Mentors meet monthly at a local school site. CREST-Ed faculty, district/state affiliates, or recognized leaders with relevant expertise in the field facilitate these sessions. Sample session topics are edTPA, instruction using evidence-based practices (EBPs), inclusive practices with an emphasis on universal design for learning (UDL) differentiated instruction, and models of co-teaching.

Evaluation of the mentor professional development series is informed by two sources. First, mentors provide feedback that includes review and reflection on program efficacy, recommendations, implications for program scale-up, and sustainability. Second, to promote reflection and continued professional goal setting, mentors develop individual growth goals and benchmarks that can be supported by NET-Q faculty into future academic terms.

### **Data-based mentor-resident pairings**

NET-Q took an innovative and data-driven approach to our mentor-resident dyads by investigating the degree of match using the Myers-Briggs Type Indicator-Form M (MBTI) (Quenk & Hammer, 1998). The MBTI is one of the most widely used psychological tests today (Gardner & Martinko, 1996; Offerman & Spiros, 2001) in several areas, including academic advising, career counseling (Johnson, Johnson, Murphy, Weiss, & Zimmerman, 1998), and leadership development (Kiel, Rimmer, Williams, & Doyle, 1996). Through this process, both the teacher resident and mentor complete the MBTI prior to the start of placement. Ideally, partnerships would be made based on these data. Data are analyzed at the end of the residency to determine if the success of the experience was predictable through outcomes on the MBTI measure. This practice establishes a more data-based procedure for pairing pre-service teachers and mentors.

### **Residents' impact on student achievement**

Since receiving a previous professional-development-school grant from the U.S. Department of Education in 2004 and the NET-Q grant from the U.S. Department of Education in 2009, GSU administrators and faculty have been working with the research directors, teachers, principals, and other personnel of four school systems involved in the partnership to develop the Teacher-Intern-Professor (TIP) model. TIP members work together through co-planning, data collection, and co-instruction to address the student needs identified in their classroom. Teaching interns are given the opportunity to work both with their classroom teacher and university professor to help strengthen their teaching experiences. Anchor Action Research is integrated into TIP in the current project.

Additionally, teacher residents serve as the teachers for the Academy for Future Teachers (AFT) program implemented at GSU and in programs germinating in rural partner schools. In previous AFT implementations, teachers from the partner schools have served in the role of content specialists. Residents work as either teachers or research assistants. This experience gives teacher residents the opportunity to continue implementing STEM-related, evidence-based practices with diverse student populations. Teacher residents have the opportunity to assist in analyzing data related to student achievement and program validity.

Candidates, graduates, and faculty across programs frequently express the need for a more comprehensive and intentional induction plan, which can offer meaningful, generative, and context-/need-specific support to teachers in our community, whether they have graduated recently from one of our programs or decades ago in another state. During their final residency year, candidates work with a district coordinator, who supports them as they complete the edTPA evaluation process, participate in CCLCs, and establish effective learning environments upon successfully securing professional teaching assignments. Formalized induction processes included monthly gatherings, both face-to-face and virtual, that address topics such as selecting and implementing evidence-based practices, working with diverse student populations, collaborating with colleagues effectively, and developing sustainable resources for student achievement.

Faculty who participated in facilitating this process included 50/50 district coordinators, who work half time with the university and half-time with the school districts. They work with local school administrators to identify veteran teachers who can support the GSU teacher candidates as they enter into their first two years of teaching. Establishing a robust network of teacher leaders supports our

candidates as they develop professional capital (Hargreaves & Fullan, 2013). Additionally, this process allowed our candidates to develop skills that helped to support their success within the state's new tiered certification system, in which teacher leadership is an essential skill to matriculate towards more advanced certification levels.

## THEORETICAL PERSPECTIVES

### School-University Partnerships

The Professional Development Schools (PDS) movement had its beginnings with the Holmes Group in 1986. The purpose of the Holmes Group was to bring universities, P-12 schools, and teachers together in an effort to create the first school-university partnerships. The purposes put forth by the Holmes Group included pushing reforms in both P-12 schools and teacher education. The goal was to create school-university partnerships committed to improving schools and teacher education programs (Abdal-Haqq, 1996; Clark, 1999; Darling-Hammond, 1994; Levine, 1992). Creating collaborative partnerships where all participants were considered equals was considered an innovative approach in connecting theory to practice, with benefits for university personnel who were considered theorists with little understanding of the realities of teaching in a public school classroom. Reciprocal benefits for the P-12 personnel included exposure to the most recent best practices research provided by the university personnel, creating a win-win situation and moving teacher education forward faster.

The collaborative partnerships, as envisioned by the Holmes Group, provided pre-service and in-service teachers with an opportunity for professional learning experiences. The learning experiences could be provided by either university personnel or P-12 personnel with targeted teaching experiences. These types of experiences that provide additional opportunities for professional development are used to generate school renewal (Clark, 1999; Frey, 2002; Fisher & Frey, 2007; Klingner, Leftwich, van Garderen, & Hernandez, 2004). Continuous school renewal was a new concept initially put forward by the Holmes Group that advocated for the simultaneous renewal of public P-12 schools and the education of beginning and experienced educators. Simultaneous renewal is obtained through the establishment of strong partnerships between universities, schools and professional organizations and associations (Holmes Group, 1995).

The third and perhaps most important was to identify and generate school cultures conducive for professional learning in unique school contexts (Borko, Mayfield, Marion, Flexor & Cumbo, 1997; Darling-Hammond, 1994). The learning environments could include rural, urban and suburban contexts. Understanding complex contextual factors that both constrain and enable teachers to work in the classroom while providing opportunities for teachers to work in those contexts would improve the teaching skills of those individuals, while providing learning environments for students that were conducive to academic achievement.

### Urban Context

Georgia State University, located downtown in Atlanta, Georgia, is committed to providing high quality teachers for high-needs urban schools. This decision was made because of the unique problems that inner-city schools face, such as overcrowding, poor facilities, limited funding, violence and an

under-certified or alternatively certified workforce (Ingersoll, 2001; Kozol, 1991; Kretovics & Nussel, 1994; Meyerson, 2001; Weiner, 1993). Committed to partnerships with high-needs urban schools, GSU works collaboratively with the five largest urban school districts in the Atlanta Metropolitan area to provide pre-service teacher placement and in-service teacher jobs for teachers who have been specifically trained to meet the needs of students in high-needs urban schools. GSU works collaboratively with the school districts to ensure that teachers graduating from GSU have been exposed to culturally responsive pedagogy and curriculum designs that involve building connections to students' cultures. Additionally, GSU trained teachers seek to empower their students and families while rejecting the deficit model when teaching urban students and dealing with their families (Valencia & Solorzano, 1997).

## **METHODS, TECHNIQUES OR MODES OF INQUIRY**

Three primary research approaches were used during the implementation of the NET-Q grant. In addition to the descriptive statistics that were conducted for the teacher retention, implementation of a residence program, and Cross Career Learning Community (CCLC) participation, a survey of certified personnel was completed in both treatment and comparison schools and a detailed meta-analysis was conducted on the Teacher-Intern-Professor (TIP) research, which gave residents a clinical teaching experience while documenting student achievement in a PDS school.

Additionally, qualitative data was collected using individual interviews and focus groups. Administrators, faculty members, residents, mentors and students participated in the qualitative portion of the data collection with important contextual information being collected to support the quantitative data collected from the participating schools.

## **DATA SOURCES OR EVIDENCE**

### **Pre-baccalaureate Program**

There were 301 pre-baccalaureate NET-Q participants enrolled in programs of study at GSU. The grant has provided the impetus for more rigorous admissions criteria, a more rigorous program of study, and an increased production of Georgia teachers to teach in high-needs schools. According to the annual Report of the Degrees Conferred by University System of Georgia Institutions, over the duration of the NET-Q grant, GSU produced a total of 2,118 bachelor degrees and 3,968 graduate degrees in education programs.

Over the past decade, the GSU student population has become larger (growing from 27,000 to 32,000), more diverse (moving from 46% to 61% non-white), and more economically disadvantaged (with the Pell Grant population climbing from 31% to a record 56% in 2013). Additionally, GSU set records this past year for the number of students enrolled in each of the following categories: African American, Latino, Asian American, first-generation, and military learners. GSU's success with diverse student populations is of growing national significance. With a 17% one-year increase, Georgia State University ranked first in the nation among all non-profit universities in bachelor's degrees conferred to African Americans (Renick, 2013).

## **Residencies in Middle & Secondary Instruction**

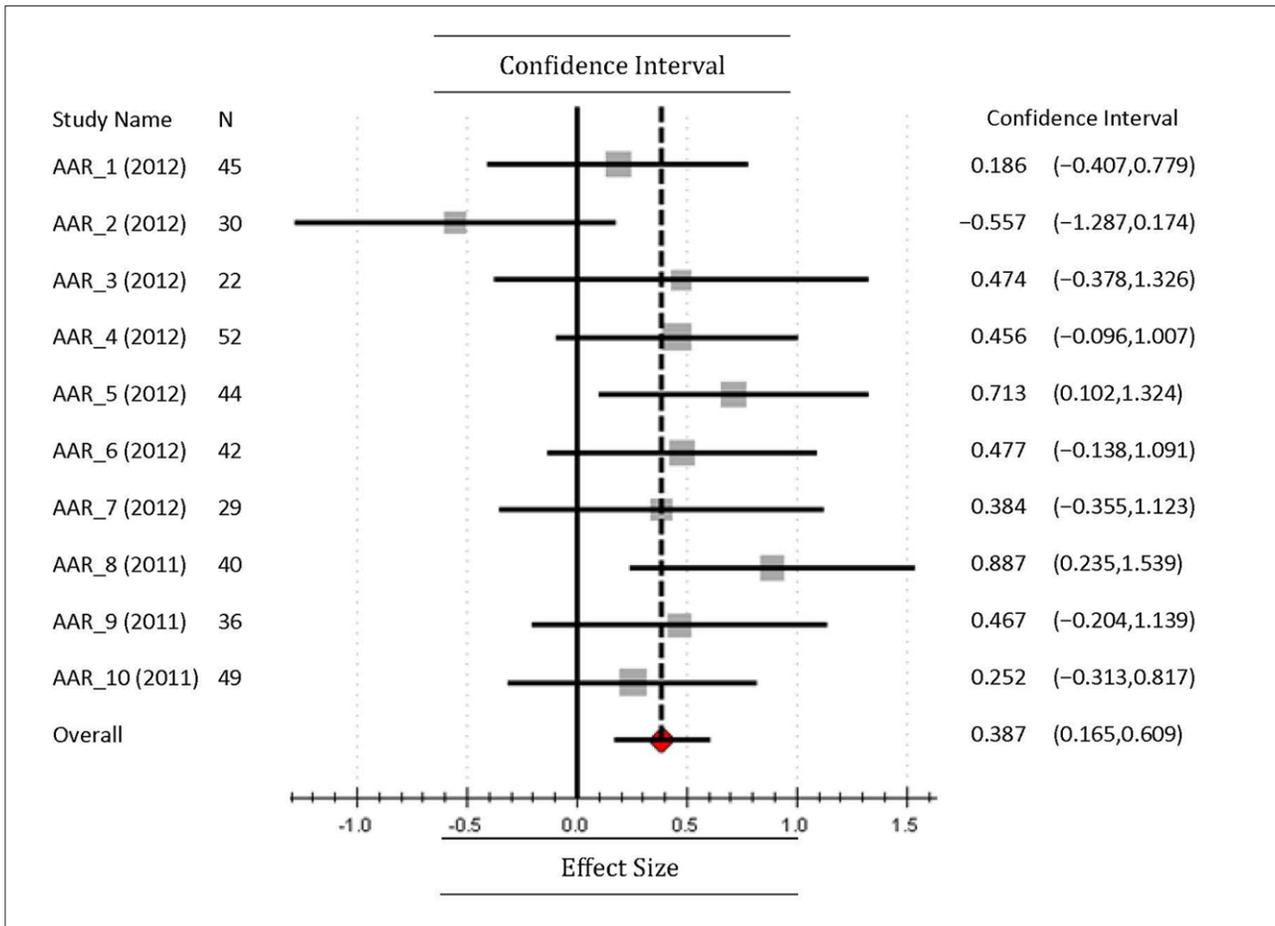
Among the urban and rural partner school districts, NET-Q placed 84 resident student teachers with highly qualified mentor teachers. The middle-secondary STEM teacher recruitment and pipeline efforts increased the quantity, quality, and diversity of its STEM teacher candidates. Further significant progress was made toward increasing the number of initial teacher preparation students for secondary teacher certification in STEM fields. Of the 84 residents, 96% completed the program, with 88% of the beginning teachers being retained in teaching in high-needs local education agencies (LEAs) three years after initial employment and 91% being retained in the program after one year. Additionally, 75% of the highly qualified teachers hired by the high-needs local educational agency were members of under-represented groups.

For comparison, a recent study cited by the Governor's Office of Student Achievement (GOSA) indicated that the 5-year teacher retention rate for Georgia is about 74%. The retention rate for high-need LEAs would be lower, and the study showed the 10-year retention rate for the Atlanta Metro-Area Districts at about 58%. The retention rate of 88% by NET-Q residents is very favorable, particularly because it is in the context of teaching in high-needs LEAs.

Residencies allow pre-service teacher candidates to develop as teachers over the course of a year in a supportive and collaborative cohort. Throughout the full academic year, residents progress through rigorous, research-based, and fully accredited master's level coursework to enrich their learning. Retention data indicates that the NET-Q model integrates a quality, intensity, and duration that produced well-prepared teachers who remain in the field. The three cohorts of students completing the program through the NET-Q program had retention rates of 89%, 88%, and 91%, respectively, three years after graduation. Both the fourth and fifth cohorts of NET-Q students completing their teacher preparation programs during the 2015-16 year is employed at a rate of 100%.

## **TIP Classroom Groups**

A unique feature of the residencies was Teacher-Intern-Professor (TIP) groups, in which residents conducted an Anchor Action Research (AAR) study during their clinical teaching experience in the classroom (Curllette & Ogletree, 2011). An AAR study uses a quasi-experimental design to measure student achievement within NET-Q classrooms. For each TIP group, there is a teacher, intern and professor who work collaboratively to build a lesson which the intern delivers to the class. For each TIP study, students in the research classroom and a comparison classroom are administered a baseline test developed by the teachers of the class, and a post-intervention test is used to measure student achievement. Results of 10 NET-Q AAR studies (401 individual students) collected over a two-year period from 2010 to 2012 were then used in a meta-analysis. The results of the meta-analysis showed an overall mean difference effect size at .387 with a confidence interval from .165 to .609. These data show a statistically significant effect size in favor of the TIP group activity. The results of the meta-analysis support the assertion that the PDS residency produces beginning teachers who are as effective or slightly more effective than teachers in comparison classrooms when teaching the same unit of instruction and using the same collaborative assessment.



**Figure 1.** Forest Plot of 10 Anchor Action Research Studies.

Figure 1 shows the weight and mean gain comparisons of the 10 studies used in the meta-analysis. Only one of the 10 TIP studies showed a negative gain (AAR\_2). This shows that the comparison class had a higher mean gain than the TIP classroom. A repeated measures analysis of variance (ANOVA) used in the AAR\_2 study showed that while there was a significant increase from pre-test mean to post-test mean in both groups ( $F = 158.054, p < 0.001$ ), there were no statistically significant interactions between the TIP classroom and the comparison classroom. The TIP classroom showed a mean gain of 27.667 between the pre-test and the post-test. The comparison classroom showed a mean gain of 35.133 between pre-test and post-test means. This resulted in a mean gain in favor of the comparison class, resulting in a moderate negative effect size for AAR\_2. The results of this study showed that the student gain in the comparison classroom was influenced more by the experienced teacher than by the student teacher in the TIP AAR classroom, resulting in a negative mean difference effect size of -0.557.

The confidence intervals in the forest plot at the 95% confidence interval are shown with both a line and numbers. Because the confidence interval covers zero, the effect size is not significantly different from zero. When reviewing all 10 studies, only two are statistically significant, AAR\_5 and AAR-8.

However, the effect size is .387 with a confidence interval from .165 to .609 when all of the studies are taken into consideration.

The .387 overall effect size produced through this meta-analysis is closely related to the effect sizes identified in large meta-syntheses when considering educational interventions and student achievement (Hattie, 1992; Sipe & Curlette, 1996). The overall effect size of .387 also shows statistical significance with the average intern in the TIP classroom outperforming the experienced comparison classroom teacher when teaching the same unit of instruction and using the collaboratively agreed upon assessment. Through this research, we are beginning to show linkage and evidence in support of a PDS approach for improving student achievement.

### NET-Q Online Survey of Certified Personnel

The NET-Q Online Survey of Certified Personnel has been completed each year. In total, there were 7,677 complete responses from personnel in NET-Q and comparison schools within the partnership. The survey contains items that address the implementation of fidelity in the NET-Q project with respect to National Council for Accreditation of Teacher Education (NCATE) PDS Standards, teacher effectiveness, technology use, classroom management, and general demographics of the certified personnel. We asked certified personnel for their perceptions of the extent to which NCATE PDS standards were present in their school as a measure of implementation of fidelity in the NET-Q project. Consistently across the years of the NET-Q grant, we found that there were significant mean differences in four of the five NCATE PDS standards between the certified personnel in NET-Q schools and the matched comparison schools in favor of the NET-Q schools.

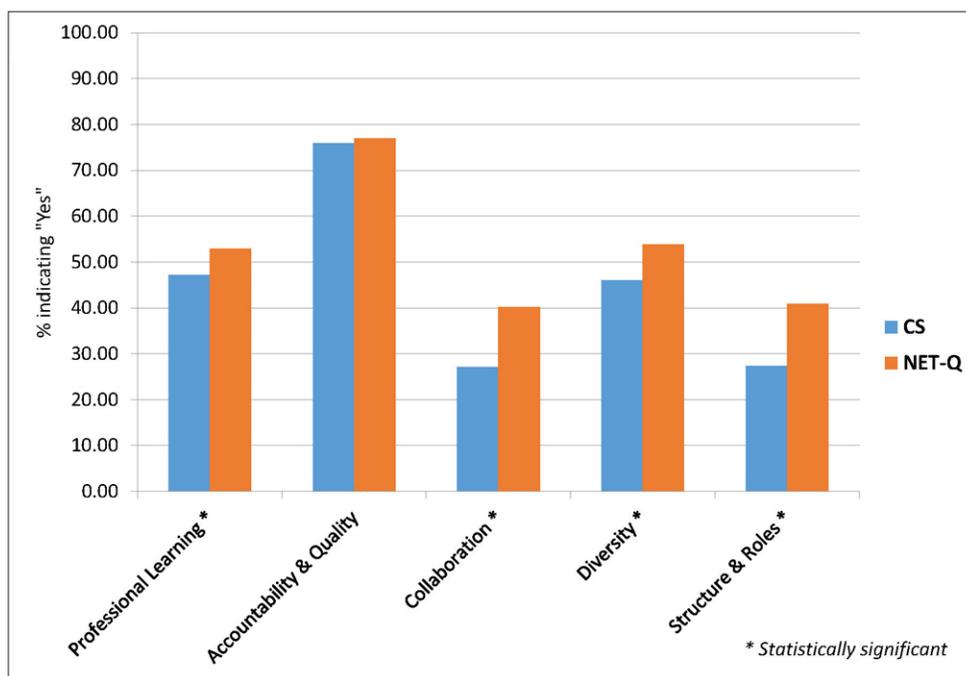


Figure 2. Program evaluation using NCATE PDS standards.

As seen in Figure 2, scales for four of the five NCATE PDS standards showed statistically significant mean differences between the NET-Q PDS schools and comparison schools for the following standards: Collaboration; Learning Community; Equity and Diversity; and Structures, Resources, and Roles. Because we have seen similar findings throughout the NET-Q implementation, we infer program effectiveness viewed from the perspective of NCATE PDS standards.

## **CROSS CAREER LEARNING COMMUNITIES**

Cross Career Learning Communities are school-based, small, professional learning communities focused on the collaborative analysis of teaching, learning, and assessment practices. The CCLC framework is used to provide collaborative, job-embedded professional development on topics that are important to the members of the group (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Additionally, CCLCs are designed to provide induction support through reciprocal mentoring. CCLCs are comprised of student teachers, beginning teachers and experienced teachers, as well as university faculty. The ultimate goals of the CCLC are to improve student achievement through group support of pre-service and new teachers, and to renew veteran teachers through exposure to new ideas and technology. Everyone in the CCLC is given the opportunity to improve their instruction practices through the use of professional dilemmas. Professional dilemmas provide thought-provoking scenarios where group members can draw on participant's expertise to solve the problems in a supportive and safe environment.

The cost of attrition of teachers within Georgia is estimated at 30% of their current salary (Nweke et al. 2006). From 2001 to 2005, teacher attrition in Georgia increased by 15% and cost the state more than \$380 million in 2005 alone (Alfolabi, 2007). In a recent study, 251 CCLC members from the NET-Q Partnership were evaluated as to retention within their high-need schools. Their retention rate was 99.6%. (One of the CCLC participants left teaching altogether.) In comparison, there were 251 teachers matched on eight variables including ethnicity, age group, experience group, and school level. Within the comparison group, 23 of 251 teachers left teaching in Georgia, a 90.8% retention rate. The one-year study indicated that CCLC membership produces approximately a 10% difference in attrition rates in favor of the CCLC members within the group. There are many reasons that teachers leave the classroom, and this study may not be representative of all Georgia teachers; however, a saving of half the indicated rate could have benefits for the state.

## **RESULTS**

### **Residents**

Resident data shows the positive results provided through the NET-Q grant. Residents completed their program as highly qualified teachers, and they were hired either in the school where the residency was completed or by the school district in another high-needs school. Residents indicated that through their participation in the TIP Group, they strengthened their capacities in collecting, analyzing, and using findings from data to directly inform teaching practice. Residents also noted that their participation in the TIP group increased their awareness as educators of the importance of using student outcome data to inform grouping and content delivery/redelivery and to provide ongoing formative assessment.

Additionally, residents cited increased capacities for differentiating instruction within the classroom. They also spoke of their multiple experiences in creating learning stations, labs, group projects, incorporating visual or oral representation of content, project-based learning, scaffolding strategies, incorporating kinesthetic activities in lessons, pacing instruction, providing remediation and enrichment activities according to ability, and large and small group work strategies.

### **Teacher-Intern-Professor Group**

The TIP group was an important component of the NET-Q resident cohort class. Each resident explored with their mentor-teacher and supervising professor expectations for carrying out the project as well as the structure and purpose of the AAR project. The AAR projects were integrated into each resident's program of study around their area of interest. Our meta-analysis of the AAR results produced an effect size of .387, which is small to moderate by Cohen's (1988) ranking. Given that the comparison group is made up of experienced classroom teachers, the .387 effect size in favor of NET-Q residents is substantial.

### **Cross Career Learning Communities**

The resident training included training in the use of protocols and practices while integrating this work within the resident cohort class structure itself. Residents participated in a two-day intensive professional development workshop that focused on developing community and considering individual belief systems as they might relate to teaching. During the resident cohort class, residents gained experience and facility in using the norms and practices established in the two-day professional development training to review dilemmas of practice, review student work, and explore areas of need and/or interest identified by the residents. These methods of practice became integrated into residents' coursework and in their classroom practice. The use of CCLCs in the residents' schools is shown to have increased the retention rate of all teachers in the high needs LEA as well as for the residents.

## **EDUCATIONAL IMPORTANCE OF THIS STUDY**

The NET-Q study provided important data around the success of the resident model when embedded in a Professional Development School context. The study also provided promising data on the linkage of TIP and student achievement in a PDS. Obtaining student achievement data that is sensitive to the instruction is challenging when working with data collected within a public school. After several years of study, we decided to use classroom level data, and we have been successful in linking student achievement data to those classrooms. Our initial thought was to use standardized test data to show academic improvement, which turned out to be insensitive to the teacher's instruction. Dosage factors along with multiple variables made this avenue less than successful. However, success was obtained when using the TIP at the classroom level.

As with any large-scale long-term study, there were many successes and some challenges. Approaches had to be re-negotiated and much was learned about mentors, interns, pre-service and in-service teachers. We explored hiring and retention of residents and classroom teachers in high-needs LEAs. The overall success of the NET-Q study has contributed to the importance of teacher residencies and linkages between classroom level data and student achievement in PDS schools.

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# Nigerian teachers' understanding of school leadership practices in public secondary schools

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## ABSTRACT

This multiple case study explored the understanding of current school practices on teacher leadership in public secondary schools in Nigeria with a view to determining how current school practices influence teacher leadership. Participants were purposively selected. The participants included nine teachers, three principals, three vice-principals and an educational administrator in an educational district in Lagos, Nigeria. The study used semi-structured interviews and documentary analysis to generate data; revealing that cultural, socio-political and religious factors, gender stereotypes, and low societal perception of teachers in school leadership all influence the practice of teacher leadership in schools. The study also showed that adequate funding of public schools and cordial and healthy relationships between schools and their host communities influence teacher leadership practices in schools. The study recommends that teachers should be regarded as professionals, and that teaching and learning activities in schools should be geared towards the achievement and learning of pupils.

**Keywords:** teacher leadership, current school practices, policy changes, school leadership

## INTRODUCTION

School leadership is topical in the provision of quality education. Consequently, the roles and expectations of teachers as school leaders are anticipated to change, reflecting the realities of today by ensuring student safety, while also engaging in teaching and other curriculum related activities (Olujuwon & Perumal, 2014). More than anything else, teachers' skills, knowledge and competencies are necessary for the realisation of educational improvement and goals. The everyday relationships, interaction and understanding between teachers and students provide opportunities for teachers' good leadership tendencies towards implementing changes in a continuous and comprehensive manner in their classroom management (Darling-Hammond, 1999). Research has shown that effective school leadership makes a significant improvement in students' learning outcomes and development (Leithwood, Louis, Anderson & Wahlstrom, 2004). In addition, effective school leadership is the key to large-scale, sustainable education reform (Fullan, 2002; Waters, Marzano & McNulty, 2003, 2005). The various factors that make school leadership effective include the school, teachers and students as well as the redesigning of the organisation to foster collaboration; engaging families and the community, and providing support and resources for managing organizations (Waters, Marzano & McNulty, 2003; Leithwood & Jantzi, 2005). Literature has shown that teacher leadership is the key to educational change and school improvement (Supovitz, Sirinides & May, 2010; Katzenmeyer & Moller, 2001).

Research has shown that teacher leadership benefits teachers, schools, colleagues and students, and thus boosts teachers' morale and increases their pedagogical skills (Frost & Harris, 2003: 493-494). Teacher leadership helps to increase teacher effectiveness and positively affects a teacher's job satisfaction and student performance (Leithwood et al., 2006; Ovando, 1996). Nigeria public secondary schools (NPSS) can benefit from teacher leadership as it can improve student learning, improve teacher quality and ensure that educational reforms work. Teacher leadership will also ensure that there are opportunities for professional growth in career development and create a more democratic school environment (Barth, 2001; Childs-Bowen et al., 2000; York-Barr & Duke, 2004).

However, there are identified obstacles in literature which affect teacher leadership practices in schools which can be mitigated by exploring teacher leadership through the roles of teacher leadership in schools. The top-down leadership approach, hierarchy and bureaucracy inherent in public schools tend to isolate teachers from each other and from administration, and limit the practice of teacher leadership in schools (Ash & Persall, 2000: 15-16). The top-down leadership approach should be replaced with a culture of collaboration, trust and networking in schools (Bryk & Schneider, 2003: 41).

### **Research Sites for the Study**

The five schools in the study are located in an urban area of Lagos and are distributed around Education District V (EDV). These schools were established to provide access to education and are funded solely by the Lagos State Government from its yearly budgetary allocations. However, inadequate facilities such as classrooms, laboratories, toilets, auditorium and medical facilities affect teaching and learning. The five schools where research was conducted had no auditoriums, seminar rooms, medical facilities, or dining halls, but there was a shed close to the wall that was used as a dining area. The morning assembly in these schools was conducted in the open space front of the main buildings and classrooms where effective learning could take place were inadequate. However, in some of the schools, there were new approved prototype blocks of classrooms that adorn the landscape, while others still used the old style block classrooms. As a result of the lack of inadequate classrooms, the teacher-pupil ratio is one to 100. This is against the provision of the policy on education of one teacher to 35-40 pupils per class. As a way out of this problem, the Lagos State Government secured a loan facility of \$90 million from the World Bank for school renewal and projects, but a newspaper report shows that much is still needed to tackle inadequacy in schools. Table 1 provides a profile of the participants in the study. Pseudonyms have been used to protect the identity of the participants.

**TABLE 1. PROFILE OF STUDY PARTICIPANTS.**

| S/N | Name      | N:S                                       | Q                         | G    | YTP | YLP | CLP   |
|-----|-----------|---|---------------------------|------|-----|-----|---|
| 1   | Clark     | Egun Awori senior college,<br>Badagry     | M.ED                      | F    | 25  | 10  | Vice Principal  |
| 2   | Bayo      | Egun Awori senior college,                | Bsc.Ed                    | M    | 22  | 5   | Officer in<br>charge of<br>Special Duties                                       |
| 3   | Adebayo   | Egun Awori senior college                 | M.Ed                      | Male | 30  | 20  | Principal   |
| 4   | Orji      | Highway snr.sec.schoo                     | PGDE                      | M    | 25  | 13  | HOD Arts  |
| 5   | Okoli     | Highway snr.sec.sch                       | M.Ed                      | F    | 25  | 8   | Principal   |
| 6   | Butter    | Red High snr sec.school                   | M.Ed                      | M    | 21  | 10  | Publicity Sec,<br>Zonal Teachers<br>Union and<br>Head, Curricular<br>Activities |
| 7   | Winners   | Red High snr. School                      | 1 <sup>st</sup><br>Degree | F    | 19  | 5   | Year Tutor SS3  |
| 8   | High      | Red High snr sec.school                   | PGDE                      | M    | 25  | 6   | VP (Academics)  |
| 9   | Massarawa | Nigeria senior grammar school             | 1 <sup>st</sup><br>degree | M    | 17  | 6   | Asst HOD<br>Science   |
| 10  | Saida     | Highway senior secondary school           | M.Ed                      | F    | 34  | 10  | VP  |
| 11  | Aladelola | White and Blue senior secondary<br>School | M.Ed                      | F    | 30  | 10  | Principal   |
| 12  | Ayeola    | Education District                        | M.Ed                      | F    | 30  | 10  | TGPS  |
| 13  | Njoku     | White and Blue senior secondary<br>school | M.Ed                      | F    | 25  | 5   | Teacher   |
| 14  | Boladale  | White and Blue senior secondary<br>school | 1 <sup>st</sup><br>Degree | M    | 2   | 2   | Teacher   |
| 15  | Ade       | Nigeria senior grammar school             | PGDE                      | M    | 16  | 2   | Classroom<br>Teacher/School<br>Librarian  |
| 16  | Loveth    | Nigeria senior grammar school             | M.Ed                      | F    | 20  | 10  | Year Tutor  |

**KEY:**

N S (Name of School)

Q (Qualification)

G (Gender)

YTP (Years in the Teaching Profession)

YLP (Years in Leadership Position)

CLP (Current Leadership Position)

## RESEARCH BACKGROUND AND METHODOLOGY

This paper emanates from the study on *Teacher Leadership in Public Secondary Schools in Lagos, Nigeria* which aimed to investigate how teachers navigate teacher leadership practices and policies, as well as their challenges in the context of Nigerian senior secondary schools. It is within this context that this paper presents teachers' understanding of current teacher leadership practices in schools. This study found that effective teaching and learning activities geared towards pupil development, coupled with adequate funding would enhance the practice of teacher leadership (Olujuwon, 2015). This paper therefore adds to the body of literature on the influence of current school practices on teacher leadership in schools.

This study adopted a multiple case, qualitative research methodology which was preferred because of its exploratory and descriptive nature: enabling an in-depth understanding from the participants' points of view of current teacher leadership practices in the context of Nigerian senior secondary schools (The Open University, 2001). Purposive sampling was used as it provides an in-depth study of individuals in their natural environment by providing rich information that can enhance the study and its findings (Berg, 2001; Fraenkel & Wallen, 2003). Participants included nine teachers, three principals, three vice-principals and one educational administrator in Education District V. These participants had experience, seniority and leadership positions. They were professional teachers; eleven of them had more than 20 years teaching experience, and four had more than 10 years in leadership positions. Similarly, the participants were full time staff certified by the Teachers' Registration Council of Nigeria (TRCN), and they were also members of the Nigeria Union of Teachers.

Data for the study were gathered through semi-structured interviews and documentary analysis. This helped to provide a better understanding of current school practice on teacher leadership in public secondary schools. The semi-structured interviews were conducted with three school principals, three vice-principals, nine teachers and one educational administrator in Education District V in Lagos. The interviews were one-hour long at locations chosen by participants, such as school sites during the participants' free periods and after school hours in an eight-month period. These were intended to put the participants at ease, so as to provide an in-depth insight into leadership challenges in schools. Pseudonyms were used to protect the identities of the participants and the schools in the study.

The same research questions were posed to all the participants, and their responses reveal much about teacher understanding of current school practice on teacher leadership in public secondary schools. To enhance the validity and reliability of the study, data from semi-structured interviews were audiotaped and then transcribed verbatim. Teachers' work schedules and the National Policy on Education (NPE) of 2004 were analysed. The Lagos State Teacher's Handbook (2003), the TRCN Teachers' Handbook (2005) and the National Teacher Education Policy (2009) were also consulted. These are statutory documents to be kept in schools, as they outline the aims, goals and objectives of education in Nigeria. These documents were used to corroborate the principals', vice-principals', TGPS's and teachers' interviews, and to provide a better understanding of teacher leadership practices in public secondary schools. Data was presented using direct quotes and participants' comments, and analyzed using content analysis and discourse analysis. This enabled the compression of participants' words into fewer content categories based on explicit rules of coding. It also facilitated an understanding of the interaction of the literal meaning of language of people in their day-to-day activities (Shaw & Bailey, 2009). Three inter-related

processes comprising data reduction, data display and data verification (Miles & Huberman 1994), allowed for the inductive category of coding and a simultaneous comparison of all units of meaning across categories, which formed the themes of the research.

Ethical clearance to conduct the study was obtained from the Faculty of Education's Ethics Committee of the University of Johannesburg; Education District V in Lagos, Nigeria; and from principals of the five public secondary schools. The five schools are located in urban areas in Lagos and are funded by the Lagos State Government. The schools are in the Education District VI and are far from each other. One of the schools in the study is situated in a military facility, two are in an estate; one is close to the seaports in Lagos, and one is situated very close to a major highway. The data from the semi-structured interviews and policy documents were categorised into major themes. These themes centered around teachers' understanding of school practices on teacher leadership in Nigerian public secondary schools in Lagos, Nigeria. Against this background, we asked all participants the same research questions: *What is your understanding of current school practice on teacher leadership in Nigerian secondary schools? Their perceptions were analysed and presented below.*

## FINDINGS AND DISCUSSIONS

### Teaching and Learning in Schools

Teaching and learning are the ways in which a teacher imparts knowledge that leads to a change in understanding and improved academic performance. A teacher's responsibility is to teach students effectively and efficiently, and to monitor and supervise students. Section 31 of the Teachers' Code of Conduct states that: "teachers are responsible for diagnosing, advising, prescribing, implementing and evaluating educational programmes and instructions". Njoku, a teacher, commented that: "As a teacher, the first thing that comes to your mind is teaching the students effectively". High corroborated Njoku's view, saying, "In this school we ensure that teaching and learning, you know, takes place daily". In addition, Massarawa — another teacher — stated that: "As a leader, you ensure that students attend the morning assembly and after that they move into their classes so that teachers can teach them".

Teaching and learning are activities that change behaviour, enhance knowledge and enable the performance of skills, understanding, insights and appreciation (Dashen, Buhari, Zuhumben, Maikano, 2005). James and Pollard (2006) contend that the main aim of schooling is to promote the learning and achievement of pupils through teaching. Thus, the primary responsibility of the classroom teacher is to guide the learning activities of pupils. In the process of teacher and learner interaction, the teacher influences the learner, sometimes intentionally with planned behaviour and sometimes unconsciously (Lagos State Government (LASG), 2010). In achieving educational quality, Nigeria needs to put an intervention programme in place, such as a bursary programme or good salary structure, which will promote teaching that will attract and retain the best teachers in the education system. However, the teachers in the study still view teaching from the technician's perspective and this is a limitation on their capacity to be critical in teaching and learning.

This perception made Neumann, Jones and Webb (2012) claim that without opportunities for teachers to acknowledge and learn education leadership for social justice, they are less likely to lead school improvement initiatives that help students to learn. Zepeda, Mayers and Benson (2003) imply that without knowledge of leadership practices, teachers are more likely to rely on traditional structures

of management and administration which have prevented them from meeting the needs of schools in the new millennium. This shows that teachers need leadership knowledge that will enhance their leadership qualities towards emancipation from hegemony, words and actions that are prevalent in leadership practices in schools.

### **Funding of Public Schools**

The Federal Government of Nigeria has exclusive legislative powers as well as financial responsibilities for funding of federally-owned secondary and tertiary institutions. In addition, each state Ministry of Education has the responsibility of formulating education policy, enacting education laws and providing funding for schools under its jurisdiction. Massarawa stated that, “The government pours money and provides everything”. Similarly, Njoku said that, “The school does not generate any funds. Government takes care of the school by providing running costs and has provided all these laboratory items you are seeing.”

In Nigeria, education is on the federal, state and local government annual budgets. Section 18 subsection 1–3 of the Nigerian 1999 Constitution states that the “constitutional responsibility of government is to provide free education from primary to tertiary level”. Similarly, Section 13, subsection 120 of the National Policy on Education (NPE) 2004 edition states that “education is an expensive social service and requires adequate financial provision from all tiers of government for successful implementation of the educational programmes”. In addition, section 30, subsection 121 of the NPE provides that one of the goals of government is to make education free at all levels. Government therefore welcomes and encourages the participation of local communities, individuals and other organisations.

Other sources of school funding include the private sector, PTA, alumni associations, local communities, voluntary agencies, contributions and donations from philanthropic individuals, multinational companies, non-governmental organisations and donor agencies (Ndu, 2001). Government funding is allocated to education through the yearly budget by the federal and state governments and the Education Tax Fund. Section 30, subsection 122 of the NPE speaks to the sectoral bodies established by government, such as the Petroleum Trust Fund, Industrial Training Fund, and the National Science and Technology Fund that undertake specific projects in tertiary institutions.

The study by Baker (2012) found that an equitable distribution of school funding can improve students’ results. Effective funding of schools leads to satisfaction in both teachers and pupils, because it helps to improve academic achievement. This study corroborates with the research of Kintisch, Risch and Zelno (2007) who studied the importance of school funding for students, schools and the community. According to Kintisch et al. (2007) the amount of funding for a school has a direct impact on the quality of public education as well as student academic success and education outcomes. Moreover, they say that “academic achievement improves when students have access to challenging courses, skilled teachers, safe facilities, small class sizes, up-to-date technology, libraries and science laboratories” (Kintisch et al., 2007).

However, Ekundayo (2010:189) points out that inadequate funding is considered to be one of the obstacles to effective management of secondary education in Nigeria. Despite the huge annual budgetary allocation to education, there are still arguments that budgetary allocation is not in line with UNESCO’s guideline which states that 26% of a country’s Gross Domestic Product should be made available to education.

## **School Community Relations**

The school community relationship is a two-way interaction between the school and its host or local community. A local community is referred to as the catchment area (in other words, where a school derives most of its student population). One respondent echoed the views of other participants and stressed the co-operation between the school and the host community. Adebayo said that, “In Eko Project we have a Project Implementation Committee; we have a representative of the community in that committee.”

Section 21 of the Lagos State Post Primary Teaching Service Law (LSPPTSL) of 2005 mandates schools to maintain a cordial and healthy relationship with the community in which they exist for the overall best interest of the school. It also urges administrators to understand their local community, its characteristics and culture. Cooper, Kotval, Kotval and Mullin (2014) state that school community relationships have been recognised as valuable contributions to both the academic and the host communities.

There are therefore ways in which a school establishes a relationship with its host community: through programmes and activities such as PTA meetings, school events, home visits, school alumni associations, the media, and school publications. Research has shown that effective school community relations engender peaceful coexistence and lead to academic productivity (Nieto, 2004). The research by Agbo (2007) indicates that for a collaborative school and community relationship to thrive, the school must empower the community through genuine discussions that foster collaboration and respect for multiple perspectives. This supports Sang and Sang’s (2011) assertion that maintaining positive relations with the community encourages a good reputation for schools in society and is influential in enhancing positive participation by parents and other community members in school affairs.

## **Teacher identity**

The issue of teacher identity was also raised by participants as part of their understanding of current school practices. It refers to the way in which teachers are perceived by society and how teachers see themselves. Responses from three participants highlighted the society’s perception of teachers. Ayeola, the TGPS, stated that, “Our culture also makes teachers’ confidence level low”. Winners, a teacher, agreed with Ayeola’s view of society’s perception of teachers’ identity, commenting that:

There are certain challenges that are facing us as a leader in Nigerian schools, such as the teacher leader is seen as somebody that is not capable of leading. The society as a whole thought that teachers are not doing anything in the school, despite the fact that you come to the school every day, in the class, you teach in the morning, after school, you go home even with stress. They think that we are not doing anything.

The experiences shared by participants in this study, according to Perumal (2014), require a self-styling that translates into emotion management. These experiences mask their physiological and emotional states to fulfil the role of critical transformative intellectuals who instil and exhibit dedication, faith, and joy despite their personal circumstances. During the colonial era and after independence, Nigerian teachers were regarded as professionals, role models and knowledgeable people (Oyeleke, 2012). According to Abraham, Ememe and Egu (2012), society depends on teachers to discipline the youth and foster their moral and academic development. To Abraham et al., (2012), teachers were encouraged to serve on important committees because they were sources of wisdom and knowledge.

However, at some stage, the respect and status accorded to teachers started dwindling when the military and politicians began to abuse and degrade teachers. Moreover, as respect for their profession declined, so did teachers' salaries (Abraham et al., 2012).

The NPE of 2004 emphasises that teachers are central to national development. The policy, Section 70(a), observes that "no nation can rise above the quality of its teachers". The research of Ali (2000), Ehusani (2002), Ejiogu (1999) and Nwosu and Chukuma (2000) outline the deplorable status of teachers in Nigeria. Ehusani (2002:3-4) states that teachers' salaries are not paid when due, and promotion to the next cadre is irregular. Adelabu (2005) notes that remuneration, motivation and teacher support are poor. Similarly, Agezo (2010) contends that teachers are often not given the equipment they need to discharge their duties.

### **Teacher Mindsets on Gender Construct**

Gender constructs are the roles of men and women as viewed by society, which includes economic, social and cultural attributes and opportunities associated with being a man or woman and the relationships between men and women in a given society, at a specific time and place (Yusuff, 2011:1). Gender constructs influence expectations of what is allowed and valued in a man or a woman (Ali et al., 2011:2). One participant highlighted the prevalence of stereotyping of gender roles. Ayeola explained that:

It has not yet been ingrained into us that what a man can do, a woman can also do and vice versa. For instance, if a female teacher is posted to head a school as a principal, ahead of her resumption, the male teachers in the school she's posted to will believe the teacher is wicked simply because she is female. If the principal is a male who tries often to correct a particular female teacher, she might say the male principal is tactically trying to woo her, but her refusal is resulting in such victimisations.

The respondent highlighted the level of mistrust in leadership in schools if a female teacher is posted to a school as the head. Some of the male teachers will assume that she is wicked. Similarly, if a male head tries to correct a female teacher, his correction might be misconstrued. This is in line with the study of Zikhali and Perumal (2014:221) which illustrated a scenario in Zimbabwean schools, when male school heads did not want to be led by female school heads. They found "that male and female colleagues tested the ability and leadership of their female school heads by ignoring their orders, being rude to them, and not wanting to work. This was done in an attempt to see how the female school heads would react" (Zikhali & Perumal, 2014:221). According to Wood (2009: 232-240), gender stereotypes occur in the workplace and affect the way men and women are classified.

According to Ofoha (n.d: 1), gender stereotypes are roles, or a pattern of behaviour, placed on a particular sex by society, which are mostly beliefs and illogical ideas. Stereotyping is a collection of commonly held beliefs or opinions about behaviours and activities considered by society as appropriate for men and women (Wood, 2013:21-22). Similarly, Perry and Pauletti (2011) posit that "gender stereotypes are people's beliefs about how the sexes differ (descriptive stereotypes) or should differ (prescriptive stereotypes)". Akerlof and Kranton (2000:716-717) explain that gender stereotypes refer to socio-cultural beliefs and practices which tend to limit the development of men and women. This agrees with Naidoo and Perumal's (2014:810) study "that stereotypical cultural expectations and prejudicial beliefs have restricted women's opportunities to lead in schools".

Favara's (2012:2) study on gender stereotypes and education choices among upper secondary schools in Britain revealed that gender stereotyping affects education choices from the age of 14 and the effects, when compared, are larger for girls than for boys. In related research carried out in the Netherlands, Stoker, Van de Velde and Lammers (2012:38) found that in organisations there is still a preference for male leaders with feminine characteristics. This shows that stereotyping exists in choosing career courses and in leadership preference. However, the study of Edwards and Perumal (2014:6015) found the stereotypical interpretation of leadership based on gender to be problematic, as men and women have leadership qualities.

The documents analysed in this study show that Section 22(a) of the NPE stresses equal opportunities and access for all, irrespective of sex, social status, religious or ethnic background. It is also emphasised in the Teachers' Code of Conduct that teachers must relate equally with colleagues irrespective of religion, culture, race, gender and political inclinations (TRCN, 2005). In addition, the Nigerian 1999 Constitution (Section 42) prohibits any form of discrimination on the basis of sex, origin, ethnicity, religion or political opinion.

### **Recruitment of Teachers into Public Schools**

Recruitment is the process of identifying and attracting or encouraging qualified and suitable candidates to fill positions in an organisation based on vacancies (Peretomode & Peretomode, 2001). Section 79(a) of the NPE requires the appointment of academically and professionally qualified persons as teachers and head teachers in public secondary schools. Sixteen participants highlighted the recruitment and appointment process of teachers and principals into public secondary schools based on the new education reform of 2005 in Lagos. In Nigeria, the recruitment process includes placing of advertisements in both print and electronic media, followed by the establishment of a selection committee to screen the applications and then interview the shortlisted candidates. Selection is usually based on performances during oral and written interviews. The criteria for selecting new employees in a school include, knowledge of subject matter, physical appearance, verbal ability and medical fitness.

The following stages of recruitment were identified by the 16 participants. Butter stated that:

Recruitment of teachers, formerly it was organised by the Teacher Establishment and Pension Office (TEPO). The Ministry will place an advert for any suitable qualified candidate to apply, with minimum qualification being NCE or first degree. Shortlisted candidates will be subjected to written and oral examinations. Thereafter, successful candidates will be posted to school and then required to go for two months training at Magodo. They will be attached to a teacher for monitoring and assessment and the report will be sent to the principal.

Teachers for public secondary schools are recruited by TEPO. The above excerpt illustrates the various stages an applicant undergoes before being appointed as a teacher. An effective school requires well-selected individuals as teachers who understand and are ready to fulfil their roles as professionals in an organised environment that is conducive to teaching and learning.

### **The Appointment of Principals**

Principals in public schools are appointed. The sixteen participants noted the criteria for appointment as a principal, as outlined in Section 17 of the LSPPTSL of 2005. Massarawa explained that:

The post of principal is not based on recruitment, but based on appointment. And before you can become a principal, you must at least have spent three years as a vice-principal and must have sat and passed the duty-post examination. So the moment there is a vacancy, they will appoint you as a principal, they will invite you and give you a letter, and that appointment has to be ratified by the commissioner for education. The TGPS will present you, and the commissioner of education will ratify it. They will give you a letter to go and resume as a principal of a particular school.

The respondent explains the process an individual has to go through before being appointed as a principal. An applicant must have been a vice-principal for three years and have passed the duty-post examination. If a principal position becomes available, the district will provide a letter of appointment, which must then be ratified by the Commissioner for Education before the applicant can assume office. Despite the established criteria, responses from six participants identified flaws in its implementation processes. For example, Bayo commented that:

For instance, if you look at our school location, where we are teaching, majority of the teachers here are not “son of the soil” (people born in a particular place). There was a time the Ondos were occupying some of the highest posts in the schools here and they are everywhere. But along the line, the natives started realising they needed to put their own people there too. So today, you now see a situation where a native who is on Level 14 would now be a boss to a non-native on Level 16, which is a violation of the constitution. It is, but they don’t believe it to be so. It is only on paper, but not implemented.

Bayo points out that the majority of the teachers were not indigenous to the area. People from Ondo State in Nigeria were at one time in charge of schools in Lagos State. The situation has now changed, as the local communities want their own people in charge of local schools. Locals are now promoted over non-locals to more senior positions. This is seen as a violation of the constitution and it shows micropolitics at play in the appointment of principals in schools.

### **School traditions**

School culture or tradition is difficult to define, but is best viewed as — the procedures, values and expectations that guide people’s behaviour within an organisation. It is essentially, “the way we do things around here” (Maslowski, 2001). Peterson and Deal (2009:10-11) note that a school’s source of culture lies “beneath the surface of everyday life — an underground river of feelings, folkways, norms and values that influence how people go about their daily work”. Culture shapes interactions and decision-making and increases a sense of community in schools. A school culture that provides opportunities for collaboration, participative decision-making, co-operative, friendly and collegial relationships, open communication and a free-flow of ideas increases a teacher’s commitment and identification with a school (Geijsel, Slegers, Stoel & Kruger, 2009:140).

Two teachers highlighted the issue of school tradition as part of their understanding of current school practices. Butter explained that, “the role expected of a leader must follow the tradition of that school. The leader must follow the do’s and don’ts of the school, as well as that of the host community”. Saida agrees and states that, “whatever is a culture or the social life of where the school is located should be respected, if not, you will not get on with them.”

Leadership roles should therefore align with the tradition of the school and the host community. The local culture should be respected, and a healthy relationship with the host community encouraged. Inuwa and Yusof (2012) describe school culture as the feelings people have about school and whether or not it is a place where learning can occur. Barth (2002) reasons that the school's purpose is to create and provide a culture that is hospitable to human learning. This is consistent with the findings of MacNeil, Prater and Busch (2009) that a healthy environment enables students to achieve higher scores on standardised tests in schools.

This made Leithwood, Louis, Anderson and Whalstrom (2004) reason that school leaders must understand the culture of the school before implementing a change. Therefore, a positive climate makes a school a place where staff and students want to spend a substantial portion of their time; it is a good place to be. It also shows the character of a school, as it reflects deep patterns of values, beliefs and traditions that have been formed over its history. Therefore, the attitudes and orientations of leaders and members of the group need to change, so that teacher leadership can be achieved. This is what Fullan (2001:7) terms "reculturing" and it is the process of changing the way things are done in order to create a culture with a "capacity to seek, critically assess and selectively incorporate new ideas and practices, all the time, inside and outside the organisation". This indicates that beliefs and practices which hinder teacher leadership in public secondary schools can be questioned and changed.

### **Cultural, socio-political and religious factors to consider in distributing leadership**

Cultural, socio-political and religious factors refer to the totality of a country. Seven study participants examined the issue of cultural, socio-political and religious factors as current school practices in distributing leadership. Loveth indicated that:

In this district, I think nobody can deny this fact. There are principals in this district that are a level lower than some other teachers who are still holding chalk. In this school you have a Level 17 still holding chalk in the class, whereas there are some in Level 15 who are already principals. I think the district is in the best position to know. Personally, I think it is this tribal difference, not qualifications.

Loveth believes that tribal considerations are a factor in the appointment of principals. This supports the study of Davidson (2005) in Tanzania that favouritism is prevalent in promotion in schools as well as in selecting people to supervise regional and national examinations or those selected for in-service training. Hofstede (1980) found that there is unequal power in every society. Moreover, power is usually centralised in the hands of a few individuals at the top of the hierarchy (Hofstede, 1991:35).

### **Established Criteria in Teaching and Learning**

Established criteria are codes of conduct that guide teaching and learning processes in schools. There are established guidelines to be followed by all educators. Three teachers highlighted the established criteria for promotion. Clark said:

No, no, no — whether you are a woman or a man, so far you are qualified. There are laid down criteria for those that want to be leaders. For example, they cannot see a university and go and put NCE there. So, they put a graduate. You have to be somebody who has taught for many years, who has gained experience; those are the qualities needed.

Candidates with degrees are considered for teaching positions over candidates with a NCE and years of teaching experience. Two teachers mentioned the need for external help in appointing teachers. High explained that:

But now, despite the fact that we already have criteria, you will agree that many more officers that are qualified for such administrative positions than the leadership positions that exists. That is why I said a perceived hindrance may be lack of political clout ... if for instance, you have been a vice-principal for five years, you have been on Level 16 ... if you do not get baba n'gbejo, (a godfather), nothing will happen.

The available leadership positions cannot accommodate those qualified for such positions. Nigeria has a Teachers' Code of Conduct enshrined in the TRCN of 2004 and revised in 2005 and 2013. The objectives of the code of conduct, among others, are to reawaken the sense of self-esteem, dignity, humour, selfless service and moral rectitude of teachers. It is also to protect the teachers' age-long position of nobility and leadership in the social, moral and intellectual world. In addition, another objective of the code is to build a strong moral foundation for the actualisation of an education system that can compete favourably in the global community, as well as clarify teachers' rights, privileges, obligations and their legal bases (TRCN, 2005).

The code of conduct specifies teachers' relationship with learners, parents, employers, society and colleagues, and the principles of teachers' professionalism in Nigeria. Although the established criteria are put in place to ensure equity, there are loopholes that should be rectified to achieve the desired goals. The policy of school leadership must be reviewed to accommodate other leaders in a school, as this would promote the practice of teacher leadership. This would make principals share power with teachers in schools.

### **Individual Background in Leadership Position**

An individual's background refers to an individual's place of birth, world view and education qualification. Three teachers discussed the role that individual background plays in leadership. Ade explained that, "A person's background will definitely affect him. It will affect his leadership traits". Thus, Ade believes that an individual's background and world view affects his or her style of leadership and characteristics.

The above discussions show that participants recognise the use of power, politics and hegemony in schools, and the way in which these issues affect appointment to leadership positions. Their use runs contrary to the constitutional provisions that guarantee freedom from any form of discrimination. However, understanding the interplay at work does not mean that a teacher has the power to counteract these types of power plays.

### **CONCLUSION**

The findings in the study revealed teachers' understanding of the current school practices of teacher leadership in Nigerian public secondary schools. The understanding may either make or mar the teacher leadership practice in schools. The findings have shown that cultural, socio-political and religious factors coupled with gender stereotypes in school leadership affect teacher leadership practices in public secondary schools. The study further reveals that adequate funding of schools can improve student

results and provide satisfaction for both staff and students. In addition, schools must maintain cordial and healthy relationships with their host communities, and follow the traditions of the community in the best interest of the school. The societal perception of teachers as non-professionals should be done away with in order to achieve effective understanding of teacher leadership practices in schools. The study suggests that the established criteria that guide teaching and learning processes in schools must be followed and respected by all educators, as this will enhance professional development in schools. Similarly, teaching and learning activities in schools should be geared towards the achievement and learning of pupils. As the study has shown, effective teaching and learning activities, adequate funding and healthy community school relations will enhance students and schools. This perception contributes to the understanding of teacher leadership practices in schools.

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# Using the Calypso to Engage and Enhance Adult Teaching and Learning

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## ABSTRACT

Using a phenomenological theory approach within the qualitative tradition, this study determines and explores perspectives of adult learners and their teachers on the use of calypsos as a pedagogical tool in adult education. Two guiding questions were presented to ten participants — five adult learners and five tutors. The questions were used to solicit information about the expectations and challenges anticipated or faced by participants using nation-building calypsos to engage adult learners. The data developed as narratives were analyzed using Constant Comparative Analysis. Results of the study indicate that there are: (1) Significant constraints in the accessibility to calypsos (2) Areas of resistance to usage of calypsos, and (3) Areas of willingness to engage with calypsos.

**Keywords:** adult education teacher and learner, calypso, culturally responsive materials, culturally responsive teaching, literacy, nation-building

## INTRODUCTION

Adult education in the Caribbean has been neglected and is at risk (Jules, 2012; Dawkins, 2011; Ellis, Ramsay & Small, 2009). Many adult learners experience deprivation of prosperity and pleasures, struggling even to sometimes enjoy the rewards of lifelong learning (Comings & Cuban, 2007). One critical area is reading, identified as a key catalyst in learning for all (ALTA n.d.). Among the themes that prove to be attractive for adult readers is that of nation-building, where learners and teachers might focus on positive imagery and the exploration of cultural identity, critical thinking, and better pedagogy for an informed citizenry (Freire, 2000). Adult educators should utilize curricula that interest learners and are relevant to their experiences.

### Objectives of Study

Emerging from a post-colonial society and a decidedly elitist education, many teachers appear reluctant to utilize indigenous or localized folk narratives, including musical forms, in their classrooms (Conrad, Forteau-Jaikaransingh, & Popova, 2013). This seems pervasive from infant to higher education.

One rich source of folk narratives is the calypso, which documents political, social, comedic, and party commentaries that most adult learners identify with. When such issues contribute to nation-building, then the message is both relevant and positive. Nation-building calypsos refer to those songs where positive messages serve as a medium between the ideals of the nations' leaders and the people, and might serve to heal any social fractures (Rohlehr, 2013). With this in mind, calypsonian and scholar Dr. Hollis

Liverpool, along with academics like Conrad, Forteau-Jaikaransingh, & Popova, (2013), have urged educators to consider using localized popular folk narratives. These may include other folk narratives in song including rapso, calypso, spoken word, chutney, zouek, dance hall, and parang.

It is within this context that the study explores and shares the perspectives of adult learners and tutors in Trinidad about using calypsos in education. Two guiding questions reveal the perspectives and issues involved when using nation-building calypsos as a pedagogical tool to enhance the reading ability of adult literacy learners.

### **Significance of Study**

It is the intent that this study will bring focus to the value of the calypso, as the narrative of the folk in song, to local adult teaching and the learning community (Liverpool, 2003). It will allow for the sharing of the voices and perspectives of some key stakeholders on the potential benefits and challenges faced in using calypso in their teaching. Most importantly, this study will contribute to the potential role of calypso in transforming education generally.

From an international perspective, the use of calypsos in adult literacy, focusing on nation-building calypsos, will contribute to the discussion on the critical use of culturally relevant materials to engage all learners. Whether learners are regular, talented, or ‘at risk’ youth or adults, or whether teachers are experienced, novice, social-justice conscious, or demotivated — the use of culturally rich lyrics and rhythms like the calypso can serve as powerful engagers and facilitators of learning and effective teaching. We cannot go wrong in valuing and utilizing the voices of the citizenry, marginalized or dissident. This has been evidenced through popular songs such as Woody Guthrie’s “This Land Is Your Land”, “We Shall Overcome”, popularized by Pete Seeger, or “Blowin’ in the Wind” by Bob Dylan [all from the United States]; Auld Lang Syne [England]; and Bob Marley’s “War” (Jamaica), which are for the folk and of the folk. Similarly, calypsos and other localized oral musical traditions, can serve to share the stories of the folk, remind them of their histories, motivate and prepare them for a more active citizenry.

## **THEORETICAL FRAMEWORK**

### **Adult Education**

Knowles (1980) conceptualized andragogy and posited assumptions about adult learners that must be considered. These assumptions include that adult learners are self-directed and that facilitators must consider life experiences as an aid to teaching adults. Jarvis (2010) expounded that at the heart of Freire’s belief is the assertion that education is not a neutral process. Rather, its purpose is to facilitate freedom of the oppressed. Freire (2000) believed that education was an emancipatory tool for the community. Chen (2014) noted that learning is elevated among adults when it is authentic and their learning experiences are considered.

### **Culturally Responsive Pedagogy**

Gay (2002) identified culturally responsive teaching as the use of cultural characteristics, experiences, materials, and perspectives of ethnically diverse students for effective teaching. Gay contended that culturally diverse materials and strategies should be evident for every subject taught.

Al-Amir (2010) cited in Taylor (2006), advocated that to improve adult learner literacy skills, cultural practices, local literacies and historical qualities must be considered. This allows for better understanding of literacy use, and subsequently the participants' progress. Taylor argued that literacy only makes sense "when studied in the context of social and cultural practices" (p. 501). Adult learners, as all learners, should be given contexts where they understand and empower each other (Al-Amir, Chartock, 2010).

### **The Calypso**

Born in Trinidad and Tobago, with African and arguably French connections, the calypso has been described as: "a living vibration, rooted deep within my Caribbean belly / Lyrics to make a politician cringe or turn a woman's body into jelly" (David Rudder). Another calypsonian, Kelvin Pope, known in the calypso world by the sobriquet Mighty Duke, describes calypso as a "feeling which comes from deep within / A tale of joy or one of suffering / It's an editorial in song of the life that we undergo".

Popova, McEwen, and Bristol, (2013, p. 4) extend the calypso description as being "an interaction, a conversation. While there might be a singular performer, the audience is still integral to the performance as a whole". The singer "becomes the voice of the people, expressing what is in their minds and hearts" (Holder, 2001, p. 147). Often, the audience participates, sharing their voices through a "call and response" (Toussaint, 2009, p. 141). This, according to Riggio (2004), stems from chantwell/griot performances that preceded modern day calypso. Audience members are encouraged to call out and repeat particular words or phrases that highlight the purpose for the calypso, which in turn, promotes a unique, intimate relationship between singer and audience. Phillips (2006) notes that calypsonian's language often uses metaphor and other literary devices that:

... invite the development of a cognitive process, that helps in unveiling of the hidden meanings contained in these linguistic symbols, thereby increasing the awareness of those involved, and hence the potential for the audience to take action in a direction that, ultimately, can bring about resolution of the audience's prevailing issue" (p. 64).

Calypso is often political. Changes in power and agendas impact the content and style of lyrics and performances. Political groups, church organizations, carnival committee members, aspiring singers in schools, partying enthusiasts and others, hold a stake in the calypsos that are performed. While some calypsos have been associated with the denigration of women, the art form has emerged into differing genres, genders, and agendas (Devonish, 2011; Mahabir, 2001). Today, more women and girls than ever before compete successfully in calypso competitions. Calypso has also maintained its political focus on issues important to the folk; serving as enactments of the struggles and rhetoric found in society (Rohlehr, 2001, p 21). Calypsos cover many avoided topics such as domestic violence, prostitution, murder, and other concerns within a culture (Bruno, 2011).

### ***Calypso and Education***

Conrad, Brown, Philip, Bentley and Popova (2015), Popova, McEwen, and Bristol (2013), Rohlehr (2013), Liverpool (1990), and Conrad, Forteau-Jaikaransingh, and Popova (2013) are among those who have explored the relationship between calypso and education. Conrad et al. (2015) and Popova et al. (2013) consider the calypso as an expression of cultural production, used to understand historical and

socio-cultural dynamics of the Caribbean. These authors examine calypsos' potential to address diversity and social justice in educational contexts. Rohlehr notes that the art form projects colonial education and its resistance to change. According to Rohlehr, "the quality, scope and content of education, [with] a scathing scrutiny of syllabi, teachers, schools, text books and methods of discipline" have been thoroughly analyzed (p. 193).

Education remains the most effective tool for the future development and progress of the nation (Conrad, Forteau-Jaikaransingh & Popova, 2013); with literacy being an important aspect in measuring success. One approach to addressing this literacy challenge has been the shift in pedagogical style from teacher as "dispenser of knowledge" to more constructivist or interactive roles. This incorporates the learners' sociocultural background, prior knowledge, skills, and abilities within a more relationally engaging classroom context that facilitates cultural modelling, student-centered pedagogy, and the use of oral traditions (Accioly de Amorim, 2009; Freire, 2000).

However, teachers — bowing to administrative demands and expectations of parents — still focus on being the dispensers of information, rather than becoming interactive facilitators of learning (Conrad et al. 2015). There is also the perception that non-localized materials are more important to success than the culturally bound. Calypso and other local literary forms are thus relegated to carnival time, rather than infused throughout the curriculum as a unique art form.

Calypso should be seen as both a historical and cultural record that can fulfil numerous social, educational, and regional roles. Indeed, Searle (1983, p. 99) describes it as "another form of political education". Using calypso in critical multicultural education holds the potential for transforming both society and the contexts in which teaching and learning takes place. Liverpool (Newsday, 2012, 1990) laments on the inefficient use of calypsos by educators. He contends that the political, social and economic history of the people can be realized through calypsos, as these can set the tone for lesson activities, student motivation and student engagement.

## **METHOD**

Data collection and representation include the perspectives and shared experiences of five tutors and five adult learners regarding the use of nation-building calypsos in their teaching and learning.

### **The Research Questions**

There are two research questions:

1. What are the perspectives of the participants regarding the value of nation-building calypsos as culturally and pedagogically relevant to engaging and enhancing reading among adult learners?
2. What issues do teachers identify that limit or support the use of calypsos generally and specifically nation-building calypsos, as a pedagogical tool with adult learners when teaching reading?

### **Research Design**

This is a qualitative study using the phenomenological approach. We contend that this approach is the most appropriate method to explore the phenomenon of adult learners' and tutors' perspectives of

and experiences with using nation-building calypsos. The method will afford rich data collection for describing and understanding (Leedy & Ellis-Ormrod, 2010).

### **Rationale**

Phenomenology is an approach that explores and describes the common meaning and experiences of participants about a central phenomenon. Data collection consisted of qualitative interviewing. Following data collection, the researchers determined and described the ‘what’ and ‘why’ of these experiences — or the essence of this phenomenon — as shared by the participants. Moustakas (1994) in Creswell (2013) asserts that this essence is to be described, not analyzed nor explained. Phenomenology might be linear or historical, covering an extended period or a single event. It is the experiences and perspectives of the phenomenon that are provided in this study. Through this phenomenology, we are able to determine and confirm any emergent pedagogical benefits or methods from the perspectives shared by the participants.

Stages in the phenomenological process comprise:

1. Identification of the phenomenon and shared experience, and a readiness to understand these.
2. Identifying researcher bias (bracketing) and committing to open-mindedness (Campbell, 2011; Creswell, 2013).
3. Framing of participants’ demographics and data collection.
4. Describing the sum of experiences and the context of the phenomenon so that the essence is effectively conveyed.

### **The Participants**

There were five tutor participants [AD, AR, DP, JW, SB]. Their ages ranged from 45 to 60 years. Each participant had a background in teaching, with three of them currently working in the private sector. The other participants were five learner participants, [AML, BAL, CAL, PAL, RAL] between 18 and 37 years.

### ***Sample Selection***

The participants were selected through purposive sampling and were identified specifically because they met specific criteria. Requirements included:

- tutors with at least three years of experience teaching adult learners
- themselves adult learners; and
- part of the Adult Literacy effort in Trinidad.

Four of the ten participants were recommended by the Adult Literacy Tutors Association (ALTA) of Trinidad. Ten participants were selected to ensure enough depth and thick description. This data was sufficient to determine the essence of the phenomenon.

### ***Data Collection***

Through the use of qualitative interviewing, the participants shared their perspectives and experiences as a means of answering the two research questions:

1. What are the perspectives of the participants regarding the value of nation-building calypsos as culturally and pedagogically relevant to engaging and enhancing reading among adult learners?
2. What issues do teachers identify that limit or support the use of calypsos generally, and specifically nation-building calypsos as a pedagogical tool with adult learners when teaching reading?

Seven open-ended interview questions were also presented:

1. Tell me a bit about yourself.
2. What do you think about using culturally responsive materials like the calypso in your teaching of reading?
3. Share one of your favorite calypsos and how you believe it might be used to engage learners.
4. How do you define ‘nation-building calypsos’? Any examples?
5. How can nation-building calypsos be used to enhance the teaching of reading to adult learners?
6. What are some of the key issues faced in using calypsos as a pedagogical tool?
7. Do you believe that nation-building calypsos have any special significance as teaching tools? Can you identify an example?

### ***Justification***

Interviews allow for first-person accounts, diverse perspectives, and the exploration of the shared phenomenon (Seidman, 2013; Polkinghorne, 2005), such as using nation-building calypsos in teaching and learning among participants. Polkinghorne (2005) suggests that interviews provide the most accurate account of a phenomenon, as they present a first-person account and permit varied perspectives. Englander (2012) acknowledges that qualitative interviewing is preferred because it allows for gathering the meaning of a phenomenon as lived by other subjects.

### ***The Interview Protocol***

A semi-structured interview protocol involving open-ended questions aimed at providing answers to the two research questions was used. The guiding questions permitted the same kinds of data to be gathered from every respondent, enhancing quality, thoroughness, and dependability (McNamara, 2009). Each interview took about 30 minutes.

### ***Analysis/Sharing the Data***

Data was not analyzed in the traditional sense of seeking to explain the perspectives or experiences of participants, but rather to synthesize explanations from the participants and determine the essence of their responses to the phenomenon. To achieve this end and to determine emergent themes, we were primarily guided by the Constant Comparative Analysis Method of Analysis (Creswell, 2013; Glaser & Strauss, 1967). While associated with grounded theory, this method of analysis is not exclusive to

it (Fram, 2013; Thorne, 2000). Being comfortable with the process and believing that it would meet the general procedural guidelines of phenomenological analysis developed by Moustakas (1994), the co-researchers opted for the CCM — which includes horizontalization (key words and statements) and shaping clusters of meanings into themes. The CCM was used as a guide to identify the essence of the phenomenon rather than to analyze the participants' responses, in an effort to develop any possible theory of understanding. As such, there was no obligation to develop, organize, or present the open codes identified into axial or selective coding.

The CCM involves the researchers repeatedly reading the transcripts of the interviews and using open coding focused on key words, incidents, contexts, and experiences that synthesize the participants' perspectives and experiences. Words, phrases, sentences and paragraphs facilitate the emergence of themes from the transcripts. This open coding allows for identifying and shaping the development of the themes; while further reducing and recoding allows for locating, identifying, and describing the phenomenon's context and essence (Glaser & Strauss, 1967).

### **Bracketing and Trustworthiness**

The co-researchers, Lisa and Dennis, address the traditional concern of validity through the qualitative dimension of trustworthiness. For Lisa, acknowledging her dispassion and bias against calypsos has helped to disassociate her personal perspectives, and so maintain the integrity of the analysis. She attributes this passion to the selective playing of calypsos, contending that she identifies calypsos as synonymous with the carnival season. As an enthusiast about music year-round, calypsos were one small part of her musical interests. Dennis' acknowledgement of his love for calypso since childhood helped him to explore the possible resistance perceived from some of the narratives. He had to repress his perceptions that some tutors and adult learners were anti-calypsos. On the other hand, his appreciation of calypso and experiences with religion and other family members who were at a cross-roads with the art form helped him to understand the cautious views of some participants. Sharing these views with each other and with some participants facilitated bracketing and allowed for less bias in identifying the essence of participants' responses.

The co-researchers maintained trustworthiness through descriptive validity; and ensured accurate transcripts and observations. Participants were invited to review, modify and confirm the transcripts and the co-researchers agreed to inform them of how their views were represented.

## **FINDINGS**

The 10 participants shared how they view and experience nation-building calypsos for engagement and reading skills improvement. The interview data revealed six categories related to using calypsos in teaching and learning. For the purpose of this paper, excerpts have been tabled to demonstrate evidence in each category.

Table 1 illustrates the evidence for valuing culturally responsive materials. All participants believed that using CRM was important in teaching reading. Three participants shared concerns as to whether calypsos were 'relevant' to ALL the learners.

| <b>TABLE 1. VALUE FOR CULTURALLY RESPONSIVE MATERIALS (CRM) EXCERPTED FROM ORIGINAL TABLE.</b> |  |
|--|--|
| <b>Respondent</b>  | <b>Evidence</b>  |
| DP   | “While learning to read, you are also learning about the culture of the country, and about relevant issues”.   |
| AD   | “Using the local music helps the student relate more to the material that we teaching”.  |
| JW   | “For many, calypso is a familiar medium and depending on the topic can generate a discussion and . . . new words, new creative ideas, and discuss the use of both standard English and the dialect”.   |
| AR   | “. . . appreciating the uniqueness, the difference of our local dialect instead of seeing it as ‘deficit’ is also important to signal to our students that regardless of geography, Tobago or Penal, or socioeconomics — we talk the same language. Not to say that speaking standard English, articulating our words well, and being able to express ourselves writing formal English are to be undervalued”. |
| RAL  | “It gives a sense of pride and belonging as they . . . understand the value of reading . . . reading material better [being] based on social, cultural, economic background real life experiences. It also contains vocabulary familiar to the reader which will encourage”.   |
| CAL  | “It helps the student to view reading as not only important in the classroom but for the world outside the classroom . . . [that]the student can relate to [and] can feel a sense of value and respect as they are able to bring their experiences into the classroom”.  |

### **Favorite Calypsos**

Participants were asked to share one of their favorite calypsos and state how it could be used to engage users. All participants agreed that calypsos can be used to teach rhyme, sight words, sounds, and use the grammar rules for decoding the words given during the sessions. DP added that it can be used to facilitate engagement, as the calypsos are often rhythmic. Calypsos identified included: “Caribbean Woman”, “Ganges and the Nile”, “Missing Generation”, “Portrait of Trinidad” and “River of Tears”. Table 2 details evidence from participants related to their favorite calypsos and how they might be used in teaching and learning.

### **Nation-building Calypsos (NBCs)**

Participants were asked to define what their definition of NBCs and to give an example. All participants stated that nation-building calypsos dealt with some sort of positive or country-building lyrics. Table 3 shows evidence of responses pertaining to NBCs.

### **Enhancing adult learning**

Facilitators were asked how NBCs can be used to enhance the teaching of reading to adult learners. Among the suggestions made were that NBCs can facilitate:

- engagement, because they address topical issues;
- critical discussion and argument; and
- language development through vocabulary appreciation and sight words, phonemic skills development, syntax, rhyming, and pragmatics.

| <b>Respondent</b> | <b>Evidence</b>  |
|-------------------|--|
| AD                | “River of Tears” as a song that can be used to teach sight words, “ing” words, “-tion” words and even to rhyme.  |
| AR                | Ella Andall’s “Missing Generation” and noted that it can be used to help students to value learning and become independent learners and more productive citizens.  |
| DP                | “Caribbean Woman” and even though DP didn’t remember who sang it, she saw that the song not only helped the learner, but enhanced the lessons by teaching the hidden curriculum. The song spoke of how a male should treat women”. |
| JW                | “Trinidad is my Land” (Portrait of Trinidad), which was sung by Mighty Sniper. He indicated this calypso to teach the hidden curriculum that includes morals and values.   |
| AML               | “Never ever worry”, by Lord Pretender and Brother Resistance.  |
| RAL               | Rudder’s “The Hammer” – a tribute to steelband innovator Rudolph Charles. For RAL, adult learners, many from ‘hotspot’ areas, may be motivated through recollections of heroes in their communities.                               |
| CAL               | Rudder’s “Bacchanal Lady” as her favorite as it affords much opportunity for imagery and discussion.   |

| <b>Respondent</b> | <b>Evidence</b>   |
|-------------------|---|
| AR                | Songs in which the narrative, the lyrical content and/or presentation addresses, celebrates, or critiques important events, topics of national concern like racism, social injustice, and brings attention to exemplars.    |
| AD                | Those songs with a positive message to the citizens. In recent times nation-building songs seem to only come from students. I remember though Singing Sandra’s ‘Voices from the Ghetto’ and ‘Mother Earth Crying’ by Baron. |
| DP                | Calypsos that “talk about togetherness and working together to better the country”.   |
| JW                | Songs that “speak about the positive things that happened in the past and what can we do to go forward”... Merchant’s ‘Let us build a nation together’.   |
| AML               | Those that are “positively uplifting, to inform the citizen and inspire all — young and old”.   |

Table 4 provides evidence of respondent data from interviews on how calypsos can be used to enhance the teaching of reading.

### **Calypso Challenges**

The interview questions solicited the participants’ views on key issues faced or possibly faced when using calypso as a pedagogical tool. Some themes around challenges of using calypsos included: religious bias and moral concern, negative attitudes, difficulties accessing calypso lyrics, and concerns about the message of some calypsos. Table 5 provides evidence of these themes from interview data.

| <b>TABLE 4. ENHANCING ADULT LEARNING EXCERPTED FROM ORIGINAL TABLE.</b> |  |
|---|--|
| <b>Respondent</b>   | <b>Evidence</b>  |
| AD  | Shared that music, especially calypsos, can be useful. “Some will pick up faster through the song than through the workbook”. She saw its potential to teach rhyme, sight words, sounds. “I can even use the grammar rules for decoding the word.  |
| AR  | Contended that calypsos facilitate engagement. “Even if the learner does not particularly like the calypso selected, it compels them to share opinions”.   |
| JW  | Agreed that in addition to engaging learners, it can enhance teaching reading by teaching the standard English. Having learners identify topics and then find or create calypsos that include mnemonics to teach reading could be exciting. Also mentioned that it can be used for oral discussion before the reading lesson.  |
| DP  | Believed that the calypsos can be played and using a language experience approach the learner can talk about their experiences and use those words that are unfamiliar to form the vocabulary and spelling for the lessons. “Phonics can be taught by using the word of the calypso to sound out words and break it into parts. We can use the phonic cards and let them find words from the calypso that sound like those on the card.” |
| SB  | Asserted that rhyming helps show the similarities in words, and calypsos are about rhymes. So you can use those rhyming words to help teach a topic. The repetitive element allows for learners to identify the words more easily.   |
| AML   | Contended that calypsos’ engaging quality was significant in enhancing learning. Also noted... how personally appealing to the learner on the importance of literacy, calypsos can be inspirational . . . “even to the point of getting learners to read or even write their own calypso”.   |
| PAL   | Sees a dynamic link between literacy education and the positive messages of NBCs. She shares: “NBCs can enhance adult learners through identifying sight words, nouns, adjectives, verbs and rhyming words. It can assist in their pronunciations, fluency, prosody, and word building”.   |

### Significance of Nation-building Calypsos

The last question that was asked of participants was if they believed that NBCs had any special significance as teaching tools and if there were any examples that they could identify. All participants believed that nation-building calypsos can be used as a significant tool. Table 6 shows excerpts from the interviews that demonstrate evidence of the participants’ beliefs that NBCs are a significant instructional tool.

### DISCUSSION

As shared earlier, this discussion does not attempt to analyze the reasons behind the participants’ perspectives and experiences. However, as scholars interested in the role of calypso in teaching, we have searched the narratives for themes that illustrate the phenomena of using calypso in adult teaching and learning. Four major themes have emerged: Recollections, Resistance, Readiness, and Reclamation.

The revealed essence of these lived experiences portray calypsos in teaching as having immense potential to engage learners through rhythm and content as well as to enhance learning through various literacy devices. Calypsos have been used or considered by the majority of tutors [four of five] and

enjoyed by the majority of adult learners [four of five]. However, these have been used sparingly and with reservation. From the tutors' perspective, they do identify and acknowledge that using calypsos has great potential. Learners reveal some excitement and comic relief at the thought of calypsos in their content and learning experience.

The apparent reservation with calypso in pedagogy for adult teaching and learning seems to be associated with both tutors and learners' recollections and interpretations of calypsos; anticipated resistance of stakeholders — some based on religion; perceived difficulty of finding materials; and a reluctance to claim calypso as part of their cultural identity.

| <b>Respondent</b> | <b>Evidence</b>  |
|-------------------|--|
| AD                | Admitted her bias about calypso because of her religion. She shares that once it is an NBC there would be a greater inclination to use it. "I would lean to more Gospelypso". She believes that "God gave every one different talents and those should come back for His kingdom".   |
| AML               | Stated her religion disallows music in schooling, so calypso would be an issue although "not impossible based on lyrics and presentation".   |
| AR                | Identified that one key issue is attitude. Changing these, he contends is: ". . . not an easy task". People are more closed-minded than they appear. Many stakeholders hold the view that calypsos are either inappropriate or 'not reflective of their culture'. He also stated: "While one can easily google many pop songs lyrics, those of calypsos have been more difficult to get, as it traditionally was limited to a local audience. Recently however, many artistes upload songs with lyrics on You Tube". |
| SB                | Shared that when their mother heard calypso on the radio she would take it off. She believes however, that if there is discussion before the session about the objectives of the lessons, that this may help allow for its use. SB further noted that some people just don't like calypso. "They probably from another era or they like pop or some other type of music from foreign. They think that calypso is not real music. But using local calypso may make them come around".                                 |
| RAL               | Emphasized that it's also about the wise selection of calypsos. "Some calypsos are filled with lyrics that may not be age-appropriate, so you as the teacher will have to carefully pick calypsos that will be appropriate to the age group, attitude, and content you are teaching".  |

## Recollections

Tutors and learners all recollect their childhood or young adult experiences with calypso. The older tutors shared that calypsos were not identified as an art form to be modelled or sought after by many within their generation. This might have been because of the association between calypso and the 'common folk', spiritual/religious standards and/or personal and socio-economic aspirations. Nevertheless, there was an equal readiness to embrace the calypso. The experience of thinking about calypso as culturally responsive materials that might be used in teaching literacy, brought mostly positive recollections. As a consequence, all the participants indicated some readiness to explore, revisit, suggest, and select 'appropriate' calypsos and lyrics for learning.

| <b>TABLE 6. SIGNIFICANCE OF NATION-BUILDING CALYPSOS EXCERPTED FROM ORIGINAL TABLE.</b> |  |
|---|--|
| <b>Respondent</b>   | <b>Evidence</b>  |
| AR  | Shared that “. . . nation-building calypsos allow for critical discussion. It brings the learners’ consciousness to the importance of being informed citizens”. Suggested using Mighty Sparrow’s song, ‘Education’. “[This song] can be used to motivate learners and teachers alike. To remind us of where we came from and our role in helping others to escape the trap of poverty, or the abuse of power and privilege”. |
| DP  | Stated that NBCs are significant because the learners, though aware of the songs, may not have listened attentively to the lyrics. DP believes that by using the lyrics in the learning environment, it will help broaden their views of calypso. “I think using things that are local like the calypso can help unify the nation and the people regardless of race and beliefs”.  |
| AML   | Contends that calypsos can be used to “build morals and values”.   |
| BAL   | Sees the issue as not so much of special significance, but the challenge of seeing calypsos as Creole in song.   |
| PAL   | Asserted that NBCs provide relevance and opportunities for learner participation as a stakeholder in choosing, modifying and re-presenting songs which improve personal literacy.  |

### **Resistance**

This was manifested through concerns about the appropriateness of calypso lyrics and possible sensuality or vulgarity that might be attributed to the rhythms. Some participants identified calypsos with bacchanalia, unsophisticated lewd expressions, and protest or indiscipline by the unruly masses. Calypsos were also identified as worldly which was counter to many who strive to live more religious lives. There was also some concern for calypsos to be potentially divisive — especially those that tackled political, social justice, or race/ethnicity issues. However there was also a readiness to explore the voices of the ‘other’ and to consider that good teaching and learning in diverse society involves tolerance and the willingness to look at multiple perspectives.

### **Readiness**

On a more positive note, participants indicated a readiness to consider and reconsider using calypsos. It was almost as if they needed the opportunity and time to think this through, as facilitated by the questions and discussion. Along with this was an increasing awareness that now there are websites where lyrics can be found, and that there are multiple YouTube and other videos where calypsos — some with lyrics — can be accessed. Further, there were some participants who experienced epiphanies as they spoke about how calypso might be used.

### **Reclamation**

Along with those apparent epiphanies, there seemed to be an increasing positive awareness and awakening of messages coming out of calypsos — that they tell our stories as a people. The narratives suggest that learners and tutors were willing to consider writing calypsos, collectively or individually, and so claim

or reclaim its role in their identity. The co-researchers found this inspiring. They also acknowledge that this might be a momentary idealism by some participants and may not be sustained beyond the interview.

Overall, the study indicates that:

1. calypsos are considered but not widely used;
2. there is some clarity needed to differentiate between calypso genres;
3. calypso lyrics were often difficult to acquire;
4. teachers/learners were willing to utilize calypsos, but were concerned about resistance from stakeholders; and
5. tutors and learners saw calypsos as potential strategies for engagement, critical thinking, and teaching.

## THE ESSENCE

The exploration of the participants' responses reveals the essence of their experiences of using calypsos as one of conflict, primarily characterized by concern or resistance and linked to their recollections of earlier experiences with calypsos in non-educational settings. Participants welcomed the opportunity to reflect on the value of calypsos as culturally responsive pedagogy, and expressed a readiness to utilize calypsos in the future and to reclaim its role as narrative of the folk.

## CONCLUSIONS AND RECOMMENDATIONS

The success of any program or teaching method is hinged on clear goals, which are relevant to the learners' and society's need to promote social consciousness (Liverpool, 1990). As educators in adult learning environments, we know that the individual learner's unique needs must be addressed. Liverpool acknowledges that educational objectives must remain relevant to the learner, susceptible to change, and flexible enough to accommodate change.

Adult educators should go beyond the role of simply instructing the learner with the information needed. Rather, their task is to educate the learner using resources that are sometimes unique to Trinidad and Tobago and broaden the scope by which facilitators can introduce local material in the pedagogy of imparting knowledge. This allows for the learner to develop not only their reading skills, but also social consciousness and social unity (Liverpool, 1990). Having a creative culture and using it in teaching encourages the fostering of a base for aesthetic education and helps learners as well as other persons in Trinidad and Tobago to understand their backgrounds through the creative culture — which includes music, art, poetry, and rapso.

Arguments have been brought that calypso should not be used in the classroom as a tool for learning, because of the language that sometimes contains double entendre. However, Liverpool argues that if there is greater analysis of the calypso, there would be emergent themes that cover much of Trinidad's historical, social, political and economic events. In addition to a literacy class, these calypsos can also be used in history, ethics and general studies classes to teach relevant lessons. Calypsos teach learners to communicate with others in a language that the learner understands — therefore allowing for self-expression (Conrad et al., 2015; Liverpool, 1990).

The co-researchers assert that quality pedagogy for a better education is enhanced when educators:

- prepare adult learners and teachers to appreciate and utilize indigenous and/or localized cultural materials like calypsos;
- collaborate, develop, and make accessible resource banks of such videos and lyrics; and
- engage learners through activities that facilitate recollection, reflection and an understanding of how culture can impact education.

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# The Perception of Plagiarism Among Students in one Teachers' College

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## ABSTRACT

Plagiarism in academic writing has been a cause of concern for many years. Despite many attempts to penalise students who are found guilty, the problem persists, indicating that a different approach is needed. If the incidence of plagiarism is to be decreased, the need to understand students' perception of the issue and their rationale for the practice must now engage institutional policy decisions and framework. A questionnaire was administered to students across the four-year Bachelor's in Education Programme after a series of discussions and workshops about plagiarism, which revealed that their understanding did not reflect the attitudes desired. The goal was to formally gather data which would be helpful in creating a policy framework that would emphasise training in the culture of academic writing and facilitate students taking their place as critical thinking professionals in education who understood the role of academic writing in the creation of knowledge. The results indicated that while students could define plagiarism, their application of the knowledge did not consistently bear out this awareness. While admitting that it was wrong to plagiarise, many did not think there should be any consequences. A policy framework which seeks to build upon student awareness while correcting the gaps in their knowledge must now be the focus, so that their training is fit for purpose.

**Keywords:** plagiarism, students' perception, policy development, bachelor's degree in primary and early childhood education

## INTRODUCTION

Plagiarism in academic writing has been a cause of concern for many years. The problem persists despite many measures which penalise students, and therefore a different approach is needed. In order to help students decrease plagiarism, there is a need to understand their perception of and their rationale for the practice. There is also the need to initiate them into and scaffold them on their journey through the culture of academic writing.

### Background for the Research

This research has a threefold source. It arose, firstly, out of personal observations of the writing of students who came seeking help as they struggled to meet the demands of their various assignments, as well as marking the assignments of many who did not bother to seek help. These observations led to discussions with those who came for help about their writing and having mini-workshops with them in order to help them learn how to do citations, summaries and paraphrase and interrogate both the information found and the viewpoint of the authors.

Curiosity became a second source, as the researcher felt the need to understand the various reasons students engaged in plagiarism after being given instructions about it. The discussions heightened the curiosity as, when students were asked to explain the reasons they had correctly cited a source in one place which was incorrectly cited elsewhere (sometimes on the same page), they were unable to do so. Their answers revealed that for many it was a guessing game and that they were ignorant of the established rules.

In the midst of the discussions and workshops with students about their writing came the requirement to draft an institutional policy for plagiarism. In order to create a policy relevant to the needs that were expressed, the researcher took the view that training, rather than punishment, needed to be the focus; as students who had obviously received instruction about plagiarism still had difficulty with consistent application. They needed assistance with articulating the standards required and applying them rigorously until the required behaviours became automatic. However, in order to accomplish such training, their rationale for plagiarism needed to be taken into account and an institutional plan put in place to provide guidance from the beginning to the end of their programme.

### **Statement of the Problem and Rationale**

Based on the discussions and workshops held with students, it was concluded that their understanding of Plagiarism and its consequences differed significantly from the requirements of professional practice. This difference in understanding was supported by their various approaches to using information and their methods of completing assignments. Students' perception of academic writing was faulty, due to an incomplete and sometimes completely incorrect understanding of its protocols.

The study is therefore qualitative and descriptive in design because its foremost goal was to understand students' perception of plagiarism and to use that understanding to guide them in internalising the standards of academic excellence required by academic writing, through the formation of a policy that would help to initiate them into the rigours of the culture of academic enquiry, and provide an institutional framework to guide them from entrance to exit in their programme of study.

### **Significance of the Study**

This study is significant because, as illustrated by Figure 1, it will provide information that has implications for both present and future stakeholders in education. Administrators will gain the necessary information to successfully plan the best ways of training students so that they are gradually initiated into the standards of academic writing. These plans will provide guidance to lecturers as to how best to meet the students at the point of need and guide them to where they need to be — understanding, acceptance and execution of established standards. The students will, through consistent and rigorous practice, internalise the standards and through internalisation and execution, take their place in the annals of academic excellence — acknowledging the contribution of those who went before, while preparing themselves to correctly guide those who come after.

### **Research Questions**

1. According to the students across the year groups — What is plagiarism?
2. According to the students across the year groups — How do they engage in plagiarism?

3. What ways for deterring plagiarism do students prefer?
4. How can the information collected be used to guide the development of a plagiarism policy?

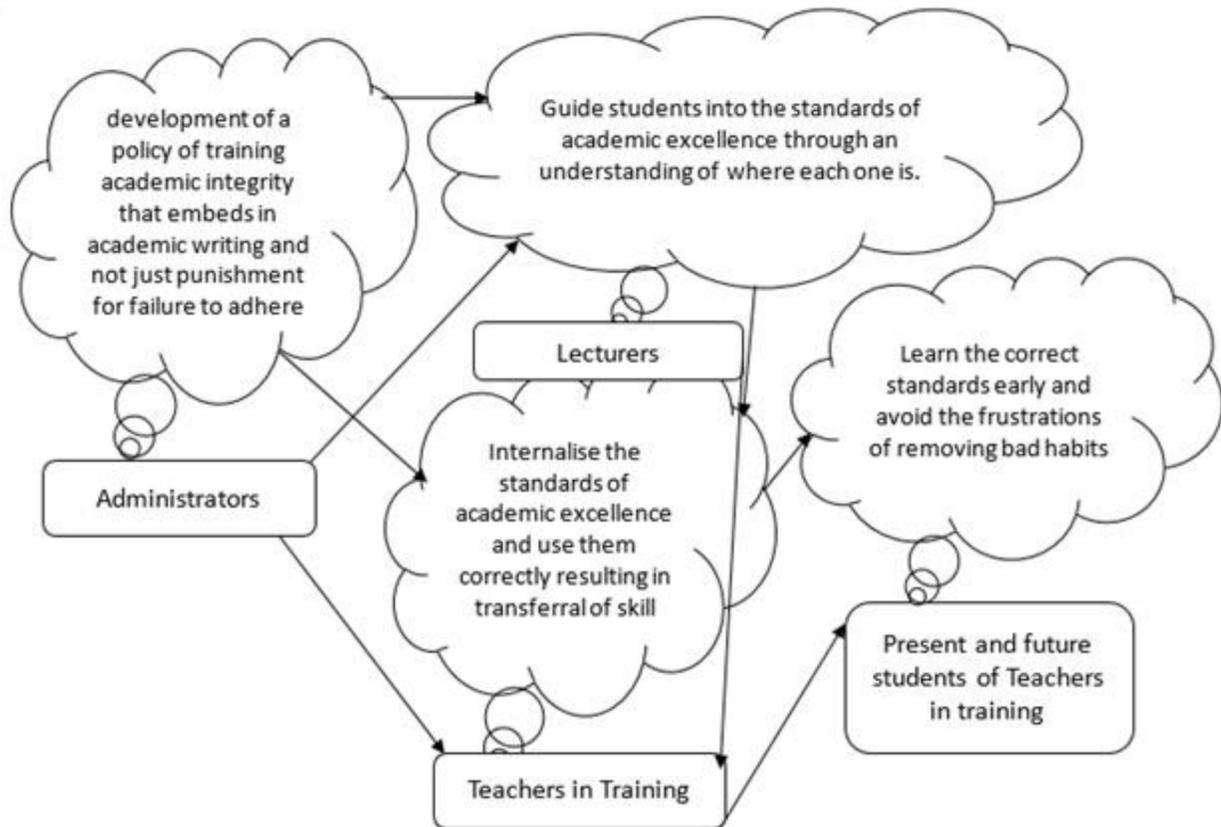


Figure 1. Present and future stakeholders in education.

### Definition of terms

*Plagiarism* is using someone's ideas or words without giving them credit. It is expressed in various ways, but all result in the reader not being able to distinguish the original source and concluding wrongfully that the present writer is the author of those ideas and words (Mahmood, 2009). Plagiarism results from an incorrect understanding of the demands of academic writing and one's relationship to it as an author.

*Perception* is defined by the Cambridge online dictionary (<http://dictionary.cambridge.org/dictionary/english/perception>) as "a belief or opinion, often held by many people and based on how things seem", while Sharma (2015) stated that it involves a "process of interpretation of a present stimulus on the basis of past experiences" (par. 6). Students draw conclusions based on their observations, which they are interpreting based on their past experiences. Since those past experiences did not lay a solid foundation in the rigours of academic writing, the conclusions drawn are faulty at best and totally incorrect at worst.

Therefore, to correct this situation, students need to be held accountable to the correct standards of academic writing, so that they will be able to draw new and correct conclusions which will enable them to transfer the skills learnt from one context to another.

Standards of excellence, as understood in this research, are the skills to conduct research, analyse information found and use language correctly, as well as the capacity to correctly use the conventions of writing such as citations, paraphrasing and summarising. These are necessary skills to not only pass courses but to succeed in the future.

## LITERATURE REVIEW

Plagiarism occurs among students in Jamaica and internationally at all levels of education. Research has shown that wherever writing is required, plagiarism is a factor that must be dealt with, as students engage in the process of learning how to write well and become familiar with the required standards of academic excellence. Dias and Bastos (2013) of Portugal examined the issue from the perspective of teachers in secondary schools, while Sutherland-Smith (2005) of Australia examined the situation at the tertiary level and Doró (2014) dealt with the problem in the context of first year students of English at a large Hungarian University.

### What is Plagiarism?

Plagiarism has been variously defined, but all definitions agree that it involves the use of ideas and words belonging to others as if they were one's own (Fish & Hura, 2013). Sutherland-Smith (2005) commented that this concept is at the root of many institutional policies and could be traced to the Statute of Queen Anne of 1709, where it was stated that "the man was the *father* or *begetter* of the work and the text itself is the *child*" (emphasis in text). She went on (quoting Mallon, 1989) to say that to use an idea without the permission of the author was equivalent to kidnapping, and pointed to the Latin root of the word plagiarism. Since all can agree that kidnapping is a serious charge in any era, students need to learn, and through rigorous practice internalise, the skills of academic writing so they do not become guilty of kidnapping. To help them requires understanding their reasons for engaging in the practice and their perception of the issue (Harris, 2015).

Maurer, Kappa & Zaka, 2006 (cited in Mahmood, 2009) divided plagiarism into four basic categories: accidental, unintentional, intentional and self-plagiarism; while Macatangay (2015), citing Walker (1998), listed seven types. The types of classification used not only affect the types of penalties administered, but also reflect the diversity of opinions on the subject and demonstrate the varying perceptions which surround the topic.

### What is perception?

What exactly is meant by perception? As stated earlier (Sharma, 2015) defined it as "a process of interpretation of a present stimulus based on past experience" (par. 6). This view is supported by Uniview Worldwide (2006) who pointed out that perception was influenced by both expectations and prior experience. Michaels and Carello (1981) stated that "a theory of perception is a theory of knowing the environment". These statements are significant in that they provide a base to begin to work with the students and to help them on their journey. Experience has informed us that many students do not know

the environment that is called academic writing because their prior experiences did not provide the necessary information, and that means their perception of what they now need to do is incorrect. They still have expectations based on those experiences which need to be addressed in order to help them form new ones.

To form new expectations, the standards must be modelled for them so they understand clearly what is required. Modelling must also be accompanied by explanations as to the rationale for each standard — why are citations necessary? Why must the required format be consistently applied each time? Why is a reference page necessary? How does following each requirement meet current expectations and prepare them for future goals? In short, the benefits of writing well and letting their voice be heard must be highlighted so they are attractive to students; and as McGowan (2005) pointed out it is this kind of explanation that has been missing from the debate. Without the kind of explanations that demystify and break down the requirements into understandable steps, those new to the environment have no flag to guide and help them to learn the new environment.

### **Rationale, detection and deterrence of plagiarism**

Both Mahmood (2009) and Macatangay (2015) argued that students engaged in plagiarism because they did not know what it was. Macatangay further stated that this ignorance results in an inability to recognize its various forms, while Mahmood contended that students were often unaware that plagiarism was a serious offence. Dias & Bastos (2013, citing Power, 2009 as support, provided insight as to what could be the base of such ignorance when they stated that students had little inclination to engage their sources because content was often presented as facts to be learned and assignments were seen as regurgitation of those facts, rather than a chance to engage those sources in honest debate. They therefore contended that students' behaviour was linked to what the students believed could be gained — better performance — especially where consequences were minor. Vigilance is required so students come to an understanding of what truly is at stake, which as Engler, Landau and Epstein (2008) reminded us, is both personal integrity and the institution's reputation.

Mahmood (2009) listed other reasons, such as the pressure involved in having several assignments for submission, the desire to get good grades and ease of access to information on the internet. Onuwanne, Rustagi and Dada (2010) agreed that internet access facilitated cheating, especially if students felt rushed, and emphasised that repetition is facilitated by success at cheating when preventive measures are weak. Doró (2014) noted that students were asking for clearer policies and quicker responses to cheating.

### **Policy Development**

Academic institutions have tended to emphasise the importance of plagiarism through policies which refer to plagiarism as “academic misconduct with a range of penalties including expulsion from the institution for most serious cases” (Wilkinson, 2009, p.98). Onuwanne et. al, (2010) supported this view, admitting that at Howard University a student could fail an assignment and even be suspended. They went on to state that having an “honour code was not enough” (p. 63), even though a honour code could be one way of deterring plagiarism on an institutional level (Engler, Landau & Epstein, 2008). Drawing support from McCabe and Pavela (1997), they stated that students and faculty desired emphasis on academic integrity, along with clear policies and expectations.

In addition to providing a rationale for the requirements so that the expectations are clear, McGowan (2005) also advocated for the alignment of assessment with learning objectives and the use of an electronic detection system. She suggested that incidences of plagiarism be seen as teaching opportunities and with the help of a service such as Turnitin the gaps in students' knowledge could be addressed by using the reports for analysis and treatment of the problems faced. Citing Brew (2003) to support her viewpoint, she concluded that research-led teaching in a culture of enquiry should be the base for teaching and learning at the tertiary level.

### Theoretical Framework

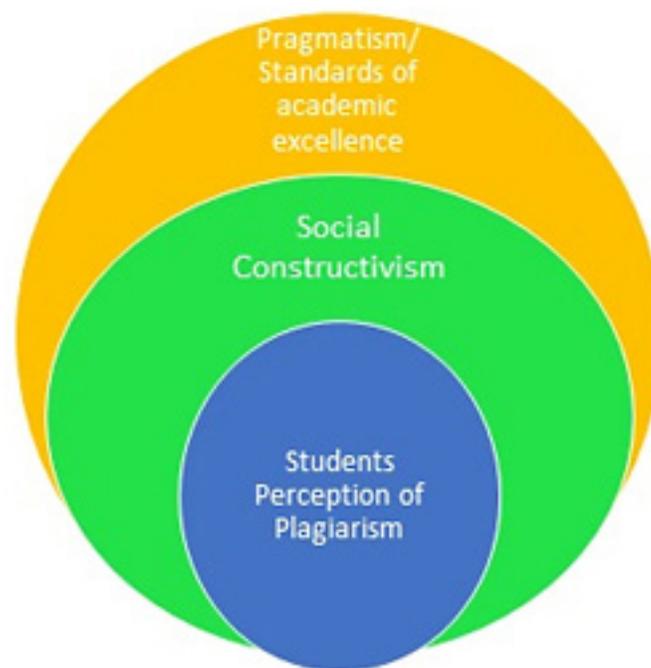


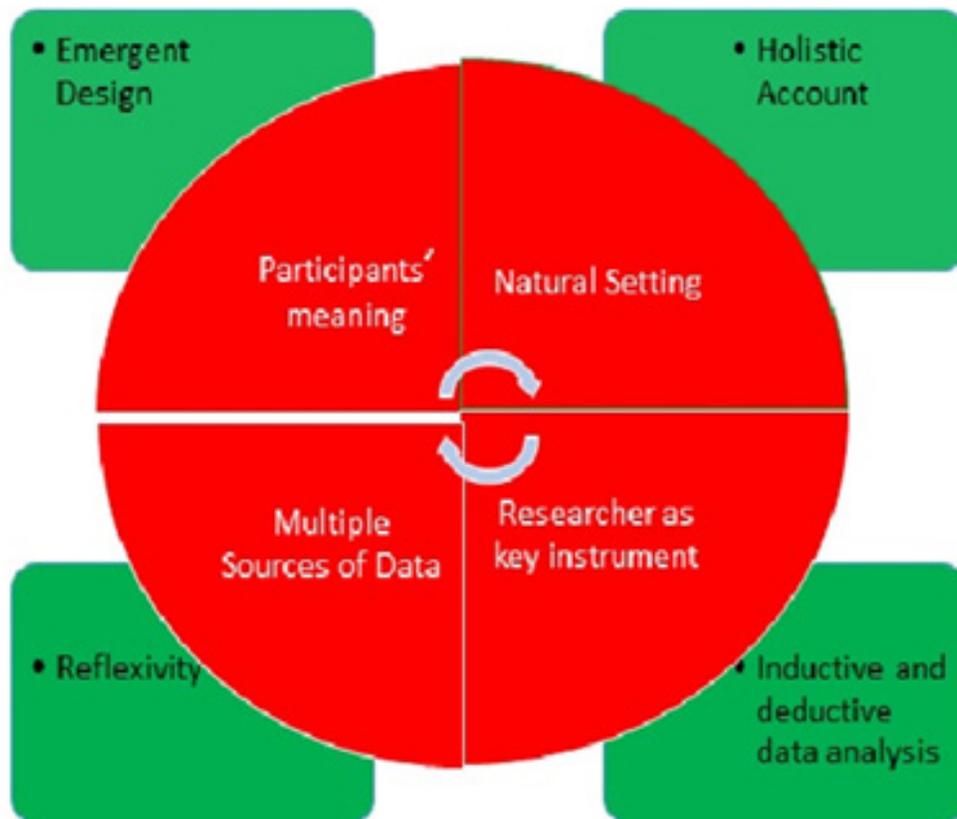
Figure 4. Theoretical framework (designed by Jacqueline Foster).

The study was rooted in the pragmatic worldview of John Dewey who saw learning as life, rather than preparation for life. The study advocated social constructivism, which emphasizes that knowledge is socially as well as individually constructed and requires that not only must students learn what is required of them, but they must accept it individually in order for what is learnt to be meaningful. Students must be immersed in the standards of academic excellence in order to learn them. This immersion happens when they are held accountable to those standards and implement them until execution becomes automatic.

## METHODOLOGY

### Research Design

Creswell (2014) lists eight characteristics of qualitative research which the researcher has paired into four groups of two. Participants' meaning was aligned to emergent design because the study evolved out of attempts to understand students' rationale for cheating and workshops with them to meet the needs detected. This was done in their natural setting of doing coursework, and therefore a holistic understanding could be gained based on what was revealed in discussions with them. The researcher as a key instrument was paired with the methods of analysis, because the researcher had to figure out the critical needs of each student who came for consultation in order to help them gain the necessary skills. Throughout the process, multiple sources of data were utilised requiring reflexive analysis and this accounted for the final quadrant in Figure 3.



**Figure 3.** Diagram designed by Porter (2016) based on Characteristics of Qualitative Research (Creswell, 2014, p. 185-186).

### Population and Sampling

The population consisted of students in the four-year degree programme of the Bachelor of Education offered at the Teachers' College during the period January 2015 to May 2016. These students were specialising in primary or early childhood education.

The main sample technique used was stakeholder sampling which according to Palys (2008) is used to identify persons who would be affected by a service provided. Stakeholder sampling is a subset of purposive sampling which Maxwell (2009) defined as the “selection of particular settings, persons or events for important information they can provide that cannot be had from other sources” (p.235) or as Creswell (2014) stated, the best sources to “help the researcher understand the problem and the research question” (p.189). Here the stakeholders were the students who, by offering their perspective on the matter, helped the researcher to understand their perspective and to help them improve their writing.

### **Data Collection**

The first set of data was collected in discussions with students from each year group and an examination of papers across year groups. Discussions were held in year groups with students in second and third years as part of their preparation for teaching practice, while the discussions with first and fourth years were done when individuals sought help to improve writing skills in order to improve their chances of passing their courses. The researcher also examined the research papers of fourth year students, as well as the papers of all who came for help.

The preliminary discussions with those who came for help led to the development of workshops geared at teaching them the rationale for citations and referencing, paraphrasing and writing summaries. The students’ first successful attempts at mastering these skills became examples that were highlighted and used as encouragement. During these workshops the discussions continued.

The observations made during all these discussions and workshops were the basis of the questionnaire, which will be analysed later. The questionnaire became necessary because of the need to provide hard data for policy development and continuous review. The questionnaire was done by asking students to answer voluntarily and anonymously, indicating only their year group and programme. Forty students representing all four year groups and the two programmes responded.

The questionnaire consisted of 15 closed questions and three open ended questions. It asked students to:

- define plagiarism — say what plagiarism involved;
- give reasons they plagiarise;
- identify ways in which they plagiarise;
- identify ways in which they could avoid plagiarism;
- identify consequences of plagiarism;
- state the frequency of use of the Turnitin software;
- state whether plagiarism was wrong and the reasons for their answer;
- identify ways in which the college could deter plagiarism;
- state if they would participate in workshops on plagiarism;
- state if they plan to learn more about plagiarism;
- describe an incident of plagiarism that took place within the academic year 2015-2016.

## Data Analysis

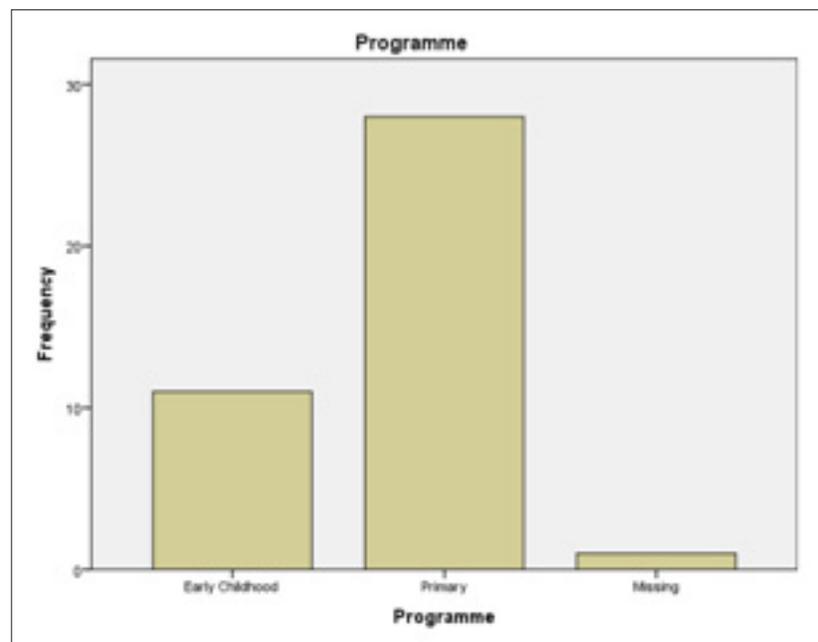
Data gathered during the discussions and workshops was used to develop and refine the questionnaire and the research questions, based on common themes which emerged. Preliminary analysis of the resulting data from the questionnaire was entered into Google Forms (a part of Google Products) to produce a summary of results based on the responses, by creating graphs using the closed ended questions and grouping the open ended responses. Final analysis was done using Version 20 of the SPSS software and Google Form summary analysis. The percentages used to indicate frequency and the raw score for each was done with SPSS while the graphs were both from SPSS, and Google Summary.

## RESULTS AND DISCUSSION

When analysed, the questionnaire supported the information gained through the discussion and workshops while providing new concerns that must be dealt with in the future.

### Description of Population

Forty persons in total answered the questionnaire. One person chose not to indicate either programme or year group. Of the 39 who indicated, 28 students were part of the Bachelor's in Primary Education while 11 students were part of the Bachelor's in Early Childhood Education.



**Figure 4.** Sample distribution across programmes.

When this data was broken into year groups, the data revealed that the number of respondents declined across year groups. Fifteen first years and 14 second years answered the questionnaire, in comparison to 7 third years and 3 fourth years.

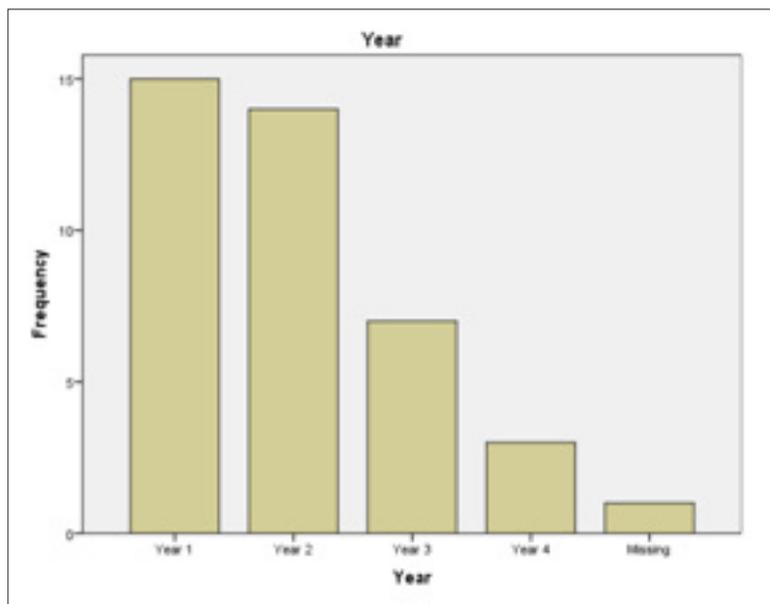
**Research Question 1: According to the students across the year groups — What is plagiarism?**

In the open ended questions which began the questionnaire, students were asked to give their own definition of plagiarism. Thirty-four students responded. Most students defined it as some kind of stealing and that stated that it involved using a source without acknowledging it. Examples of comments were:

*“Stealing someone else’s work and pretending it is your own.”*

*“Plagiarism is the citing of other person’s work without mentioning or giving credit to the person’s work.”*

*“This is the utilization of information without sourcing references/authorities.”*



**Figure 5.** Sample distribution across year groups.

The second question which required *yes* or *no* answers to indicate what they thought plagiarism involved, supported the view that while many were aware of the different aspects of plagiarism, their knowledge was uneven. While 82.5% (33 students) viewed it as stealing and 90% (36 students) thought that it was presenting someone else’s work as one’s own, as well as using material without citing sources; only 70% (28 students) thought of plagiarism as fraud. More troubling was the fact that while more than 70% in their free response defined it as citing sources incorrectly, only 35% chose *yes* for this option and 50% chose *no*, with 15% not giving an answer. Sixty percent (24 students) recognised that making up sources was a sign of plagiarism, while 32.5% or 13 students did not think so, and three chose not to answer.

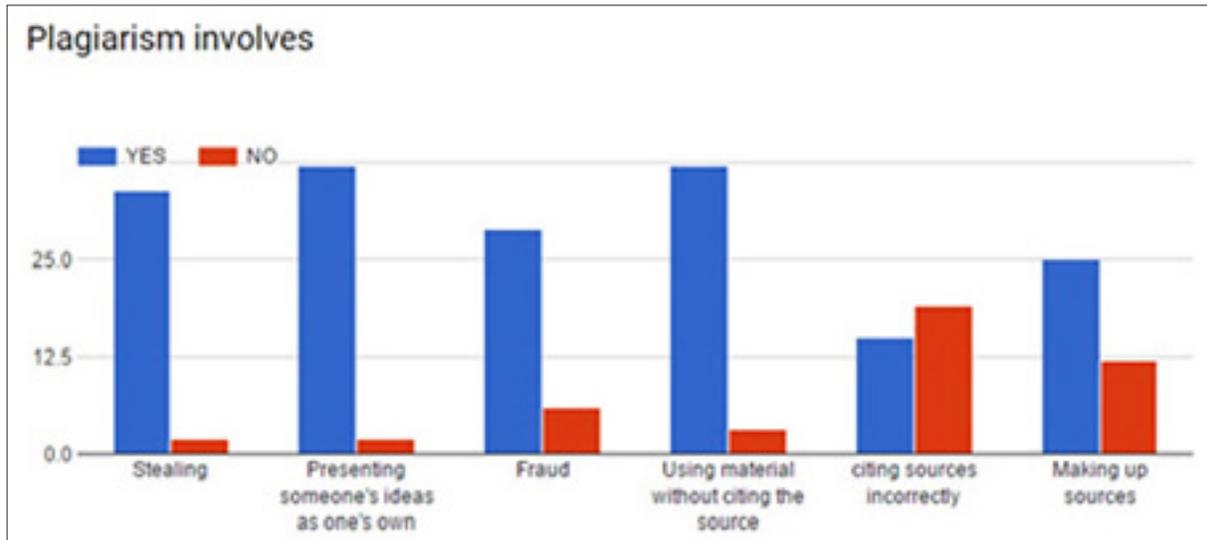


Figure 6. Examples of plagiarism.

**Research Question 2:**

**According to the students across the year groups – How do they engage in plagiarism?**

When asked about their reasons for engaging in plagiarism, the data revealed that the dominant reasons were:

- they did not think the assignment would take as long as it did (45% or 18 students: Figure 7, Column B),
- they did not know how to cite their sources (40% or 16 students: Figure 7, Column D),
- they did not think it was necessary to cite if the ideas had occurred to them (52.5% or 21 students: Figure 7, Column G) before they did any research.

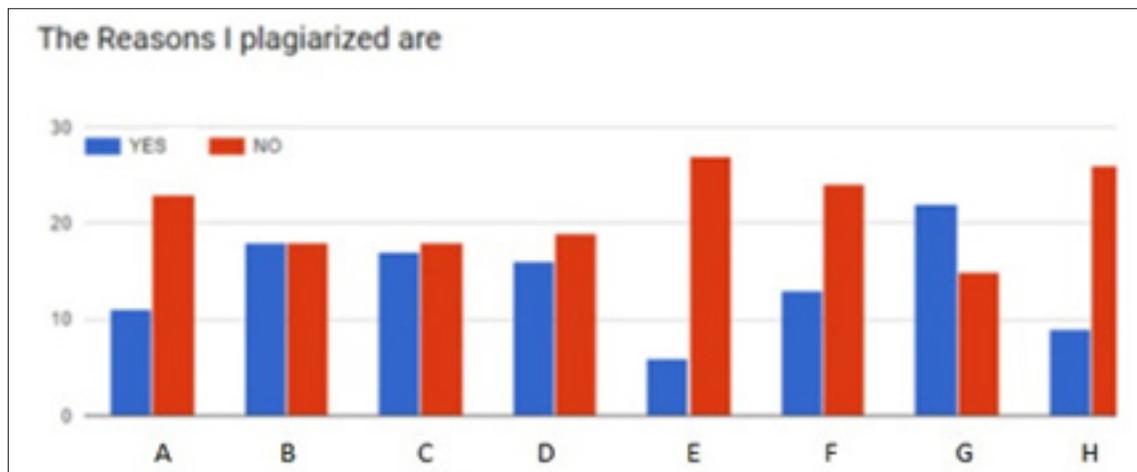


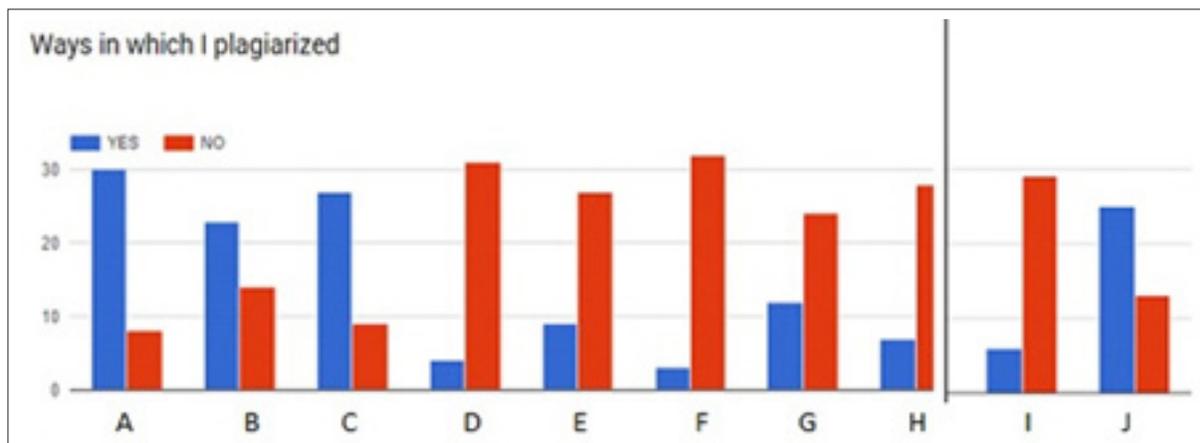
Figure 7. Students' rationale for plagiarism.

These reasons reveal the need for serious and systematic instruction concerning the purpose of citation in academic writing, how to cite properly, and time management. In the discussions, many were surprised and even resentful that the material presented in class was given as direction for further study, rather than all there is on the topic.

**Results/Findings – Research Question 2:**

**According to the students across the year groups – How do they engage in plagiarism?**

In discussing specific ways in which they engaged in plagiarism, the majority admitted to copying an assignment from the internet (72.5% or 29 students: Figure 8, Column A), not citing any sources (57.5% or 23 students: Figure 8, Column B) or not citing their sources correctly (67.5% or 27 students: Figure 8, Column C) and making up sources (62.5% or 25 students, Figure 8, Column J), in spite of the fact many of them fell among the 70% who had defined plagiarism in these terms. Seven students or 17.5% (Figure 8, Column H) admitted to copying a friend’s paper while 12 students or 30% (Figure 8, Column G) stated that they turned in a paper that did not belong to them.



**Figure 8.** Students’ self-reporting of plagiarism.

The preceding statistics reveal quite clearly that there is a huge gap between definition and what students actually do; and this gap was supported by their free response to one instance of plagiarism which they knew occurred during the academic year 2015-2016.

*“Someone gave in an assignment and did not change the name of the person that had submitted it before. They handed in the same assignment without making any changes.”*

*“One student went to another for assistance, both were doing the same assignment. The one who went for assistance left her work with the other and she edited the assignment and handed it in as hers.”*

*“Someone took my work and handed it in.”*

Far more troublesome was the verification, both from their self-reporting (10% or 4 students: Figure 8, Column D) and from the free response, that students actually paid others to do their assignments:

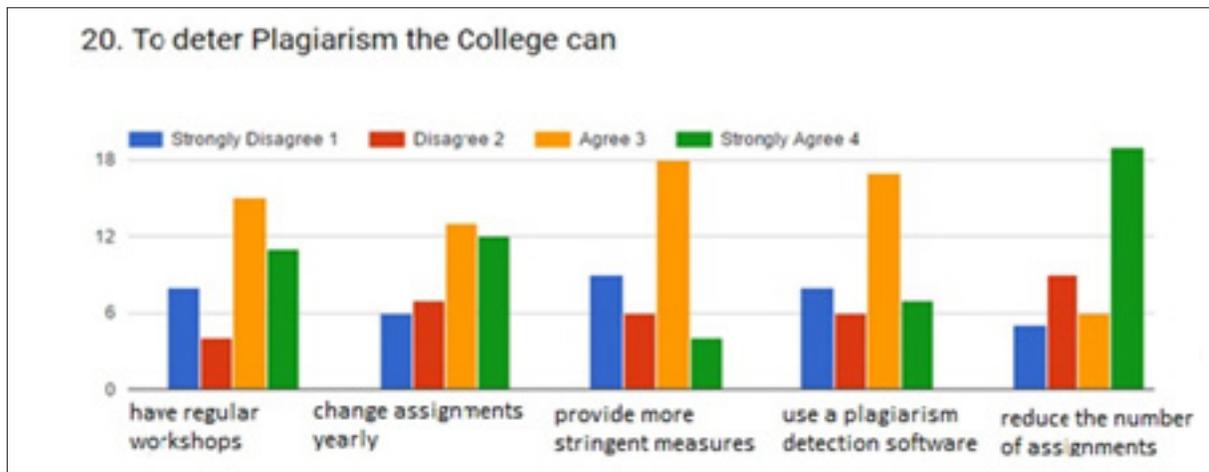
*“Students were paid to do work for other students.”*

*“Paid another student to complete an assignment and turn it in as their own.”*

As the following quote makes clear, the consequences of these acts of dishonesty are felt by others, who after honestly doing their work must defend their ownership and integrity.

*“I sent my work via email to be printed and handed in to avoid late penalty. Work was stolen and handed in before mine. I almost got a zero after the time I spent doing my work.”*

**Research Question 3: What ways for deterring plagiarism do students prefer?**



**Figure 9.** How the college can deter plagiarism — Options A-E.

The majority of students were in favour of all the options presented above. As illustrated in Figure 9, more than 60% of the students would like to have workshops (65% or 26 students), have the assignments changed yearly (62.5% or 25 students), and have less assignments (62.5% or 25 students) while 55% or 22 students wanted stricter sanctions applied, while 59.5% or 24 students wanted detection software to be used.

There were 74.5% or 30 students who wanted to be reminded by lecturers about plagiarism when their assignments were due. Twenty-three students or 57.5% welcomed mandatory counselling when they plagiarised. However, the majority rejected the idea of receiving zero for an assignment (62.5% or 25 students), receiving a failing grade if they plagiarised more than two assignments in the same course (72.5% or 29 students) and being placed on academic probation for one semester if they have plagiarised in several courses.

Interestingly, though 75% or 30 students thought it was wrong to plagiarize (Figure 11), only 42.5% thought there should be consequences for plagiarism (Figure 12). Only 11 persons responded to the request to provide reasons for their answers as to whether there should be consequences for plagiarism.

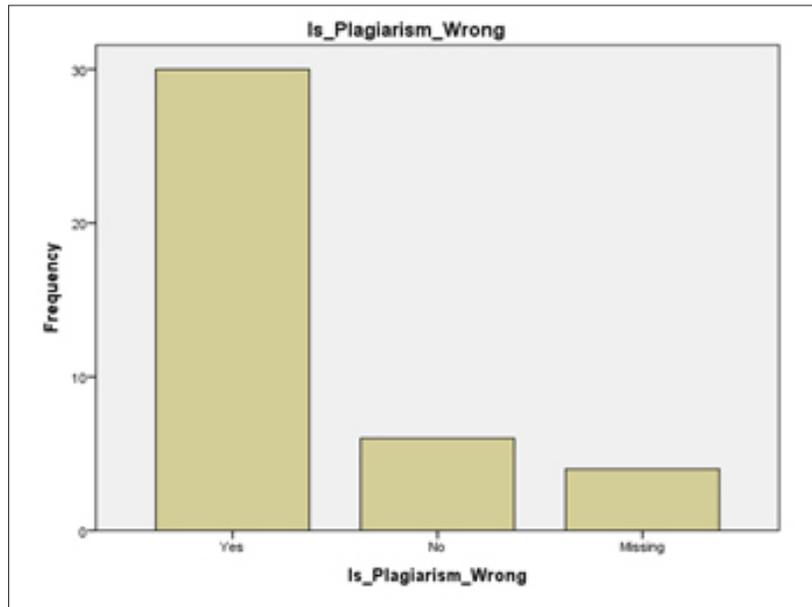


Figure 10. How the college can deter plagiarism — Options F-J.

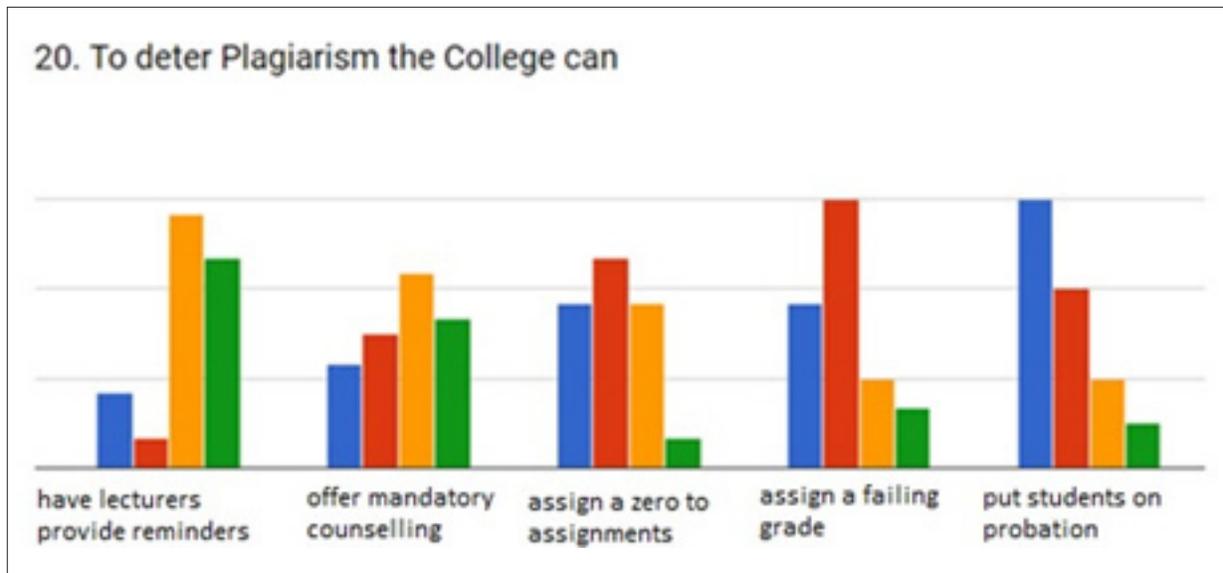
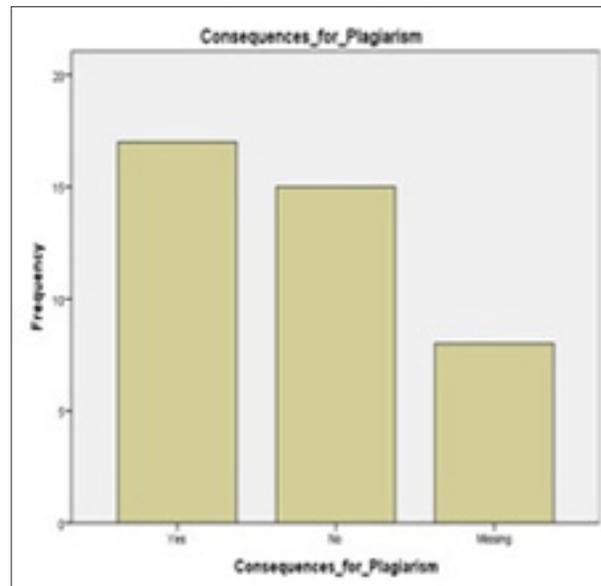


Figure 11. Is plagiarism wrong?



**Figure 12.** Should there be consequences for plagiarism?

Among the reasons given by those who thought there should be no consequences were:

*“I’m just trying to get my degree.”*

*“Persons are often innocent.”*

*“Because some persons don’t know.”*

*“Because sometimes you use people’s work and do not properly quote them.”*

*“No, depending on the punishment. People who plagiarise should pay a fee.”*

On the other hand, those who thought there should be consequences gave the following reasons:

*“It is hard to sit and envision a Word document and then someone steals it, with no regard to the time spent producing the information.”*

*“The persons should lose marks.”*

*“It is unfair for someone to do all the work and you just steal the information.”*

*“It is right for the original person to get the credit.”*

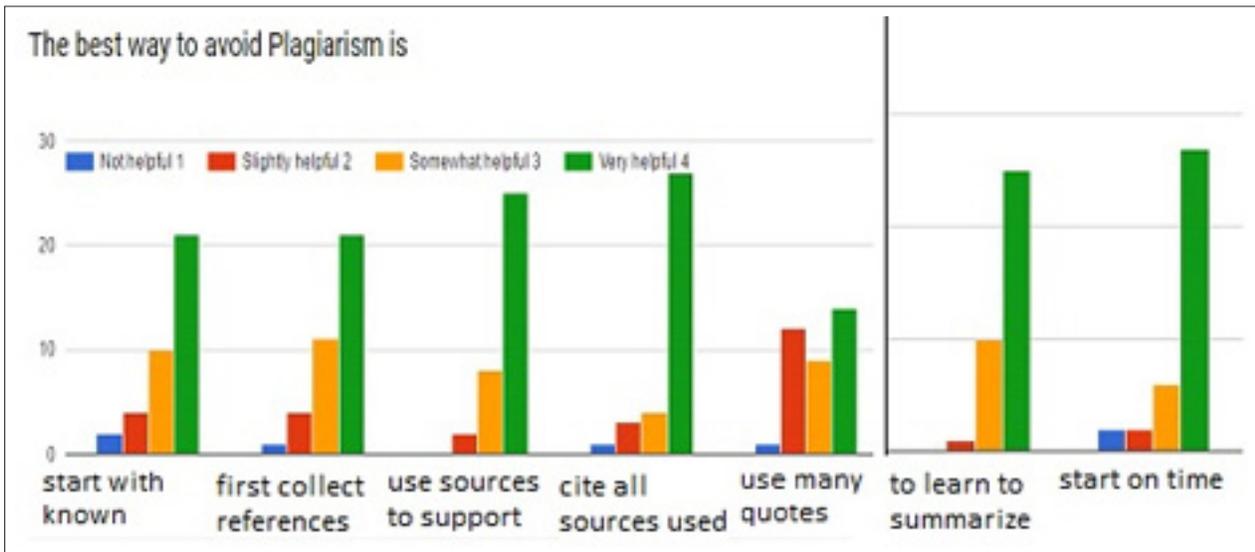
*“Because others study for their work and it would be unfair to them.”*

The above responses have implications for what happens in the various courses and for how any plagiarism policy is crafted and implemented. Clearly the students are requesting help from both their lecturers and the institution as a whole, but they are also asking not to be severely punished for the gaps in their knowledge — even when they provide overwhelming proof of being guilty. The need to hold them rigorously to the standards of excellence is imperative. Students should not even at the end of the first semester be still thinking that it is okay to steal the work of others because they are *“just trying to get their degree”*.

**Results/Findings — Research Question 4:**

**Using the information collected to guide the development of a policy for plagiarism**

In terms of what are the best ways to avoid plagiarism (Figure 13), 62.5% or 25 students thought it would be very helpful if they use sources to support their ideas and learn to summarise ideas found in their sources, while 67.5% or 27 students thought that citing sources for all material used and starting their assignments on time would be helpful. Fifty percent thought it would be helpful to collect the information needed for referencing, but 40% did not think so. Fifty-five percent or 22 students did not find the advice “not to use too many direct quotes” very helpful. Twenty-one students or 52.5% also thought that starting with what they knew was good advice, but there were 40% who did not think so. These admissions demonstrate again that students are aware that they do not possess the necessary skills to do a proper citation, and that many of them are clueless as to how they can relate what they do know to the task at hand. They also support the view that a purely punitive approach would not help them, and that what they need is systematic guidance to help them master the requirements.



**Figure 13.** Best ways to avoid plagiarism.

Figure 14 shows the consequences of plagiarism; for which constant reminders and some amount of training to correct established viewpoints will have to be given — not just by individual lecturers, but by the institution as a whole. Such an action is needed, because only 67.5% (27 students) were aware that they could fail their assignments. The number falls to 26 students or 65% for awareness of failing a course and even further to 50% or 20 students when the issues were — being expelled from the programme and the degree being withdrawn, even after being awarded. This information accounted for the overwhelming disagreement about getting zero for any assignment guilty of plagiarism, receiving a failing grade for a course where two assignments have been plagiarised, and being put on probation — even for one semester.

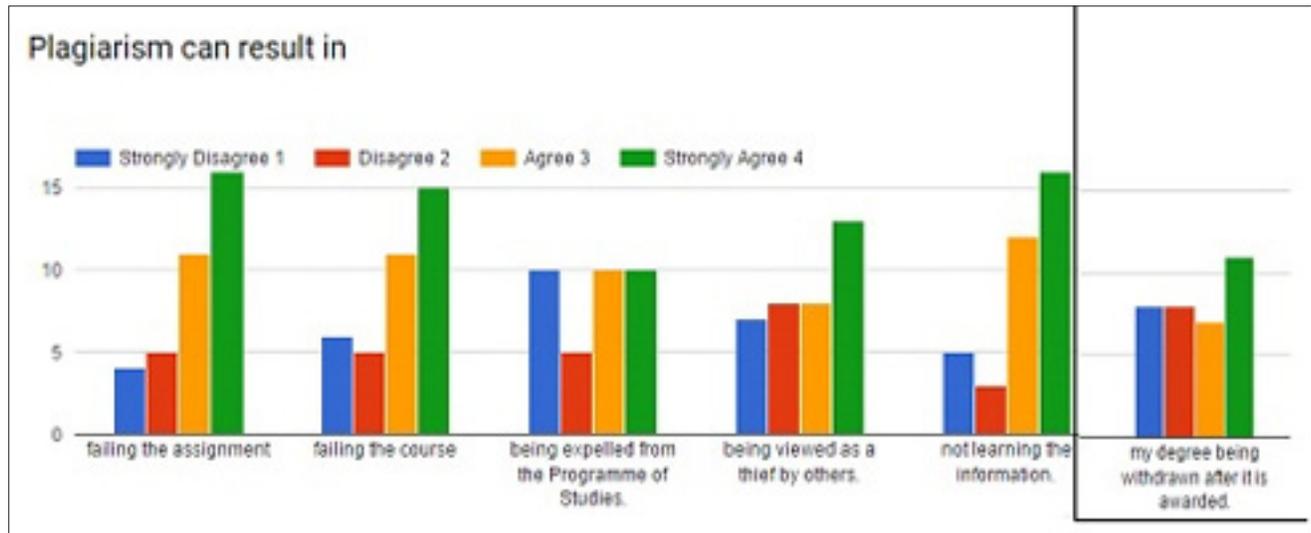


Figure 14. Consequences of plagiarism.

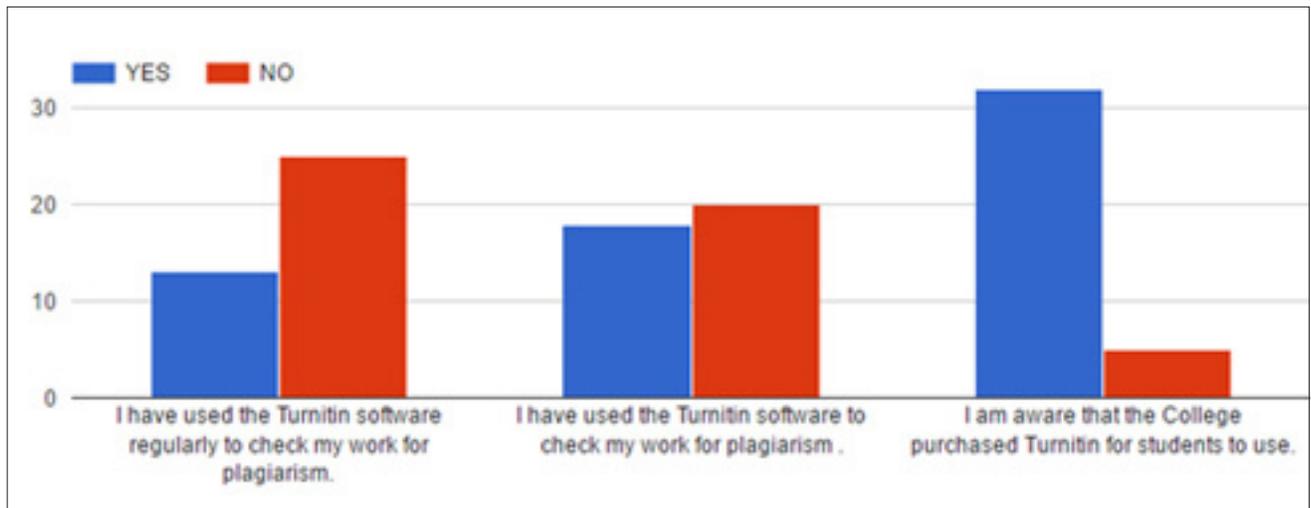


Figure 15. Turnitin software.

Although 80% or 30 students were aware that the college had purchased the Turnitin software, only 62.5% or 25 students admitted to not using it regularly, and 52.5% or 21 students have never used it. Not only are they not benefitting from a valuable tool, but the college has so far been paying for a resource which is severely underutilised. The institution needs to make the software mandatory for all courses, so that its usage will increase and its benefits realised. A change has already started, with the third and fourth years now being required to use it for their research courses.

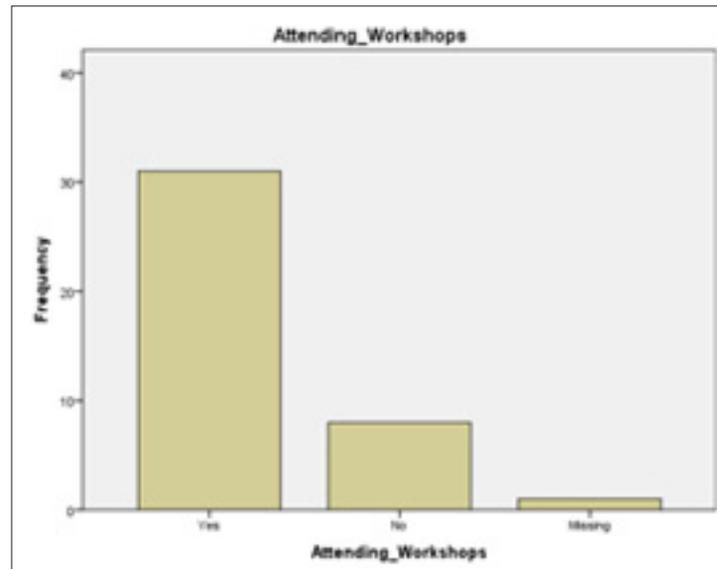


Figure 16. Willingness to attend workshops on plagiarism.

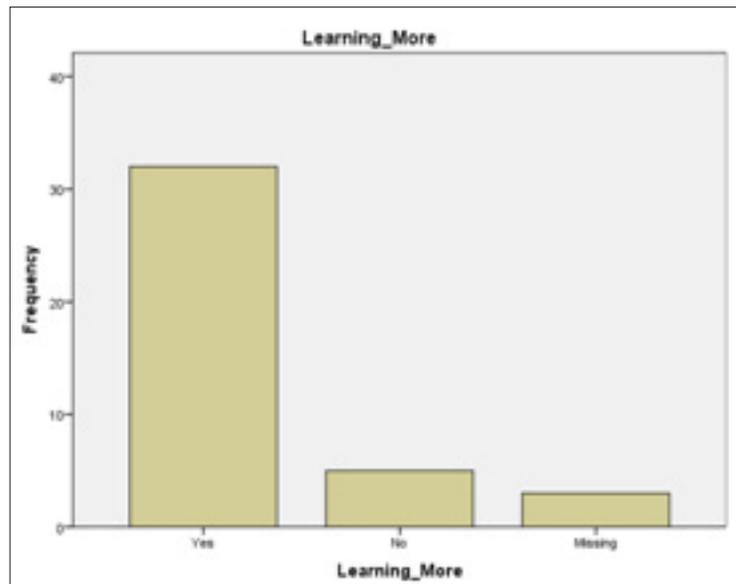


Figure 17. Desire to learn more about plagiarism.

Happily, the majority (80% or 32 students) are willing to learn more about plagiarism (Figure 17) and to attend workshops (77.5% or 31 students: Figure 16). Sadly, though, many who would not attend are the ones who admitted to multiple and varied instances of plagiarism.

## IMPLICATIONS AND RECOMMENDATIONS OF THE STUDY

The following implications were revealed during all phases of the research.

1. Policy development must be driven by research in order to be most effective. Any attempt to develop policy requires consistent and continuous dialogue with the persons who will be affected by its implementation.
2. Since the findings from the discussions held were used to draft a preliminary policy on plagiarism and the information from the questionnaire supported those findings, the policy can now be refined using the information and an overall policy of academic integrity embedded in the plagiarism policy can now be developed.
3. Lecturers need to know what students think about plagiarism in order to provide guidance. They should rigorously hold every student to the demands of academic excellence and use the coursework to train students in the standards of academic writing.
4. Emphasise training, rather than punishment. While many students could accurately define plagiarism, they were also guilty of it; and therefore their request for workshops which would help them to learn the necessary skills should be heeded. Their reasons and suggestions will have to be disaggregated according to year groups so that their immediate needs are met.
5. Treat learning as the creation of information, rather than data to be received. Students must feel it is okay to interrogate any information presented to them, and to do so with reasoned arguments supported by scholarship.
6. Make it mandatory for the Turnitin software purchased by the college to be used for all coursework. There should be a statement on all course outlines, and students should turn in their similarity index with their assignments. Workshops should be held to show students how to use the software to aid them in avoiding plagiarism.
7. Investigate the perceptions of plagiarism among lecturers, to ensure that all possess the same understanding and do not provide conflicting instructions to students.

## CONCLUSIONS

The issue of plagiarism is multi-layered and requires that all stakeholders be involved. The approach to solving the issue needs to be built on the perspectives of those involved, while holding firmly to the required standards. Those standards must be explained so that all understand their purpose and an ethical community which values the contribution of all in a spirit of enquiry be fostered. Only those who have been trained to think correctly will become lifelong learners capable of thinking critically — and only they will be able to realise their full potential as guardians of the past and creators of both the present and the future.

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# Elementary School Teachers' Science Teaching Efficacy Beliefs as Predictors of their Inquiry-Based Practices in Science Instruction

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## ABSTRACT

Trained elementary school teachers' science teaching efficacy beliefs (STEB) were measured using Riggs and Enoch's (1990) STEB inventory. The population consisted of 424 teachers. The levels of inquiry-based instructional practices (IBI) of a 25% random sample of these teachers were also determined using an observational rating scale. A determination was also made of any significant differences in teachers' beliefs based on relevant grouping variables. Correlation analysis was used to determine the extent to which teachers' STEB predicted their inquiry-based instructional practices in science. Teachers' STEB were found to be generally moderately favourable to their IBI. They were also significant and moderately positive predictors of their IBI. No differences in teachers' STEB were found based on any of the grouping variables. Teachers' inquiry-based practices were found to be at the developing inquiry level. These findings are significant in that they show the importance of teachers' educational beliefs in influencing their IBI practices and highlight the importance of developing more positive STEB in trainee elementary school teachers.

**Keywords:** educational beliefs, science teaching efficacy beliefs, inquiry-based instruction

## INTRODUCTION

This study concerns the implementation of the Organization of Eastern Caribbean States (OECS) Harmonized Primary School Science Curriculum in St. Lucia and focuses on the impact of teachers' beliefs on their inquiry-based instructional practices (IBI) in science. According to the OECS Education Reform Unit (OERU), this curriculum was introduced in OECS schools in 2007, aimed not only at harmonizing the science curriculum in the countries but also to acknowledge the importance of technology in modern societies and the intricate connections between science and technology (OERU, 2007). The curriculum highlights various economic, social, and educational reasons for the inclusion of technology. It also includes explicit statements that the focus of instruction should be inquiry-based.

Teachers are therefore expected to use a variety of inquiry-based instructional strategies in their science classrooms. However, based on the experience of the researcher, there is a strong perception among science educators and curriculum officers that a majority of these teachers mainly use the traditional teacher-centered strategies in their science instruction. This is despite the two years of teacher training experienced by a majority of these teachers where IBI are emphasized in both the science and mathematics education curricula. According to the 2011-2012 Education and Culture Statistical Digest (Data Management Corporate Planning Unit, M.O.E, 2011), as of the 2011/2012 academic year, 90% of

primary school teachers were qualified teachers. It therefore seems that, despite being trained in IBI, many teachers resort to the traditional practices of content-focused instruction in science when they return to the classroom. This study explores the possibility that the personal experiences which these elementary teachers had with studying science in primary and secondary schools led to the development of low levels of science teaching efficacy beliefs which generally led them to favour the use of inappropriate teaching strategies for science instruction.

For a variety of reasons, the teaching of science by these elementary school teachers may represent the kind of emotional experience that can cause changes in their belief systems or result in new beliefs about the subject. In many cases, these teachers have no choice but to teach science, a subject which the researcher (based on his many years in teacher education) contends many teachers do not have adequate content background for, in addition to their negative attitudes. Although in their many years of schooling they were exposed to traditional approaches to science instruction, they are expected to teach science using IBI. Their two years of teacher training using this approach can best be described as limited. As indicated by Ibrahim (2003), these experiences could have a significant effect on the quality of the science instruction delivered by science teachers. These effects may actually be mediated by the development of certain belief structures caused by these emotional experiences.

Several studies have investigated the role of individual beliefs in influencing actions and decision making. Pajares (1992) did a synthesis of these studies and indicated that they were generally based on the assumption that beliefs are the best indicators of the decisions individuals make throughout their lives (Bandura, 1986; Dewey, 1933; Nisbett and Ross, 1980). It is therefore the researcher's contention, and a hypothesis for this study, that there are a variety of beliefs that can be held by teachers that can have a significant impact on their decisions to use particular instructional practices in science. The research literature identifies three possible belief constructs that are relevant within the St Lucian context: epistemological beliefs, beliefs about science teaching and learning, and science teaching efficacy beliefs. The researchers conceptualized a fourth belief construct which they termed applicability beliefs (Samuel & Ogunkola, 2013, 2015) because of their contention that there are a multitude of school and classroom variables that may have a strong impact on classroom teaching and learning. These variables can result in the development of beliefs in the applicability of the recommended inquiry-based approaches to the learning conditions of their schools and classrooms.

This study reports on the findings of the extent to which teachers' science teaching efficacy beliefs serve as predictors of their IBI. Teacher efficacy is of particular relevance to primary school science teaching because the literature points to poor attitudes to science as well as inadequate science content knowledge in many elementary school teachers (Jones & Levine, 1994). Riggs and Enochs (1990) defined science teaching efficacy as teachers' beliefs about their ability to effectively teach science.

## REVIEW OF RELATED LITERATURE

### **Inquiry-based Instructional Practices**

A focus on inquiry-based instruction (IBI) can be traced back to the early 20<sup>th</sup> century when Dewey, in his criticism of the then teacher-centered approaches to science instruction, argued for teaching science as inquiry, where there is emphasis on the development of thinking and reasoning skills as well as an understanding of the processes of science.

IBI methods have had a long and checkered history since the 1930s, with a variety of interpretations being put forward about its use in the science classroom. Starting from the education reform years of the 1960s and 1970s, a strong emphasis was placed on the role of inquiry in science instruction (Ruhf, 2006). Learning was portrayed as a process where students are actively engaged in their learning of science, rather than the traditional passive receiving of information from teachers.

The publications of *Science for all Americans* (1989) and *Benchmarks for Scientific Literacy* (1993) by the American Association for the Advancement of Science (AAAS), as well as the National Science Education Standards (NSES) by the National Research Council (NRC, 1996) placed emphasis on the development of knowledge and skills of scientific inquiry in children throughout elementary, middle and secondary schools (Abd-el-Khalick et al, 2004; OERU, 2007). The National Science Education Standards (NSES) of the USA were published in 1998 to “emphasize a new way of teaching and learning about science that reflects how science itself is done, emphasizes inquiry as a way of achieving knowledge and understanding about the natural world...” (NRC, 1996, p. 9). These standards, together with the publication ‘*Benchmarks for Science Literacy*’ produced by project 2061 of AAAS, offered a comprehensive guide for inquiry-based science instruction (Bybee, Powell & Trowbridge, 2008).

In the guidelines outlined by the NRC in the NSES is the suggestion that all students, even those in the earliest grades, should be made to experience science “...in a form that engages them in the active construction of ideas and explanations and enhances their opportunities to develop the abilities of doing science” (NRC, 1996, p.121). So, according to Von Seeker (2002), these standards encourage teachers to replace traditional teacher-centered teaching practices with inquiry-oriented practices.

## Beliefs

Since the 1980s, there have been several studies investigating the role of individual beliefs in predicting actions and decision-making. From his synthesis of belief research Pajares (1992) concluded that research into teachers’ beliefs is important, since it may inform educational practice in ways that had not previously been accomplished by the educational research of the time.

In order to understand the why beliefs make such a profound impact on decisions made by individuals, it is necessary to have a proper conceptualization of the term ‘belief’. Irez (2007) noted the contribution of researchers such as Clark and Peterson (1986), Nespor (1987), Pajares (1992) and Richardson (1996) as helping to reach a consensus on the nature of beliefs which he interpreted as psychological constructs that:

- a. include understandings, assumptions, images or propositions that are felt to be true
- b. drive a person’s actions and support decisions and judgements
- c. have highly variable and uncertain linkages to personal, episodic and emotional experiences
- d. although undeniably related to knowledge, differ from knowledge in that beliefs do not require a condition of truth (p. 17).

Irez (2007) applied this definition to teachers when he asserted that teachers’ beliefs develop as a consequence of teachers’ interactions with other persons, events or objects in a variety of situations. They are deeply held and, according to Irez (2007), drive the teachers’ actions and support decisions and judgments. In the context of the classroom, therefore, teachers’ instructional decisions may be more a

reflection of their personal beliefs about a variety of instructional issues, rather than the approaches and strategies learnt and practiced at teachers' college.

### ***Science teaching efficacy beliefs***

Albert Bandura was very instrumental in establishing self-efficacy as an important construct in the research literature. He defined self-efficacy as "...a judgment of one's own capability to accomplish a given level of performance" (Bandura, 1986, p.391). With respect to teaching, self-efficacy can be regarded as a teacher's belief about his or her ability to successfully implement an instructional strategy, and, as indicated by Jones and Carter (2007), has been identified as a major component in a teacher's decision-making process.

Enochs and Riggs (1990) identified two dimensions of teacher self-efficacy:

- Teaching efficacy (outcome expectancy): belief that student learning could be influenced by effective teaching.
- Personal teaching efficacy (self efficacy): belief in their own teaching abilities.

They also indicated that, for elementary teachers, teacher efficacy beliefs appear to be dependent on the specific teaching situation e.g. the subject being taught. They therefore recommended, and later developed, a specific measure of science teaching efficacy beliefs, indicating that it should be a more accurate predictor of science teaching behavior than a more general instrument.

Therefore, with regard to science instruction, science teaching efficacy beliefs (STEB) can be defined as teachers' belief in their ability to effectively teach science and to positively influence the learning of all students.

### ***Teachers' teaching efficacy beliefs and their instructional practices***

A number of researchers indicated findings showing that the levels of self-efficacy beliefs are connected to teachers' behaviours and practices in the classroom (Deemer, 2004; Ginns and Walters, 1998; Hoy and Woolfolk, 1993; Marshall, Horton and Igo and Schweizer 2009, Saracaloglu and Yenice, 2009; Tschannen-Moran and Woolfolk-Hoy, 2001). Marshall et al. (2009) cited Hoy and Woolfolk (1993) as well as Tschannen-Moran and Woolfolk-Hoy (2001) who found that the more efficacious teachers are, the more likely they are to successfully implement new instructional strategies as well as effectively respond to classroom challenges. These findings are important when considering the implementation of IBI by teachers. More highly efficacious teachers are therefore more likely to engage and persist in IBI.

Deemer (2004) provided a more detailed analysis of how teaching efficacy can influence teachers' instructional practice. Suggesting that personal teaching efficacy influences the classroom goals of teachers, she specifically indicated that less efficacious teachers spend "little effort in finding materials and planning lessons that challenge students" (p.74). These are fundamental requirements for planning inquiry-based lessons. Deemer also indicated that these teachers do not adequately persist with students having difficulty with the concepts being covered. She also noted that the converse was true for highly efficacious teachers. Similar findings were reported by Saracaloglu and Yenice (2009), who stated that highly efficacious "teachers are open to innovation and are also eager to use new methods and strategies"

(p.246). With these findings, one may come to the assumption that teachers' personal teaching efficacy may also be related to student performance. Both the OECD (2009) and Saracaloglu and Yenice (2009) cited a number of studies showing that this assumption may indeed be valid (Ashton and Webb, 1986; Brophy and Good, 1984; Goddard, Hoy and Woolfolk-Hoy, 2000; Ross, 1998).

With regard to school-related variables that may impact on teachers' personal efficacy, Marshall et al. (2009) found that there is no significant difference in teachers' science teaching efficacy based on the grade level taught. With regards to professional experience, findings by the OECD (2009) showed significant net effect on self-efficacy in more than half of the countries surveyed. Similar findings with regard to mathematics and science teachers were reported by Saracaloglu and Yenice (2009). These results on the impact of experience and seniority of teachers on their teaching efficacy highlight the importance of teacher educators attending to the beliefs of student teachers. Ginns and Walters (1990) noted that student teachers' concerns about their "adequacy as science teachers, may ultimately result in the implementation of poorly conceptualized and ineffective learning experiences in science" (cited in Plourde, 2002, p.253). Plourde (2002) therefore suggested that "science educators must organize existing and new courses to include experiences that make students aware of and adept at confronting their existing beliefs about their ability/inability to teach science to elementary students" (p. 257).

### **Research Problem**

This study seeks to investigate primary school teachers' science teaching efficacy beliefs related to inquiry-based science instruction, and whether these beliefs serve as predictors of their use of IBI practices in the implementation of the science and technology curriculum in St. Lucia.

### **Research Hypothesis**

St. Lucian elementary school teachers have generally low levels of science teaching efficacy beliefs, which are reflected in low levels of inquiry based instructional practices in science.

### **Research questions**

1. What is the level of primary school teachers' science teaching efficacy beliefs?
2. Are there significant differences in teachers' science teaching efficacy beliefs based on:
  - Years of experience
  - Qualifications in science.
  - Highest educational attainment (Degree versus non-degree)
  - School location (rural versus urban)
3. To what extent do the levels of primary school teachers' science teaching efficacy beliefs predict their use of IBI practices?

## RESEARCH METHODS

Since this research intended to determine the relationship between two continuous variables (science teaching efficacy beliefs and inquiry-based instructional practices), the research design was descriptive and correlational where quantitative procedures were used in the collection and analysis of data. This involved:

- a. Survey techniques used to measure teachers' science teaching efficacy beliefs
- b. T-test and ANOVA procedures used to determine if there were any significant differences in teachers' science teaching efficacy beliefs based on years of experience in teaching, science qualifications, highest educational attainment, and school location.
- c. A lesson observation rating scale was used to determine the level of teachers' inquiry-based practices.
- d. Regression analyses used to determine the extent to which the science teaching efficacy beliefs of primary school teachers predict their use of inquiry-based instructional practices.

### Population

Trained teachers from the junior primary grades (grades 3-6) were selected as the population for the study. Trained teachers were selected because of their assumed knowledge of inquiry-based techniques in science instruction. Data from the 2011 Education and Culture Statistics Digest of St. Lucia (Data Management, Corporate Planning Unit, M. O. E., 2011) indicated that there are 424 trained teachers in these districts teaching grades 3-6 which therefore represents the total population for the study.

### Selection of Samples

A sample of schools from each district was selected for the initial pilot testing of the survey instrument. The schools were selected by a combination of random and purposive sampling. The schools that were purposively selected were chosen because they had a very small population of teachers and students and very small class sizes, compared with the rest of the schools in the population. The other schools were randomly selected from the eight districts. A total of 15 schools and 83 teachers were selected for the pilot testing. The sample for the survey to determine and measure the epistemological beliefs of trained primary school teachers was obtained by subtracting the sample for the pilot testing from the total population. The sample for the survey was therefore 341. Stratified random sampling techniques were used to select 25% of the population (approximately 87 teachers) for the lesson observation phase of the study (Samuel & Ogunkola, 2013).

### Data Collection Instruments

#### *The Questionnaire*

The questionnaire was constructed to obtain data from the population required for measurement of their science efficacy beliefs. Items were included in the first part of the instrument to obtain demographic information necessary for answering the research questions, which provided information on the independent variables:

- Teaching experience
- Qualifications in science
- Highest educational qualification

The second part of the instrument was designed to measure teachers' science teaching efficacy beliefs. The instrument was developed and originally used by Enochs and Riggs (1990). It was designed to measure teachers' beliefs in their ability to teach science and to enable student learning in science. It consists of 25 items numbered from E1 to E25 arranged in a 5-point Likert scale. Respondents are asked to express their level of agreement with a series of opinionated statements about their own teaching of science and students' learning of science.

Using factor analysis procedures, Enochs and Riggs (1990) found two separate and uncorrelated underlying dimensions:

1. Personal Science Teaching Efficacy
2. Science Teaching Outcome Expectancy

Examples of items included in this section of the questionnaire are as shown in Table 1.

| <b>Factor</b>                       | <b>No. of items</b> | <b>Item numbers</b>                            | <b>Example of item</b>  |
|-------------------------------------|---------------------|--|---|
| Personal science teaching efficacy  | 12                  | 2, 3, 5, 6, 8, 12, 17, 18, 19, 21, 23, 24      | I am continually finding better ways to teach science   |
| Science teaching outcome expectancy | 13                  | 1, 4, 7, 9, 10, 11, 13, 14, 15, 16, 20, 22, 25 | Increased effort in science teaching produces little change in some students' science achievement |

### ***Lesson Observation Rating Scale***

The instrument for the lesson observations was adapted from a model of inquiry-based instructional assessment designed by Marshall, Smart and Horton (2010). The instrument is referred to as the Electronic Quality of Inquiry Protocol (EQUIP).

The rating scale was designed to assess four constructs implicit to IBI practices. These are:

1. Instructional factors. How effectively the teacher used the recommended inquiry-based instructional strategies.
2. Discourse factors. Effective use of inquiry-based verbal interactions such as questioning and discussion.
3. Assessment factors. Effective use of formative and summative assessment techniques.
4. Curriculum factors. Effective engagement with the content e. g. adequate depth and integration with investigations.

Each construct was further divided into appropriate sub-constructs and the assessor determines the level of inquiry observed, based on the rating scale in Table 1.

| <b>Range of scores</b> | <b>Score interpretation</b> |
|------------------------|-----------------------------|
| 5.0 – 9.0              | Pre-inquiry                 |
| 9.1 – 13.0             | Developing Inquiry          |
| 13.1 – 17.0            | Proficient inquiry          |
| 17.1 – 20.0            | Exemplary inquiry           |

### **Data Analysis Procedures**

#### ***Scoring for the Questionnaire Responses***

Responses for each item of the Likert scales were coded so that a score of 5 represented the most sophisticated belief that was most favourable to IBI practices and a score of 1, the belief that was most simplistic and unfavourable to IBI practices. The score obtained by each participant for each item of the questionnaire was entered into the statistical software SPSS 18. Demographic information from section A of the questionnaire, which was necessary to answer the research questions, was also entered into SPSS 18 as grouping variables.

#### ***Analytical Procedures for Research Question 1***

The mean scores for all the participants for the STEB inventory were obtained and interpreted by the researcher as shown in Table 3.

| <b>Range of mean belief score</b> | <b>Level of belief</b>        |
|-----------------------------------|-------------------------------|
| 1.00-2.04                         | Very unfavourable for IBI     |
| 2.05-3.04                         | Unfavourable for IBI          |
| 3.05-4.04                         | Moderately favourable for IBI |
| 4.05-4.50                         | Favourable for IBI            |
| 4.51-5.00                         | Very favourable for IBI       |

For a more in-depth analysis, the mean scores of all the participants for each of the underlying factors of the belief constructs were also obtained and interpreted as in Table 2. In addition, frequency and cumulative frequency tables were also drawn.

#### ***Analytical Procedures for Research Question 2***

Two-way ANOVA procedures were conducted to determine how the measured level of teachers' STEB varied depending on teacher experience and qualifications. The t test was used to detect any significant differences in teachers' beliefs, depending on teachers' educational attainment and school location.

### ***Analytical Procedures for Research Question 3***

Multiple regression analyses were used to determine how teachers' STEB predict their level of IBI.

Out of the sample of 341 teachers for the survey administration, 302 questionnaires were collected and analyzed, a response rate of 88.6%. The internal consistency reliability of the questionnaire was found to be 81.3%.

## **DATA ANALYSIS**

### **Analysis of Research Question 1**

*What is the level of primary school teachers' science teaching efficacy beliefs?*

A mean of 3.6 out of 5 was found, which was interpreted by the researchers as moderately favourable towards the practice of IBI.

Table 4 shows the frequency distribution for teachers' science teaching efficacy belief scores.

| <b>Mean science teaching efficacy belief score</b> | <b>Frequency</b> | <b>Percentage</b> | <b>Cumulative percentage</b> | <b>Interpretation</b> |
|--|------------------|-------------------|------------------------------|-----------------------|
| 1.00-2.04  | 0                | 0                 | 0                            | Very unfavourable     |
| 2.05-3.04  | 21               | 7.0               | 7.0                          | Unfavourable          |
| 3.05-4.04  | 245              | 81.1              | 88.1                         | Moderately favourable |
| 4.05-4.50  | 31               | 10.2              | 98.3                         | Favourable            |
| 4.50-5.00  | 5                | 1.7               | 100                          | Very favourable       |

The findings indicate that the majority of teachers (88.1%) have science teaching efficacy beliefs that are only moderately favourable to their practice of IBI; while 11.9% have either favourable or very favourable beliefs, and 7% have unfavourable beliefs.

The means for each of the underlying constructs for teachers' science teaching efficacy beliefs are shown in Table 5.

| <b>Constructs</b>                   | <b>Mean score /5</b> | <b>Interpretation</b> |
|-------------------------------------|----------------------|-----------------------|
| Personal science teaching efficacy  | 3.7                  | Moderately favourable |
| Science teaching outcome expectancy | 3.5                  | Moderately favourable |

The findings indicate that the teachers possess only moderately favourable personal science teaching efficacy beliefs and science teaching outcome expectancy beliefs.

## **Analysis of Research Question 2**

Based on the following: *Are there significant differences in teachers' science teaching efficacy beliefs?*

- a. Years of experience
- b. Qualifications in science
- c. Highest educational attainment (Degree versus non-degree)
- d. School location (rural versus urban)

The t test and ANOVA showed no significant differences in teachers' science teaching efficacy beliefs or for any of its underlying constructs based on any of the independent variables. There were also no interactions detected between the independent variables for either the main or underlying belief constructs.

## **Analysis for Research Question 3**

*To what extent do the levels of primary school teachers' science teaching efficacy beliefs predict their use of IBI practices?*

From the lesson observations, the overall mean obtained for the inquiry-based instructional practices of the teachers in the sample was 12.0. Based on the researcher's interpretation of these scores shown in Table 2, the teachers' instructional practices in science can generally be rated as developing inquiry.

For the regression analysis, the correlation was significant ( $p < .0005$ ), with a moderately positive correlation coefficient of 0.458. The  $r^2$  value of 0.210 indicates a medium effect size as advised by Kinnear and Gray (2011). This belief construct was also found to be the strongest predictor of teachers' inquiry based practices when compared to the other belief constructs measured by Samuel and Ogunkola (2013, 2015).

Regression analysis was also conducted to determine the extent to which teachers' science teaching efficacy beliefs predict each of the component factors of teachers' IBI. These beliefs were found to be significant predictors of teachers' instructional processes related to IBI ( $R=.372$ ,  $\text{Adj } R^2=.128$ ,  $F=11.767$ ,  $p<.005$ ), their inquiry-based assessment ( $R=.380$ ,  $\text{Adj } R^2=.134$ ,  $F=13.987$ ,  $p<.005$ ) and their attention to curriculum factors supporting IBI ( $R=.389$ ,  $\text{Adj } R^2=.141$ ,  $F=14.780$ ,  $p<.005$ ).

## **DISCUSSION**

This study investigated the hypothesis that St. Lucian elementary school teachers have generally low levels of science teaching efficacy beliefs, which are reflected in low levels of inquiry-based instructional practices in science. The findings of this study indicate that teachers do have low to medium levels of science teaching efficacy beliefs, which therefore means that these beliefs are only moderately favourable towards IBI practices. Researchers are in general agreement that teachers' self-efficacy beliefs are directly related to their instructional and assessment practices (OECD, 2009). Highly self-efficacious teachers are more likely to be innovative in their teaching strategies (Deemer, 2004; Marshall et al, 2009), which means that they may be more motivated to persist with IBI. In addition, these teachers spend a greater amount of time planning their science lessons and finding suitable materials and equipment and are more likely to persist with difficult students (Deemer, 2004). All these are important attributes of IBI. The low

to medium levels of science teaching efficacy beliefs among primary school teachers should therefore be of concern to education authorities.

In attempting to tackle this problem, it is first important to identify the reasons for the low science teaching efficacy of so many primary school teachers, even after they have completed their teacher training. The majority of teachers in this study (69.1%) either possess one or no science subject at the CSEC or GCE level. It is possible that, for many of these teachers, their experiences of secondary school science might not have encouraged the development of positive attitudes to the subject. This is most likely a key issue in the development of low science teaching efficacy beliefs. Bleicher (2007) brought out similar arguments when he contended that the low science conceptual understanding of teachers contributes to the development of low science teaching efficacy beliefs. Enochs, Scharmann and Riggs (1995) looked at this issue from another angle, finding that the number of years of high school science taken by teachers was actually negatively correlated to their personal science teaching efficacy beliefs. These are amazing findings, since they imply that secondary school science is actually having a negative effect on teachers' beliefs about their own ability to teach science. From this researcher's own experience as a science educator, the majority of student teachers have very little to say that is positive about their secondary school science experiences. This is likely to be a reflection on traditional teaching practices which portray the subject as difficult and unappealing to many students. Unfortunately, the students who end up as primary school teachers are generally those who developed poor attitudes to science due to secondary school experiences.

This, however, begs the question as to why should those low science teaching efficacy beliefs persist, even after the teacher education experiences? Plourde (2002) noted the findings of Ginns and Walters (1998) that both experienced teachers and teachers who had just completed teacher education expressed a lack of confidence in their ability to teach science. The current study has produced similar findings. In producing their National Science Education Standards, the NRC (1996) noted at the time that there were problems in the preparation of primary school teachers both in science content and pedagogy. Ginns and Walters (1998) also showed that teacher education programmes did not result in improvements in teachers' science teaching efficacy beliefs. Despite the changes that have occurred in the science curriculum of teacher education over the years, these findings appear to be as relevant now as they were then. In addition, for primary school teachers in St. Lucia, teaching experience does not seem to result in increased science teaching efficacy.

The important question now is — how can teacher education programmes cater for the low science teaching efficacy beliefs of students entering the programme, and turn out trained teachers with significantly improved beliefs? Plourde (2002) made a suggestion utilizing similar principles to that of conceptual change models. He recommended that students be engaged in experiences in which they would be encouraged to first become aware of, and then confront their existing beliefs about their ability to teach science. Other strategies suggested by researchers ranged from effective integration of science content and pedagogy, to the use of IBI by teacher educators. Hechter (2011) cited a number of studies in which the integration of science content and methods in single courses as shown to result in improved teachers' science teaching efficacy (Appleton, 1995; Cantrell et al, 2003; Palmer, 2006). These findings are very relevant to the context of this study, since only in recent years were efforts made to integrate the science content and pedagogy of teacher education in the OECS in single courses.

Both of the underlying constructs of teachers' science teaching efficacy beliefs recorded moderately favourable scores towards IBI. This means teachers' beliefs about their own ability to teach science as well as their ability to positively influence student learning in science may not be sufficient to adequately encourage their persistence with IBI practices. These beliefs may likely have their origin in teachers' experiences of learning science, as well as the general perception of the difficulty of the subject. However Science Teaching Outcome Expectancy beliefs may actually be also dependent on teachers' perception of the ability of the students in their class. Therefore, teachers' Personal Science Teaching Efficacy is the construct that will most likely respond to the interventions outlined above. Increasing the Science Teaching Outcome Expectancy of teachers may also depend on tackling issues of poor performance in science in both primary and secondary schools.

With regards to science qualifications, it is expected that teachers should have a higher science teaching efficacy as their science qualifications increase. The results of this study do not show this and is probably an indication that the teachers are relatively homogeneous in their science qualifications and that these qualifications are low. With regards to teaching experience, the results were also unexpected and disappointing, showing that teachers' science teaching efficacy beliefs are not expected to increase as the teachers gain experience in the teaching of science.

The findings of this study indicate that of the four belief constructs measured by Samuel and Ogunkola (2013, 2015), science teaching efficacy beliefs were found to be the strongest predictor of elementary school teachers' inquiry based practices in science instruction. These beliefs were also found to be significant predictors of teachers' instructional processes, their assessment of science instruction, and their attention to curriculum factors supporting IBI. These findings support the importance given to this construct by various researchers such as Deemer (2004), Jones and Carter (2007), Marshall et al (2009), OECD (2009), Plourde (2002), and Saracaloglu and Yenice (2009).

Since the science teaching efficacy beliefs of the teachers in the sample were found to be the strongest of the belief constructs in the prediction of teachers' level of IBI, it is a relevant argument that all efforts need to be placed on developing strong science teaching efficacy beliefs in primary school teachers. Their teacher education experiences should therefore be designed to develop not only their knowledge, but also their interest in and attitudes to science, with the aim of developing high science teaching efficacy beliefs.

## CONCLUSION

The findings of this study confirmed the hypothesis that the science teaching efficacy beliefs of St Lucian primary school teachers are low and this is reflected in low levels of their inquiry-based instructional practices. The moderately favourable teachers' science teaching efficacy beliefs are probably expected, based on the poor science backgrounds of the large majority of teachers. Two years of teacher education is, seemingly, inadequate to produce highly efficacious primary science teachers. In addition, there were no significant differences in these beliefs based on teaching experience, suggesting that, even with the expected increased knowledge of science as well as the comfort in teaching science that comes with teaching experience, this is not enough to improve teachers' science teaching efficacy beliefs. This argument applies especially to the underlying construct: teachers' personal science teaching efficacy beliefs. Teachers' Science Teaching Outcome Expectancy beliefs are slightly different, since they refer

to teachers' beliefs in their ability to positively influence students' outcomes in science. So in addition to being a reflection of the poor science backgrounds of teachers, the moderately favourable Science Teaching Outcome Expectancy beliefs also suggest a level of disbelief by teachers in their own students' ability to effectively learn science under their tutelage. This disbelief may not only be as a result of teachers' lack of confidence in their own teaching, but also a lack of confidence in the ability of their students to learn science.

The teachers' science teaching efficacy belief construct was also found to be the strongest predictor of their IBI practices, with these practices increasing with teachers' STEB. This is a very significant finding that underscores the importance of favourable STEB in primary school teachers. A key implication of this is the requirement for the development and implementation of a primary teacher science education curriculum with increased attention to improving teachers' STEB. In addition, improvements in the secondary education science experiences of prospective primary school teachers are likely to result in increased IBI in primary school science.

The findings of inadequate levels of IBI in the science instruction of primary schools in St. Lucia warrants immediate attention and intervention by the education authorities. A thorough examination of the teacher education science curriculum is recommended, with subsequent interventions to address the possible inadequacies in its implementation that may result in the inability of teachers to effectively implement IBI. Steps should also be taken to ensure a gradual increase in the science qualifications of primary school teachers over the next few years. This should involve raising the minimum science qualification of primary school teachers to two science subjects at the CSEC or GCE level.

The problem of low science teaching efficacy beliefs has to be dealt with at the level of teacher education. These beliefs are linked to poor attitudes and interest in science due to poor experiences with science in secondary schools. Conceptual change models as well as effective integration of the science content and methods component of the teacher education curriculum have been shown to result in improved science teaching efficacy beliefs. However, this must be accompanied by the use of more inquiry-based teaching practices by teacher education lecturers rather than the predominant use of lectures. In addition, issues dealing with negative science experiences of students in secondary schools need to be investigated and strategies designed to address this problem.

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# On-going Teacher Professional Learning Best Practices

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## ABSTRACT

Social dynamics demand that teachers continuously upgrade their pedagogical knowledge and skills to remain relevant in the implementation of the school curriculum. The Education for All (EFA) global monitoring report reiterates that an educational system is as good as its teachers in unlocking learners' potential to realize quality learning outcomes, (UNESCO, 2014). The Strengthening of Mathematics and Science Education (SMASE) teacher capacity development programme has been implemented in Kenya since 1998. The In-Service Education and Training (INSET) programme for practicing teachers of mathematics and science emphasizes a pedagogic paradigm shift to enrich learner-centered lessons. The Activity-Student-Experiment-Improvisation (ASEI) approach and Plan-Do-See-Improve (PDSI) cycle of improvement is a teaching strategy that emphasizes learner-centeredness. It accentuates active involvement of learners in the construction of knowledge.

This study traced teachers trained on the SMASE ideals to establish level of incorporation, extent of practice, and reasons for continued practice. It adopted a concurrent triangulation design of mixed methods research. Data was collected using lesson observation guides, questionnaires and interview schedules from school principals, teachers, students, and lessons. Data analysis began with coding of sampled respondents, and teachers were the unit of reference. The level and extent of practice was determined through computation of the mean scores of respondent teachers. Findings revealed that SMASE programmes have the potential to transform teaching and learning practices to enrich learning experiences and improve outcomes. The programmes have improved teachers' pedagogical content knowledge and skills, thus teachers decided to continue practicing the tenets of SMASE and INSET. The majority of teachers were transforming and applying practitioners. Teachers stated that they continued the practice because the ideals were valuable and relevant to their work, helped to build communities of expert practice in innovative lesson delivery, and attributed it to supportive administration.

**Keywords:** professional development, ASEI-PDSI approach, continuous practice

## INTRODUCTION

Continuous Professional Development (CPD) of teachers is recognized globally as a significant contributor to quality of education. Kenya and other African countries face similar challenges in teacher preparedness and quality of teaching and learning across the continent. The opportunity to strengthen professional development of teachers is anchored by the call for Education for Sustainable Development

(ESD), which requires that we engage participatory teaching and learning methods that enhance learner's ability to take action for sustainable development. Accordingly, ESD promotes competencies such as critical thinking, imagining future scenarios and making decisions in a collaborative way, (UNESCO, 2005-2014). This paper reflects a journey of over fifteen years of a strong desire to improve secondary school classroom practices through teacher capacity development programmes in Kenya and sub-Saharan African countries. It is drawn from a tracer study that sought to document the impact of Strengthening of Mathematics and Science Education (SMASE) programme, (CEMASTEА, 2015).

## ONGOING PROFESSIONAL DEVELOPMENT OF TEACHERS: THE CASE OF CEMASTEА / ICADETA

### Brief Background

It all began when a baseline survey was conducted on the state of mathematics and science in secondary education in Kenya, owing to persistent low achievement of high school graduates. The study revealed among other factors; teaching and learning challenges of classroom practices being knowledge-based; teacher-centered, predominant use of the lecture or theoretical teaching approach; and recipe-type experiments and practical work (SMASSE Project, 1998). A programme of intervention aimed at teacher capacity development was initiated through the In-Service Education and Training (INSET) of practicing teachers of mathematics and science. A pedagogic paradigm shift through lesson Activities that are Student-centered, Experiments and research-based lessons, and small scale experiments or practical work through Improvisation (ASEI) was the focus of the programme. In an endeavor to encourage teachers to realize an ASEI lesson, a continuous improvement cycle was propagated under the Plan, Do, See, Improve (PDSI) approach to implementation of ASEI lessons.

The Institute for Capacity Development of Teachers in Africa (ICADETA) is the successor of the Centre for Mathematics, Science and Technology Education in Africa (CEMASTEА) which has implemented in-service education and training (INSET) projects and programmes for mathematics and science teachers since 2004. The project, whose overall goal was, "*to upgrade the capability of young Kenyans in Mathematics and Science*" started in 1998 and was implemented in three phases (CEMASTEА, 1998-2013). Since 2004, the institute also trains teachers from other African countries under the auspices of the Strengthening Mathematics and Science Education in Africa (SMASE-Africa) Association, which was formed to create synergy in addressing challenges affecting mathematics and science education in African countries.

### Professional Teacher Development

Professional development programmes for teachers are aimed at providing fora for collaboration, teamwork, and the much-needed professional dialogue that was rare in the past. It was expected that teachers who had such training would improve classroom practices, and increase learner participation and achievement. Moreover, subject teachers were expected to practice the tenets of INSET by observing colleagues teaching and functioning as critical friends. Despite all these efforts, studies showed that learner-centered practice is still low among teachers in Kenya and other African countries.

There are mixed opinions on whether SMASE programmes and activities are benefitting learners in the Kenyan system. Accordingly, the question of whether teachers who have been trained are practicing the tenets of INSET has been a matter of much deliberation. Similarly, sentiments to the effect that some teachers have embraced SMASE ideals and are practicing to the benefit of students have been voiced, as reflected in the choice of optional science courses as well as improved performance in these subjects. The tracer study therefore sought to establish the impact and successes thereof and inform future practice in teacher capacity development programmes. The objective of this paper is to discuss findings on why teachers who have undergone professional development continue practicing what they learn as an impact of the SMASE programme.

### **Theoretical and Conceptual Underpinnings**

As regards conditions affecting teacher learning, two theoretical perspectives are usually taken into account: psychological factors (teacher cognition and motivation); organisational factors (leadership, teacher collaboration, staff relationships and communication, locus of control, opportunities for teachers' learning) (Coburn, 2004; Earl & Katz, 2006; Nguni, Slegers & Denessen, 2006; Zwart, 2007). The two factors work together to bring about teacher learning, with the psychological factors having a relatively larger effect. This argument is further supported by the social constructivism theories of learning as advocated by Vygotsky (1978) who states that a child's cultural development: is a function of social or between people (inter-psychological) and individual or inside the child (intra-psychosocial) factors. Social constructivists believe there is a type of cognitive constructivism that emphasizes the collaborative nature of learning. Social constructivists assert that knowledge is also a human product that is socially and culturally constructed (Ernest, 1999; Gredler, 1997; Prawat & Floden, 1994). In view of the foregoing, the ideals of the SMASE programme resonate closely with the two theories — SMASE programme trained teachers work collaboratively and they also prepare lesson activities that provide the community of learners with co-construction of knowledge. This is realized through the use of collaborative teaching and learning methods which require learners to develop teamwork skills and view individual learning as essentially related to successful group learning.

Collaboration has been highlighted as important for teachers' empowerment, as it leads to development of school cultures that value shared responsibilities and values in the professional learning community. According to Bolam et al. (2005) and Vescio, Ross & Adams (2008), a professional learning community is based on two assumptions — that knowledge and learning is a result of social contexts and experiences, promoted through interactive, reflective exchanges; and that participation in a PLC leads to changes in teaching practices and enhancement of student learning.

Conceptually, the existence of a teacher, students, and a variety of teaching and learning resources in the classroom is viewed as a learning environment. In this paper, a learning environment is a setting that is influenced by a variety of variables namely; teaching and learning resources, attitude towards learning, pre-requisite knowledge, lesson activities, a reflective teacher, and instructional strategies (Winberg, 2006). Successful lessons are a product of well thought out lesson activities in terms of hands-on, minds-on, mouths-on or hearts-on, and the teacher plays a major role in the design of successful lessons. This study sought to identify factors that motivate teachers to continue with the practice of what is learnt during INSET. Theoretical and conceptual underpinnings discussed in this section were a basis for discussing the findings of the study.

## Research Methodology

The study adopted a concurrent triangulation design of the mixed methods research methodology (Creswell, 2009). The design enabled conclusions to be compared and understood on the extent to which mathematics and science teachers were perceived to have embraced the ideals of SMASE to practice and share experiences during training and thereafter as narrated by various stakeholders. Data was collected using tools that captured both quantitative and qualitative data from students, teachers, school principals, and lessons observed in schools where the trained teacher worked. The student questionnaire and interview guides solicited information on level of involvement in the teaching and learning process and students' orientation towards the subject. Lesson observation guides solicited the extent of the ASEI-PDSI approach practice in lessons. The principal's interview guide focused on their perceptions about the teacher's practice following SMASE training. The teacher's interview guide focused more on establishing reasons for the persistent practice of the ideals of the SMASE programme.

Quantitative data analysis began with coding of sampled counties, school principals, teachers, and students. Teachers were the unit of reference and each was assigned a unique code. The code assignment for all respondents enabled data analysis. For instance, lesson observation guides were analyzed for the extent of practice of SMASE ideals by teachers in terms of mean rating and percentage incorporation of aspects of ASEI in lessons. Student questionnaires were analyzed for attitudes and extent of lesson participation as mean scores.

Qualitative data analysis began with cleaning and coding of teachers, principals and students. For example, teachers' interview transcripts were coded for aspects the teachers considered to have enabled them to practice the ideals of SMASE. Enablers included;

- support from the school administration and peers or colleagues,
- curiosity and willingness in the learners to learn,
- the SMASE program mode of training,
- other SMASE program activities such as lesson study, and
- students' performance in internal and external examinations.

The level and extent of practice of ideals of the SMASE programme was determined through computation of a mean of scores for all teachers observed using the lesson observation guide. Items 10 to 23 were rated by observers focused on the ASEI-PDSI approach to lesson planning and implementation.

## Findings: Best practice and Related Impact

Best practice in this paper is anchored on the views of teachers as to why they persistently practice the ideals of SMASE INSET. *We posit that if the level of incorporation and extent of ASEI-PDSI practice in lessons is high, then the reasons given for persistent practice of INSET ideals are valid.* Persistent practice of INSET ideals was enabled by factors referred to as enablers. Observations made indicate that it is one thing to train teachers, but another thing for them to practice the ideals of INSET. There are basic requirements in terms of an enabling environment within the school that continuously supports practice.

The study revealed that lessons with a high level of incorporation of activities and experiments sustained learner attention using well-designed activities as a key emphasis of SMASE courses. It was

observed that the percentage of incorporation of ASEI components in the lessons was at relatively equal levels — implying that teachers have internalized the expectations of each aspect.

Teachers were further categorized based on Extent of Practice (EOP). Those with high EOP were categorized as transforming, medium EOP as applying, and low EOP as emerging practitioners. The findings indicate that the majority of teachers were transforming and applying practitioners with 31.3% and 56.3% respectively.

In view of the foregoing findings on level of incorporation and extent of practice, we proceed to discuss the enabling factors. The observations were triangulated using the views of both the principals and the teachers. For instance, the principals perceived the teachers who participated in this study as having brought change to the teaching and learning of mathematics and science in their respective schools, and promoting improved attitudes and performance. Accordingly, they stated that the same teachers had role-modelled leadership in their various capacities in the school. These observations are in line with the following findings of why teachers continue to practice SMASE ideals:

1. Teachers continue practicing SMASE ideals because they value the training programmes as relevant to their work in class. This is reflected in the response given on the question of whether they will continue to incorporate ASEI-PDSI practice. A chemistry teacher CT03 said, *“That is not a question, because where would you go? There is nowhere to go because you are not teaching. So you cannot go back.”*
2. Teachers indicated the benefits of SMASE training as a means to build communities of expert practice and enable them to be innovative in lesson delivery. This is illustrated by the sentiments shared by a mathematics teacher, MT19, who stated, *“We consult and discuss... we share how we can overcome some challenges either by use of the models, how maybe to introduce some topics at the same time even how to organize students in class and those who may not have the motivation to do mathematics.”*
3. Teachers continue to practice SMASE ideals because the training enhanced their ability to teach and help students learn mathematics and science more effectively through enriched lessons. This is reflected in the words of one of the biology teachers — BT03 — who stated, *“Now in teaching of biology, the training has given me new approaches to teaching, making (the subject) easier to teach and learn, and making it more interesting, when you are having variations other than the chalk and talk”*. A chemistry teacher (CT14) said, *“I’ve become more practical oriented in my teaching. I’ve allowed the students to be my focus of the teaching. We go to the lab and I’d like to supervise more than anything else. So I let the students do (the practical) on their own, I only come in as the supervisor...”*.
4. Teachers continue practicing SMASE INSET tenets because of the support accorded to them by the school administration through timely provision of teaching and learning materials and creation of an enabling environment in the school. In cases where these forms of support are inadequate or lacking, then teachers are unable to freely practice learner-centered lessons. In the words of Supovitz & Turner (2000), teachers who felt supported by their principals reported significantly greater use of reform-based approaches in teaching than their counterparts who did not feel similarly encouraged. Teachers said that SMASE training programmes had improved their negotiation and interpersonal skills, as stated by the chemistry teacher CT13, who noted

that, *“When I come here and need something for practical activities, the principal cannot turn me down because of the seriousness and the approach that I learnt in SMASE”*. A mathematics teacher (MT12) observed that, *“The principal for one she is very supportive of the [SMASE] program. In fact anything that the teachers want to use in class she urgently provides it”*.

Based on the findings, school principals are supportive at school level because respondent principals acknowledged that SMASE is such a good program and advocated for the need of all mathematics and science teachers to embrace it. They suggested that the SMASE programme is important and should be extended to all the other subjects in the school curriculum.

5. Students increased enrolment in science optional subjects is an indicator of teachers’ continued practice of SMASE ideals. Teachers are therefore motivated to continue practicing the ideals of SMASE arising from the motivation they get in seeing their students enjoy learning. The majority of students in the study said they enjoyed learning, appreciated the connection of what they learned with their future career, and its immediate application to real life.

## IMPLICATIONS OF FINDINGS

Teacher professional development is a concept that has taken root not only in Kenya, but in many other African countries. This study’s findings will help to guide selection of the best models for teacher professional development programmes. These findings can also guide CPD policy formulation to highlight the most effective approaches.

## CONCLUSION

In summary, SMASE teacher capacity development programmes have the potential to transform teaching and learning practices in a manner that will enrich students’ learning experiences and enhance learning outcomes such as career choices and making informed day-to-day decisions. It is apparent from the study that SMASE programmes have improved teachers’ pedagogical content knowledge and therefore teachers have decided to continue practicing the tenets of INSET. The findings indicated that the majority of teachers were transforming and applying practitioners. We therefore conclude that the level of incorporation and extent of ASEI-PDSI practice in lessons is high, and the reasons given for persistent practice of INSET tenets are valid, as summarized below:

1. Teachers continue practicing SMASE ideals because they value the training programmes as relevant to their work in class.
2. Teachers indicated the benefits of SMASE training as; a means to build communities of expert practice and enable them to be innovative in lesson delivery.
3. Teachers continue to practice SMASE ideals because the training enhanced their ability to teach and help students learn mathematics and science more effectively through enriched lessons.
4. Teachers continue practicing SMASE INSET tenets because of the support accorded to them by the school administration through timely provision of teaching and learning materials and creation of an enabling environment in the school. In cases where these forms of support are inadequate, teachers are unable to freely practice learner-centered lessons. In agreement, school

principals acknowledged that SMASE is a good program, and advocated for for all mathematics and science teachers to embrace it — suggesting that the programme be extended to all other subjects in the school curriculum.

5. Students' increased enrolment in science-optional subjects is an indicator of teachers' continued practice of SMASE ideals. Teachers are motivated to continue practicing the ideals of SMASE as they see their students enjoy learning.

## RECOMMENDATIONS

Continuous professional development of teachers is an important ingredient in enhancing the quality of an education system of any nation. It is one thing to train teachers, but it is an individual choice to practice the tenets of INSET. Adult learners are independent, self-directed and have control over much of their learning experiences — as enumerated under the principles of “*Andragogy*” (Smith, 1996; 1999) and (Kearsley, 2010). In view of the foregoing, and to ensure that teachers continue to practice the tenets of INSET we recommend that:

- training programmes be tailored to teacher's felt needs, so as to help them create communities of expert practitioners with colleagues as critical friends.
- school principals be continuously sensitized about their supportive roles at school.
- students be sensitized on their expected roles during lessons

The above recommendations resonate well with the theme of this conference, especially with regards to creation of ideal conditions for quality education in terms of pedagogy. Continuous professional development of teachers is a sure means to professionalize teaching, because a teacher is made mainly in the classroom. Kenya has embraced teacher professional development as an investment programme of the Ministry of Education, Science and Technology Education (MOEST) with a view to transform teaching and the country's general quality of education.

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# Promotion of Reading Habits at the Primary Education Level in Thailand

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## ABSTRACT

This paper presents the results of the research on evaluation of the national policy implementation. The objectives of the study were: to evaluate the process of implementing the policy on reading habit promotion at primary education level; to study the situation and the results of the policy implementation; and to identify factors affecting the success of reading habit promotion. The samples included: policy administrators, directors of local education areas, school administrators, teachers, students, parents, and members of school committees from 232 schools across the country. Research instruments were the interview forms and questionnaires. Data was analysed by frequency, percentage, means and content analysis for qualitative data.

The main findings showed that at the practical level, teachers integrated reading activities into their teaching in every subject and organized various kinds of reading activities. The results showed that students paid more attention in reading, used school libraries and borrowed reading materials more often. Factors affecting the success of reading habit promotion included: administrative factors, activities provided, role of teachers, students' attention, and parents' participation.

The findings and recommendations from the study can be applied to developing the reading habits of primary school students throughout the country.

## INTRODUCTION

Reading is a very important factor in the day-to-day lives of people in the current knowledge-based society. It is one of the four skills for communication. Reading is a tool for people to obtain knowledge and information — it is an important tool for learning (Digiovanna, 1994; Krashen, 2004; Miller, 2009). In the present society, people in every age group need to learn continuously as lifelong learning (Sungsri, 2012). People need to have enough knowledge and information to help them face life and adjust themselves properly to the rapidly changing social environment. The more people read, the more they can develop themselves and their intelligence. Therefore, reading is a required skill for human resource development. A number of educators such as Fangsawad (2005), Bongbuth (2006), Maytha (2008), Paungnak (2011), Prathumwan (2011) referred to the importance of reading as it enables people to develop themselves. It is an important factor for human and social development. They stated that Thai people have not yet paid proper attention to reading. There were several reasons;

- they lacked the motivation to read,
- some lived far away from learning resources,

- some did not know what to read, and
- some did not have enough time for reading.

These educators suggested that encouraging and motivating people to read were very necessary. People should read frequently and continuously until they develop a reading habit.

Recognising the importance of reading, the government of Thailand has consistently issued the policies and plans for reading promotion (Ministry of Education, 2003). In 2006, the government proposed reading promotion as a national policy and set the years 2009-2018 as the national reading promotion period (Ministry of Education, 2009). Within this period, the Ministry of Education has promulgated the reading habit promotion policy and encouraged its implementation throughout the country.

Since 2009, the policy has moved from national to local level implementation. In order to know the situation and the results of the implementation of the reading habit promotion policy, follow-up research needs to be conducted. The aim of this study was therefore to find out whether the process of policy implementation was successful. The results of this study will form the guidelines for developing the reading habits of all Thai citizens.

## OBJECTIVES OF THE STUDY

1. To evaluate the process of implementing the reading habit promotion policy at primary education level;
2. To study the situation and the results of the policy implementation; and
3. To identify factors affecting the success of reading habit promotion.

## METHOD OF THE STUDY

The study was carried out in 3 steps.

### **Step 1. Studying the process of implementing the reading habit promotion policy at primary education level.**

The sample comprised 2 groups of people:

1. The administrators at ministry and department level of the Ministry of Education. The researchers deliberately selected 6 of those who were the policy makers and the policy administrators, and;
2. 32 directors of local education areas from 16 provinces across the country. To obtain this group of the sample, the researcher firstly randomly selected 16 provinces from all of the 4 regions of the country, 4 provinces from each region. In each province, there were 2 local education areas which looked after all schools in the districts within those local areas. The researchers asked the directors of both local education areas to be the sample. That made the total sample 32 directors from 16 provinces. The research instrument for the first group of the sample was the interview form, and for the second group it was the questionnaire. When data collecting from the first group of the sample, the researchers asked for appointments to interview each person. For the second group of the sample, the researchers went to see each

person and asked for their cooperation to fill in the questionnaire. The data from interviews were analysed by content analysis. The data from the questionnaires were analysed by frequency, percentage, mean, and content analysis for the open-ended questions.

### **Step 2. Studying the Situation and the Results of the Policy Implementation**

The sample comprised 5 groups of people. The researchers obtained the sample for this step from the 16 provinces and 32 local education areas which had been randomly selected in Step 1. From each local education area, the researchers randomly selected 10 schools in all sizes, (large, medium and small). Three schools were also randomly selected from Bangkok Metropolitan. Therefore, the total sample was 323 schools. From each school, 1 principal or director was asked to be the sample; 1 teacher, 12 students, 12 parents and 1 member of the school board were randomly selected to be the sample. Thus, the sample for this step included: 323 principals or directors, 323 teachers, 3,876 students, 3,876 parents and 323 members of the school board. Research instruments were 5 sets of questionnaires, each set for each group of the sample. For data collection, the researcher went to each school in every sample province to ask for cooperation from the principal or director to explain and deliver questionnaires to every group of the sample in school. The researchers asked the students who were the sample to give questionnaires to their parents. Data obtained were analyzed by frequency, percentage, mean, and content analysis for the open-ended questions.

### **Step 3. Studying Factors Affecting the Success of Reading Habit Promotion**

For the sample, the recommended schools with best practices in reading habit promotion were purposively selected from 3 out of 4 sampled provinces in each region, 1 school from 1 province. Therefore, in 12 provinces there were 12 sample schools. Moreover, 3 schools with best practices from Bangkok Metropolitan were added — which made a total of 15 sample schools across the country. From each school, apart from the principal, 6 teachers, 6 students, 2 parents and 1 member of the school board were randomly selected to be the informants. The total sample in this step comprised 15 principals, 90 teachers, 90 students, 30 parents and 15 members of the school board. The instrument was the interview form. The researchers made appointments to interview each member of the sample and observed the reading activities, reading environment and reading climate in each school. Qualitative data was obtained and analyzed by content analysis.

After collecting and analyzing all data from Step 1 to Step 3, the researchers synthesized all data to propose the draft of policy recommendations. The draft of policy recommendations was then presented at a seminar to 15 experts. The advice and suggestions from the experts were used to improve the policy recommendations.

## **MAIN FINDINGS**

### **The Process of Implementing the Policy of Reading Habit Promotion at the Primary Education Level**

The study found that the vision, mission, policy, strategy and plan for reading habit promotion were developed at the ministry level and then transferred to the department level. At the department level or the Office of Primary Education Commission (OPEC), the policy and plan were analyzed for clarity.

The policy, plan and success indicators were developed. Then the meetings were organized to transfer the policy and plan to the administrators at the provincial level or the directors of the local education areas. The directors of local education areas then passed on the policy and plan to schools within their areas. Support such as budgets and other resources as well as advice and follow-up were given from department to provincial level and schools.

At the institutional level, each school developed its own operational plan. According to the operational plan, projects and activities for reading habit promotion were developed to suit the students and the context of the area. To conduct the activities, each school searched for cooperation and support from parents, the community, and the network of government and private agencies.

### **Policy Implementation: Status and Results**

#### ***Implementing the Reading Habit Promotion Policy in Schools***

Most of the school principals reported that they developed their own school plans and projects for promoting the reading habits of their students. They let all of their teachers and staff know and understand their plans and projects and set up special working committees to take care of the policy implementation. They encouraged teachers in every subject group to integrate reading habit promotion activities into their teaching and learning. Classroom teachers were encouraged to organize reading activities for their students and coordinate with the librarians to run activities for promoting the reading habit in libraries.

Teachers stated that there were several reading habit promotion activities available in their schools, such as:

- the introduction of good books,
- organizing a reading corner in each classroom,
- reading competitions,
- storytelling competitions,
- reading exhibitions
- The reading environment was also promoted in schools by:
  - setting up reading corners or providing baskets of books in some areas,
  - providing tables and chairs for reading under the trees,
  - organizing activities to create reading motivation,
  - putting cut-outs around schools to motivate reading, and
  - organizing reading activities on special occasions.

Most of the teachers liaised with school librarians to organize various kinds of reading promotion activities. Teachers encouraged students to search for knowledge and information in libraries and to participate in reading promotion activities in schools. Moreover, teachers followed up the reading behaviour of students at home by coordinating with their parents.

Parents stated that they cooperated well with school administrators and teachers by:

- reminding their children to do reading homework,
- organizing reading corners at home,

- buying books for their children,
- reading with their children before bedtime,
- reading for their children, and
- leading by example.

### **Results of Implementing the Reading Habit Promotion Policy in Schools**

The study found that after participating in various reading promotion activities at their schools, students had the following behaviours:

- organizing a reading corner at home,
- reading when they had free time,
- going to libraries more often,
- reading when they were waiting for the school bus.

Students said that reading made them get good marks in their examinations. They spent time at home reading, rather than watching television. They borrowed books to read at home more often, and they wanted to have more time for reading. They read several types of books and they liked to ask friends and their parents to read along with them.

### **Factors Affecting the Success of the Reading Habit Promotion**

It was found that school administrators, teachers, parents, and members of school boards proposed similar ideas about the factors which affected the success of the reading habit promotion. They were:

- **National Policy.** A clear national policy was very important. It gave a good direction for work and made everyone involved realize that they have to work effectively.
- **Administrative factors** which covered: having short-term and long-term plans, having clear working processes, decentralizing responsibility, supporting resources, and following up activities.
- **Types of activities provided.** Several types of activities should be provided. They should be organized continuously and serve the needs of students. Learning resources in various forms and the reading environment were also important.
- **Teachers.** Teachers were the main promoters of the reading habit among their students. Apart from integrating reading activities in their teaching, teachers organised various kinds of activities, motivated, followed-up, and coordinated with those involved — including the parents.
- **Parents.** Parents can cooperate with teachers and organise several types of activities to promote their children's reading habit at home.
- **Students.** Students should join reading promotion activities regularly and be self-disciplined readers. Students stated that teachers helped them the most with their reading habit. Next were parents, students, principals, and the librarian respectively.
- **Support from communities and networks.** Support from communities and networks in providing finance, reading materials, and learning resources was very helpful.

## CONCLUSION AND IMPLICATIONS FOR THE FUTURE

It is recognized that reading is an essential factor in self-development and the development of a nation. In Thailand, reading is regarded as a very important tool in preparing people for lifelong learning. Since 2009, reading habit promotion has become a national policy. This study was carried out in order to determine the status and results of implementing the reading habit promotion policy. It also identified factors which affected the success of promoting the reading habit among primary school students. The results of this study can be used as guidelines for developing several kinds of activities to promote the reading habit among primary school students. Notably, the results for factors affecting the success of the reading habit promotion will enable school administrators, teachers and parents to cooperate in promoting and keeping the reading habit alive in their students. Moreover, the results of this study can be used as guidelines for promoting the reading habits of students at secondary school and higher education levels. This researcher believes that when appropriately employed, the results of this study could significantly create improved reading habits in all students throughout Thailand.

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# Effects of the Activity-Student-Experiment-Improvisation (ASEI) & Plan-Do-See-Improve (PDSI) Approaches on Mean-achievement-score-in-mathematics of Secondary School Students

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## ABSTRACT

The science of teaching and learning is embedded in the approach used to ensure learner achievement. The Activity-Student-Experiment-Improvisation (ASEI), Plan-Do-See-Improve (PDSI) approach is a teaching strategy that emphasizes learner-centeredness. It accentuates the active involvement of learners in the construction of knowledge through use of resources from the immediate environment in lesson discourse. This study attempted to establish the effect of a model of ASEI-PDSI approach to teaching on mathematics achievement scores. Quasi-experimental research design using Solomon Four Non-Equivalent Control Group Design was employed. Secondary school mathematics teachers and form two students in four public secondary schools participated. Non-random assignment was used to assign schools to control and experimental groups. The Mathematics Achievement Test and Attitude towards Mathematics Questionnaire were used to collect data. Pretest and posttest of students revealed significant differences in post-test scores in four groups at  $F(3, 100) = 2.870, p=0.04$ . Students taught using the approach gained 12.3 % of mean-achievement-score than those taught using the regular approach. Learner growth was achieved in all cognitive levels, and was greatest at analysis and synthesis levels for those exposed to the approach. Students' attitude towards mathematics determined up to 12.4% of achievement in scores. Active participation in lessons through the ASEI-PDSI model enhanced learner's attitude and improved mean-achievement-score-in-mathematics.

**Keywords:** ASEI-PDSI approach to teaching and learning, mathematics achievement, attitude towards mathematics

## INTRODUCTION

Global trends in the 21st century emphasize education quality for global competitiveness and prosperity for improved quality of life. A pedagogic paradigm shift from teacher-centered to learner-centered teaching and learning to enhance lesson delivery has become the focus. In Muraya (2009), Kolawole and UNESCO acknowledge that learner-centered teaching approaches promote higher academic achievement and positive attitudes toward a subject, compared to teacher-centered approaches. However, the teacher-centered approaches were predominantly practiced at secondary school level in Kenya and Sub-Saharan African countries. Anchored on Kenya's Vision 2030, Republic of Kenya (2007), this paper captures teaching-learning approaches as determinants of learner achievement in desirable knowledge, skills and attitudes towards realization of a mid-income economy. Although mathematics teachers in Kenya

have undergone in-service training on innovative teaching-learning methods over ten years, challenges exist to realize all envisaged gains. This paper was drawn from research that examined a number of relationships, which are discussed here.

A baseline survey on the state of mathematics and science in secondary schools was conducted at the onset of the Strengthening of Mathematics and Science in Secondary Education (SMASSE) project in 1998, and pointed out problem areas in the teaching and learning of mathematics and science. The ASEI-PDSI approach as a teaching strategy was designed by Kenyan educators in 1998, (SMASSE Project, 1998) with a view to rallying teachers of mathematics and science to good classroom practices. Over time, the SMASSE project monitoring and evaluation task force concentrated on the establishment of a sustainable INSET system paying little attention to the impact of the intervention in the classroom (MoEST, 2005). The impact studies on ASEI lessons revealed improvements in learner participation in lessons and overall teaching practice by teachers (SPIAS, 2004-2007). The impact of the ASEI-PDSI approach on mathematics mean achievement scores and retention levels were not evident. Implementation of the ASEI lesson required a re-design of various sub-models to enable focused assessment of learner achievement. In order to achieve optimum benefits from the interventions, specific models of the ASEI-PDSI approach to teaching were deemed necessary.

The ASEI-PDSI approach to teaching-learning can determine cognitive levels of learner achievement in mathematics. The approach emphasizes learner-centeredness, and accentuates the active involvement of learners in the construction of knowledge and use of resources from immediate environment in lesson discourse. The question of when, what and how to employ the approach at any one stage of a lesson is dependent on teacher competency. Mathematics teachers with the necessary know-how and experience take time to plan what and how to make use of relevant activities that are student-centred, along with innovative practical activities and resources. Since the approach demands adequate planning time, most teachers fail in this area. Despite the availability of improvisable resources in a teacher's local environment to enhance lesson delivery, the majority avoid this and simply teach abstract concepts theoretically.

The study investigated the effect of a specific model of the ASEI-PDSI approach to teaching and learning on mean achievement scores among students. The study was premised on the null hypothesis that, "there is no statistically significant difference in mathematics mean achievement scores of secondary school students who are exposed to ASEI-PDSI approach and those not so exposed". Hypotheses were tested and accepted or rejected at a significant level of  $P \leq 0.05$ .

## MATERIALS AND METHOD

Quasi-experimental research design was used in the study. Solomon Four Non-Equivalent Control Group Design (NECGD) ensured equivalency among study groups; intervening variables and implementation of ASEI-PDSI approach was employed. NECGD required a pre-test and post-test for treatment and control groups. Non-equivalent control group designs have experimental and control groups that are designated before treatment occurs and are not created by random assignment. Thirteen secondary schools were visited, to identify those at the same relative ability levels. To achieve relative homogeneity four schools were selected, based on the following criteria:

- Mean Performance Index for the school at the Kenya National Examination Council (KNEC) year 2009
- Mean Performance Index in mathematics at KNEC year 2009
- Student's KCPE scores for year 2008 to assess entry behaviour

In the four schools, form two mathematics teachers of randomly selected streams participated in the study. The mathematics topic covered was decided along with regular teachers, according to the KIE syllabus for form two Trigonometry. Nineteen ASEI lesson plans, as recommended by the Kenya Institute of Education (KIE, 2002) syllabus, were developed by the research team in collaboration with teachers from experimental schools. A manual based on the specific ASEI-PDSI model was created. The Mathematics Achievement Test (MAT) and Attitude Towards Mathematics Questionnaire (ATMQ) were used to collect data. Reliability of the tools were recorded at 0.7 Cronbach alpha. The pre-test was done on Group 1 (Experimental) and 2 (Control); while the post-test was done on Groups 1, 2, 3 and 4. Experimental schools were exposed to 19 ASEI lesson plans, while control schools conducted regular teaching for four weeks. Lessons were observed in both cases, but reflective feedback was given in experimental schools.

## RESULTS

Raw data was collated using Microsoft Excel and transferred to Statistical Package for the Social Sciences (SPSS) version 17 for analysis. The findings of the study are discussed in the following sections:

### Demographic Information

#### *Study schools, mathematics teachers and form two students*

Four girls' secondary schools were involved in the study. The four were two day and two provincial boarding schools. The mathematics teachers involved in the study possessed more than five years of teaching experience and they all held a bachelor's degree, with some in possession of master's degree. The students in the four schools were girls between sixteen and eighteen years, (Tables 1-4).

#### *The effect of the ASEI-PDSI approach on mathematics-mean-achievement-scores*

The null hypothesis on the effect of the ASEI-PDSI approach to teaching on students' mathematics mean achievement scores was tested. Analysis of Covariance (ANCOVA) was carried out on students' MAT post-test scores to estimate the effect of the ASEI-PDSI approach on students' mathematics mean achievement scores. Since initial differences in mathematical ability were observed at pre-testing, the KCPE scores were used as the covariate. The KCPE score was found to be appropriate as a covariate because regression analysis showed that it was a significant predictor of MAT scores at ( $t = -3.725$ ,  $P < 0.05$ ) with a strong model fit of 0.234 (See Figure 1).

The KCPE score was therefore an appropriate covariate for establishing statistical equivalence in the groups. The results show that Group 1 and 3, which were experimental groups, had a higher MAT mean score than for Groups 2 and 4, which were the control groups (See Table 1).

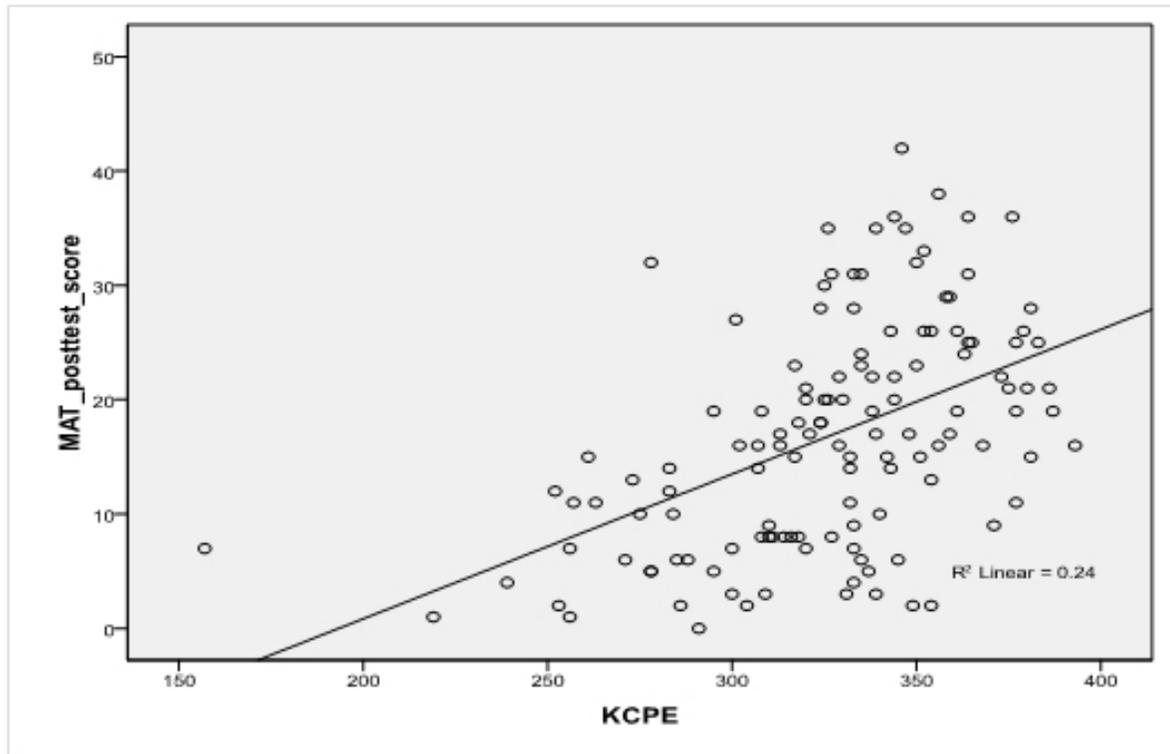


Figure 1. Scatter plot of Regression of MAT post-test scores against KCPE scores.

| TABLE 1. KCPE AS THE COVARIATE USED TO DETERMINE GROUP EQUIVALENCE |     |                     |            |                         |             |
|--|-----|---------------------|------------|-------------------------|-------------|
| Study Groups   | N   | Mean                | Std. Error | 95% Confidence Interval |             |
|  |     |                     |            | Lower Bound             | Upper Bound |
| Group 1  | 33  | 16.423 <sup>a</sup> | 1.471      | 13.512                  | 19.334      |
| Group 2  | 34  | 13.206 <sup>a</sup> | 1.623      | 9.994                   | 16.418      |
| Group 3  | 40  | 20.897 <sup>a</sup> | 1.446      | 18.034                  | 23.759      |
| Group 4  | 282 | 15.462 <sup>a</sup> | 1.795      | 11.909                  | 19.014      |

<sup>a</sup>. Covariates appearing in the model are evaluated at the following values: KCPE = 326.08.

ANCOVA was conducted on the four group mathematics mean achievement scores to determine whether observed mean differences revealed statistically significant differences in MAT mean scores at  $[F=3.860, df(3, 129), P<0.05]$ , with a moderate effect size of  $(\eta^2=0.85)$ . There was a strong observed strength for the groups' KCPE scores and their interaction at 0.812, 0.943 and 0.292 respectively.

To locate significant differences, Sidak post hoc pair-wise comparison tests were conducted and the results are presented in Table 2. The study revealed a statistically significant difference between Group 2 (control) and Group 3 (experimental). There were no significant differences in the other two groups. Since Group 3 was experimental and Group 2 control, it is concluded that the treatment had a significant effect on mathematics achievement scores and the null hypothesis ( $H_{01}$ ) was rejected.

| <b>TABLE 2. POST HOC PAIR-WISE MULTIPLE COMPARISON WITH SIDAK ADJUSTMENT</b> |                         |                              |                   |                         |   |                    |
|--|-------------------------|------------------------------|-------------------|-------------------------|---|--------------------|
| <b>(I) Study Groups</b>  | <b>(J) Study Groups</b> | <b>Mean Difference (I-J)</b> | <b>Std. Error</b> | <b>Sig.<sup>a</sup></b> | <b>95% Confidence Interval for Difference<sup>a</sup></b> |                    |
|  |                         |                              |                   |                         | <b>Lower Bound</b>  | <b>Upper Bound</b> |
| <b>Group 1</b>   | Group 2                 | 3.217                        | 2.248             | .636                    | -2.793  | 9.226              |
|  | Group 3                 | -4.474                       | 2.015             | .158                    | -9.861  | .913               |
|  | Group 4                 | .961                         | 2.331             | .999                    | -5.271  | 7.193              |
| <b>Group 2</b>   | Group 1                 | -3.217                       | 2.248             | .636                    | -9.226  | 2.793              |
|  | Group 3                 | -7.691*                      | 2.364             | .009                    | -14.011   | -1.370             |
|  | Group 4                 | -2.255                       | 2.375             | .920                    | -8.606  | 4.095              |
| <b>Group 3</b>   | Group 1                 | 4.474                        | 2.015             | .158                    | -.913   | 9.861              |
|  | Group 2                 | 7.691*                       | 2.364             | .009                    | 1.370   | 14.011             |
|  | Group 4                 | 5.435                        | 2.340             | .124                    | -.822   | 11.692             |
| <b>Group 4</b>   | Group 1                 | -.961                        | 2.331             | .999                    | -7.193  | 5.271              |
|  | Group 2                 | 2.255                        | 2.375             | .920                    | -4.095  | 8.606              |
|  | Group 3                 | -5.435                       | 2.340             | .124                    | -11.692   | .822               |
| Based on estimated marginal means  |                         |                              |                   |                         |   |                    |
| <sup>a</sup> . Adjustment for multiple comparisons: Sidak.                   |                         |                              |                   |                         |   |                    |
| *. The mean difference is significant at the 0.05 level.                     |                         |                              |                   |                         |   |                    |

***Gain in Mathematics Achievement Scores***

The gain in mathematics achievement scores were determined using Group 1 (experimental) and Group 2 (control), since both were exposed to the pre-test and post-test. Results showed that, although both Groups 1 and 2 gained during the treatment period, Group 1 (the experimental group) gained more than Group 2 — which was the control, as shown in Table 3.

| <b>Group</b>   | <b>N</b> | <b>MAT post-test score</b> | <b>MAT pre-test score</b> | <b>Gain in MAT score</b> | <b>Percentage gain in MAT score</b> |
|----------------|----------|----------------------------|---------------------------|--------------------------|-------------------------------------|
| <b>Group 1</b> | 33       | 17.03                      | 1.15                      | 15.88                    | 1,381                               |
| <b>Group 2</b> | 34       | 10.53                      | 2.09                      | 8.44                     | 404                                 |

## DISCUSSION

The objective was to establish the effect of the ASEI-PDSI approach on mean-achievement-scores in mathematics of secondary school students in Nairobi Province. From the study, a student-centered approach to teaching and learning mathematics using the ASEI-PDSI approach models ensures learner growth in desirable knowledge, skills and attitudes. This is in line with what other studies have proposed that student-centred teaching and learning approaches promote meaningful learning, since students tend to play a proactive role (OECD–PISA, 2003).

The ASEI-PDSI approach model enhances performance in mathematics scores—an aspect that the Kenyan society desires. It also tends to advocate for quality teaching/learning processes, while societal pressure is on syllabus coverage within the shortest time possible and preparation for national examinations — which poses conflicting demands on mathematics teachers. Effandi and Maat (2010) note that teachers should know how students learn mathematics, how best to teach, and the focus should be a paradigm shift from traditional methods of lesson delivery to more student-centred approaches. Wambugu and Changeiywo (2008) note that the approach a teacher adopts affects students' achievement, thus the need to select appropriate teaching approaches at all times.

Students taught using the ASEI-PDSI approach model realized higher mean-achievement-scores in mathematics than those taught using the regular approach to teaching. ANCOVA and Sidak post hoc pairwise comparison tests showed statistically significant differences in experimental and control groups in MAT mean scores. Gains in mathematics achievement scores after exposure to the ASEI-PDSI approach were computed. Although both groups — experimental and control — gained, the experimental group gained 3 times more.

This is in line with McDowell (2001) who states that students learn by active participation, dialogue and interactions with course materials and with each other. This is further affirmed by the National Research Council (1995), which states that good teachers create environments in which they and their students work together as active learners.

The research project raised teachers' expectations in terms of monetary rewards and further professional development—an aspect that the team found challenging. Behavioural change takes time, and teachers in experimental groups took considerable time to adequately internalize the ASEI-PDSI approach model. A difference in teaching pace among teachers meant that some took slightly longer to cover the same content than was allocated. Inadequate funds delayed the collection of all data, including retention tests and vast distances between experimental and control schools were demanding for the team.

## CONCLUSION

The student-centered approach to teaching and learning mathematics using the ASEI-PDSI approach models ensures learner growth in knowledge, skills and attitudes and at all cognitive levels; but this growth is greater at higher cognitive levels such as analysis and synthesis. This is in line with other studies (PISA, 2000), where student-centered teaching and learning approaches promote meaningful learning since students tend to play a proactive role.

The ASEI-PDSI approach to teaching and learning is effective in promoting the retention of learned concepts and mathematical ability. By creating opportunities for active learner participation, dialogue and interaction with course materials and with each other, learning is enhanced.

The ASEI-PDSI model helped learners to acquire and positively change their attitude towards mathematics. Students' attitude towards mathematics determines achievement in the subject and can contribute up to 12.4% of achievement in the subject. This implies that when teaching in the classroom, the teacher should ensure that s/he creates a conducive environment where learners can enjoy learning.

In view of above findings, the study makes the following recommendations:

1. Continuously build the capacity of mathematics teachers in adequate lesson planning, based on the ASEI-PDSI approach model and implementation to ensure behaviour change.
2. To ensure that mathematics lessons emphasize higher order thinking skills, the focus of INSETs should be on the ability to craft appropriate activities, questioning skills and tasks that enhance critical thinking.
3. Education stakeholders need to be continuously sensitized about the benefits of quality teaching/ learning processes compared to rushed coverage of the syllabus and drilling for exam grades.
4. The approach to teaching and learning is in line with the general objectives of secondary education in Kenya — which focus on developing the ability to inquire, critical thinking, and the joy of learning, among other skills,
5. To realize the goals of vision 2030 in science, technology and innovation, the focus should be on the process of teaching and learning, rather than on educational products.

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# The Current Status and Challenges of School-based Continuing Professional Development in Zambia: An Analysis of Education Support Structures

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## ABSTRACT

Through the 1996 “Educating Our Future” policy, The Government of Zambia enacted the School Program of In-service for the Term (SPRINT) to enable in-service teachers at primary and secondary schools to have opportunities for continuous learning. This resulted in the establishment of both human and physical education structures to support the policy implementation. As a way of strengthening SPRINT, the government has been implementing the lesson study practice from 2005 in the framework of the School Based Continuing Professional Development (SBCPD) program. With a view to analyse the education support structures for the School Based system, this paper analyses the current level of cooperation and support among education support teams such as government education offices and colleges related to SBCPD. The survey included semi-structured interviews and Likert scale analysis of questionnaires administered to members of the education support teams. The results showed that there were weak Education support structures at national, provincial and district levels towards SBCPD. Variations in shared understanding of the core practice of SBCPD were observed. However, the structure itself — from national to local level — was found to be adequately supporting SBCPD practices. The implications of the findings are that teachers were negatively affected on the continuum of teacher professional growth.

**Keywords:** education support structure, education management, school-based continuing professional development (SBCPD), school program of in-service for the term (SPRINT), collaborating schools

## INTRODUCTION

In September 2015, the Ministry of General Education (MOGE) in Zambia in collaboration with the Japan International Cooperation Agency (JICA) conducted a baseline survey. Among other objectives for the baseline was the establishment of cooperation and support among education support teams and teacher resource centres to enhance the practice of school-based continuing professional development in schools — this being the focus of attention for the SPRINT system which the Ministry put in place as the framework for conducting school-based continuing professional development.

## BACKGROUND

The Ministry of General Education places great importance on the role that teachers play in meeting the challenges of providing quality education. The teacher factor being well brought out in the ministry’s policy document (Educating Our Future, 1996) on the importance of employing well qualified and

competent teachers. The policy document further states that the quality and effectiveness of any education system largely depends on the quality of its teachers, as they are the single most important resource and determinant of success in meeting the education system's goals.

Guided by the policy statements, the interventions developed address the issue of teacher education from two main fronts:

1. The initial training (pre-service).
2. The on-going in-career professional competence of teachers (in-service), with a focus on on-going teacher professional development.  
([www/home.hiroshima-u.ac.jp/cice/publication/sosho4-2-17pdf](http://www/home.hiroshima-u.ac.jp/cice/publication/sosho4-2-17pdf)).

In demonstrating the importance of the on-going in-career professional competencies of teachers, the ministry institutionalised school-based continuing professional development (SBCPD) as a sustainable and cost-effective forum and platform for teachers in schools to have the opportunity to continuously update their knowledge and to sharpen their skills in order to stay current with modern trends and developments in the system.

### **School Program of In-service for a Term (SPRINT) System in Zambia**

Since 1980, initiatives to improve the quality of teaching and learning — especially in mathematics and the sciences — increased. Initiatives such as improving girls' participation and performance in science, mathematics and technology (SMT) subjects under the Forum for African Women Educationists (FAWE) developed its science, mathematics, and technology (SMT) model to increase and sustain access, interest, participation and performance of girls in SMT subjects at all levels. The model — which trains teachers to adopt and use SMT curricula, teaching and learning materials and classroom practices that are gender-responsive — involves teachers as well as education planners, curriculum developers, publishers and women leaders; and sensitises parents and stakeholders to the importance of girls' participation in SMT (<http://www.fawe.org/about/index.php>). Another initiative which aimed at improving teachers' skills was the Action to Improve English, Mathematics and Science (AIEMS) project. The main purpose of AIEMS was to strengthen the Ministry of Education in its provision of in-service training for trainers and teachers in primary and secondary English, Mathematics and Science. The project employed the cascade system for the dissemination of training and learning for trainers and teachers (<https://www.google.com.pg/#q=www.Action+to+Improve+English+Mathematics+and+Science.com>).

Most of these initiatives were government-driven and donor funded programmes, top-down in nature and usually delivered through the cascade system, characterised by workshops. According to Harwell ([www.cord.org/uploadedfiles/HarwellPaper.pdf](http://www.cord.org/uploadedfiles/HarwellPaper.pdf)) sustained, systematic professional development programs that unfold as processes over time are generally superior to individual workshops and seminars which are one-time events. Initiatives that were characterised by workshops and seminars that were one-off events lacking continuity gave way to a situation that needed to change the mode of delivery of INSET programmes.

The existing initiatives were not owned by the teachers and therefore could not be sustained at lower implementing levels, such as the schools. Teachers participated in the programmes due to directives other than improving their professional competences ([www/home.hiroshima-u.ac.jp/cice/publication/sosho4-2-17.pdf](http://www/home.hiroshima-u.ac.jp/cice/publication/sosho4-2-17.pdf)).

The INSET education interventions in the Zambian context were redefined as stipulated in Government Policy on INSET in 1996 (MOE, 1996). This caused the government to institutionalise the School-Based Continuing Professional Development (SBCPD) activities as a way of developing a guide to how a sustainable CPD could be managed and owned at the point of implementation. As a way of interpreting the policy, a system known as School Program of In-service for the Term (SPRINT) was established, leading to a shift in 1997 from Resource Centre based INSET to School-based In-service training — later to be called School-based Teacher Continuing Professional Development. The reason for this was that many of the INSET materials were ending up in schools, but not addressing the professional needs of the teachers. Additionally, the cascade system that was more frequently employed as a form of INSET delivery led to ‘dilution’ and distortion of the subject matter and content of the training packages.

### **SPRINT (and its supportive structures of NEST, PEST, DEST, ZEST) as a framework for School-Based CPD**

SPRINT is a school-based system of continuous professional development for teachers based in schools, managed by head teachers and supported by Teachers’ Resource Centres and In-service Coordinators. It is meant to be a cost effective system that reaches out to many teachers. SPRINT was developed and formally introduced in the schools as a way of having a framework through which all the teacher professional development activities could be carried out. The introduction of SPRINT was then followed by the establishment of Education Support Teams at various levels to streamline the interventions. According to the website [www.wscuonline.org/index.php?option=com](http://www.wscuonline.org/index.php?option=com) — an Education Support Team (EST) is a group of people who function as a “think tank” to help solve the puzzle going on with a student and determine what he or she might need to be more successful as a learner. The Education Support Teams in the Zambian context, that is, National Education Support Team (NEST), Provincial Education Support Team (PEST), District Education Support Team (DEST), and Zone Education Support Team (ZEST) provide administrative and technical support to the school focused continuing professional development. These Education Support Structures (ESS) were established in order to provide support to the school-based continuing professional development, and the Teacher Resource Centres. Bearing in mind that top-down interventions still exist alongside the bottom-up interventions, the Education Support Structures play a key role in streamlining and synchronising the programmes/ interventions to minimise overloading the teachers who are the implementers. The above arrangement agrees well with Hawell’s ([www.cord.org/uploadedfiles/HarwellPaper.pdf](http://www.cord.org/uploadedfiles/HarwellPaper.pdf)) assertion that professional development can only succeed in settings and contexts that support it. In this case, it was assumed that the Education Support Teams that have been put in place and the Teacher Resource Centres are the contexts that provide the support needed for teachers to grow professionally.

The SPRINT framework was also a way of accelerating and decentralising operations regarding institutionalisation of school-based CPD. Additionally, the education supporting structures of NEST, PEST, DEST and ZEST (Ministry of General Education, 2015) facilitated the streamlining of in-service teacher provision operations through continuous professional development.

### **Statement of the Problem**

Bearing in mind that pre-service teacher preparation alone is not enough to keep a teacher going for the rest of his or her teaching career, the ministry established teacher continuing professional development

— to ensure that teachers continue to grow and develop professionally through the practice of School Based continuing professional development, which includes lesson study for teachers enhanced and supported by structures like the Education Support Teams and teacher resource centres (TRCs). However, to date there has been no study conducted to establish whether the structures that government put in place have had an effect on the growth of teachers professionally. This study therefore sought to determine the current level of cooperation and support between Education Support Teams and Teacher Resource Centres in order to enhance school-based continuing professional development.

### **Objectives**

This research sought to determine the current level of cooperation and support among education support teams and teacher resource centres.

The following research questions were used to meet the objectives of the research:

- a. What are the current practices of training and facilitation among Education Support Teams and Teacher Resource Centres to strengthen and enhance school-based continuing professional development?
- b. How strong/effective are the linkages between the Education Support Teams/Teacher Resource Centres and schools with regards to the enhancement of school-based continuing professional development?
- c. How strong/effective are the linkages between Education Support Teams/TRCs and colleges of education, with regards to the enhancement of school-based continuing professional development?

### **Significance of the Research**

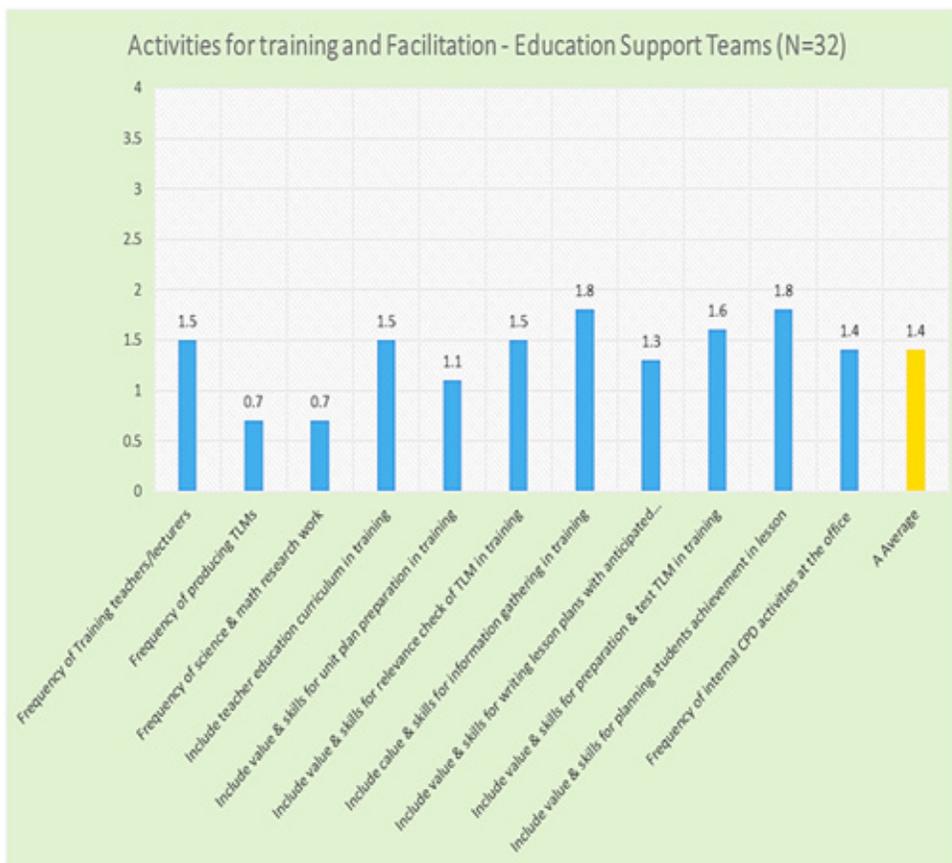
The findings of this research will help the Ministry of Education to determine the effectiveness of both Teacher Resource Centres and Education Support Teams in enhancing school-based continuing professional development. The research findings will also be used by the ministry as possible interventions to make adjustments to the operations of the Education Support Teams and Teacher Resource Centres where the need arises.

### **METHODOLOGY**

This research used a survey method which involved members of the Education Support Teams (PEST, DEST) and 14 Resource Centre Coordinators in nine of the ten provinces of Zambia. Each of the above were subjected to a self-administered questionnaire. Since both categories were targeted for their ability to enhance school-based teacher professional development, they were subjected to questions which would highlight this in their responses. Areas to do with activities for training and facilitation, activities for promoting collaboration with schools, and activities for promoting collaboration with colleges as places which prepared teachers for teaching were included in the questionnaires.

### **FINDINGS AND INTERPRETATIONS**

Using the Likert scale (0–4) the questionnaire were analysed. The findings are shown below.



**Figure 1.** Activities for training and facilitation — Education Support Teams.

***What are the current practices of training and facilitation among Education Support Teams and Teacher Resource Centres to strengthen and enhance school-based continuing professional development?***

The percentage of overall average score for training and facilitation by Education Support Teams was 1.4 on the 0–4 scale.

The overall score for training and facilitation by Education Support Teams was at 1.4 on the 0–4 Likert scale while the score for training and facilitation by Teacher Resource Centres was at 1.3 on the 0-4 Likert scale. Training and facilitation are among the key skills and competencies of the Education Support Teams as they are supposed to help teachers in matters pertaining to teacher professional growth. Training and facilitation skills are an important component that the Education Support Teams need to have for them to provide support to teachers’ continuing professional development. Included in this particular area of research were the ‘value and skills for gathering information’ and ‘value and skills for planning of evaluation of students’ achievement in the lesson’ in the content for training. These were both scored the highest with 1.8 each on the scale 0-4. On the other hand, ‘frequency of producing TLM’ and ‘frequency of doing research in mathematics and science’ scored lowest with 0.7 each on the

scale. The low scoring of 0.7 reflects that these ESTs, although they have been given the responsibility to support teachers in their continuing professional development activities, do not conduct research in subjects such as mathematics and science, neither do they frequently engage in materials production activities to develop teaching and learning materials. Generally, these findings indicate an irregular and insufficient number of training and facilitation activities by Education Support Teams.

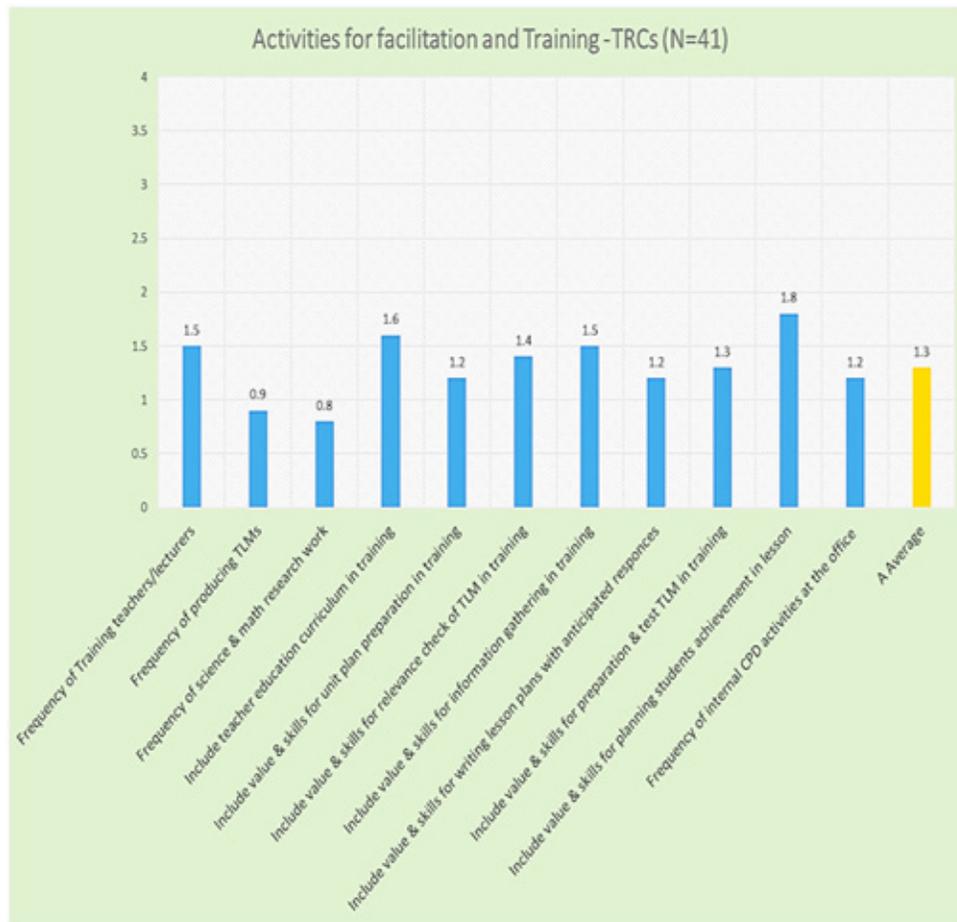
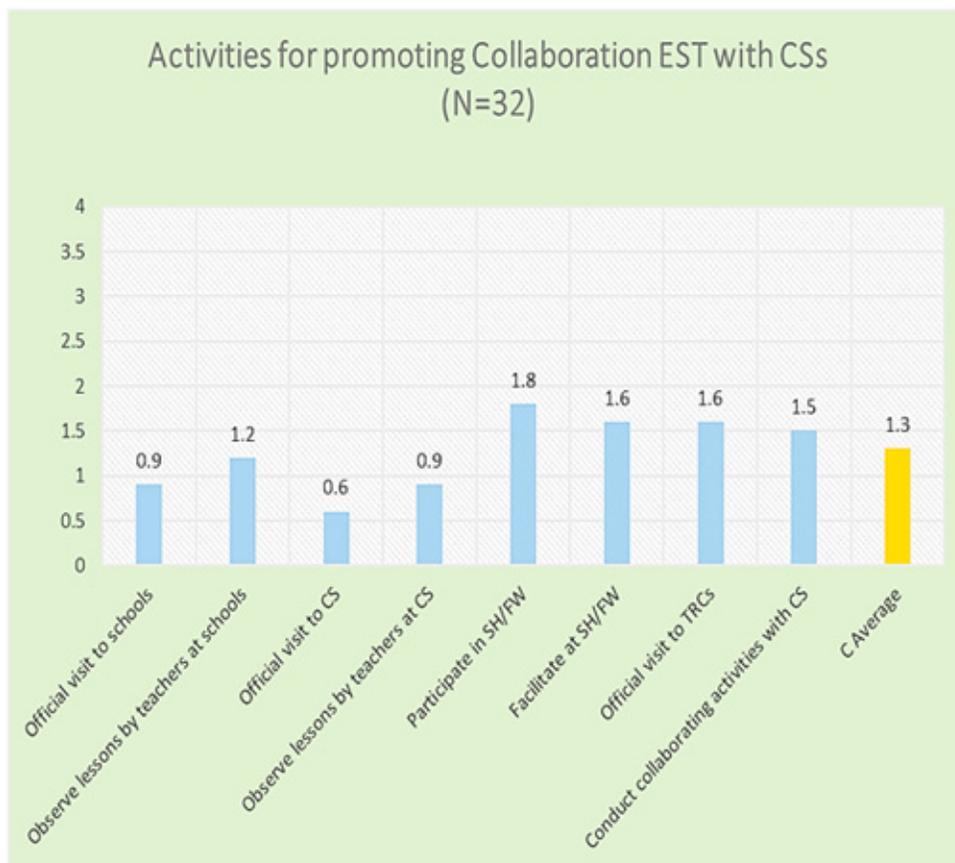


Figure 2. Activities for facilitation and training — TRCs.

***How strong/effective are the linkages between the education support teams/teacher resource centres and schools with regards to the enhancement of school-based continuing professional development?***

The average score for linkages between teacher resource centres and schools was at 1.3 on the 0–4 Likert scale, while the average score for linkages between Education Support Teams and collaborating schools was also at 1.3 on the 0–4 Likert scale. Under this component were a variety of strands that fed into the area of collaboration between the education support structures (ESTs) and teacher resource centres. The strands included frequency of training teachers/lecturers, teacher education curriculum in training, values in information gathering, internal CPD activities at the office, and so on. The average score of 1.3

on the Likert Scale shows that the Education Support Structures are not doing their best when it comes to the linkages between themselves and the schools. The strands appearing on the scale all contribute to the major aspect of the linkages. The ESSs need to improve in this particular area.



**Figure 3.** Activities for promoting collaboration EST with CSs.

The percentage overall average score for linkage of EST with collaborating schools was 1.3 on the 0–4 scale. Participation in stakeholders and facilitators workshops was a highly scored area, with 1.8 on the scale. However, official visits to collaborating schools scored the least, with 0.6. In general, the links between the EST and collaborating Schools is below average. Among the various sub-components contributing to this area and also subjected to the Likert scale were: official visits to schools, lesson observation by teachers in the collaborating schools, participation in the stakeholders workshops and facilitators’ workshops, and official visits to the teacher resource centres, as shown in the graph. Participation in the stakeholders’ workshops scored the highest. This could be an indicator that there is some level of collaboration between the Education Support Teams and the collaborating schools. Collaborating schools are those schools that are attached to the colleges of education so that student teachers or teachers that are undergoing pre-service training can have the opportunity to experience actual teaching in schools; and also participate in other activities, including teacher continuing professional development activities. The stakeholders’ workshops and facilitators’ workshops are activities that evolve around the lesson study

concept that the Zambian Government is using as a tool to enhance teacher professional development. During the stakeholders’ workshops the teachers engage in activities to review the CDP activities that took place during the course of the term. This is the area that has scored the highest under the Likert scale (1.8) — indicating that many teachers do attend these gatherings. However, it remains unclear as to whether the teachers’ attendance at these meetings is a sign that they grow professionally.

The average score of 1.3 again shows that in the area of promoting collaboration between the education support teams and collaborating schools, there remains much to be done.

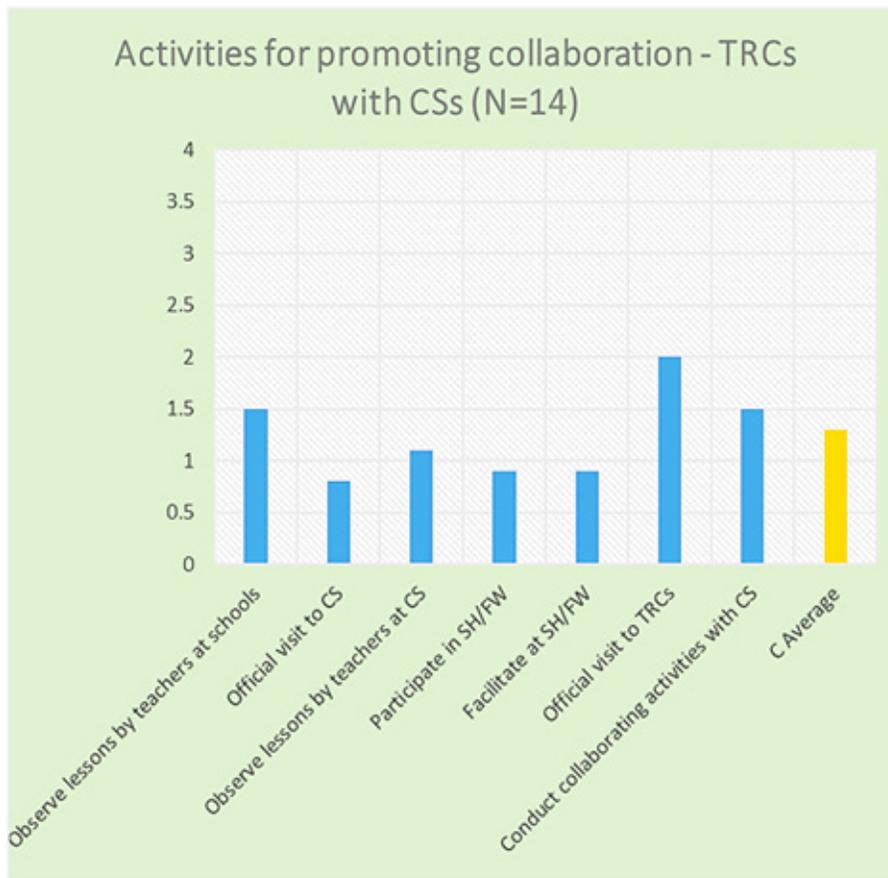


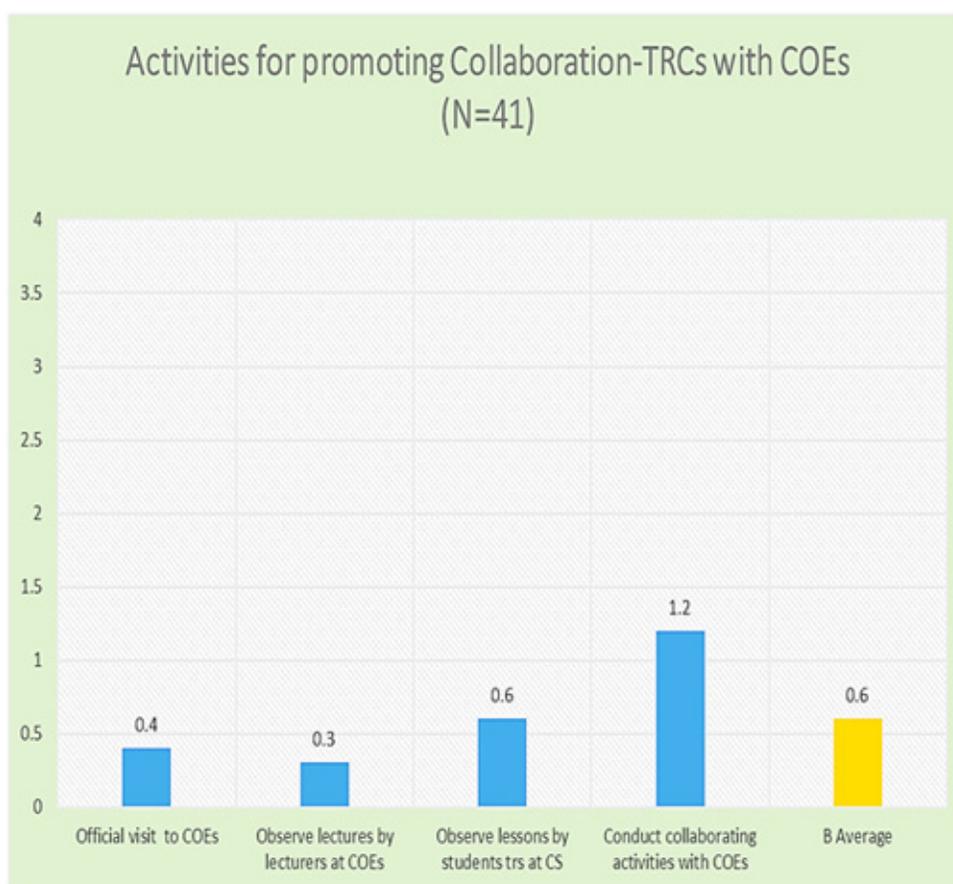
Figure 4. Activities for promoting collaboration — TRCs with CSs.

***How strong/effective are linkages between Education Support Teams and TRCs with colleges of education with regard to the enhancement of school-based continuing professional development?***

The average score for linkage of TRCs with COEs was 0.6 on the 0–4 scale, while linkage between Education Support Teams and the Colleges of Education was at 0.7 on the 0-4 Likert scale.

Figure 5 shows the scores pertaining to the collaboration between colleges of education (COEs) and the teacher resource centres (TRCs). The collaboration between these two institutions is critical. They are two sides of the same coin. Colleges of Education are responsible for the initial teacher preparation

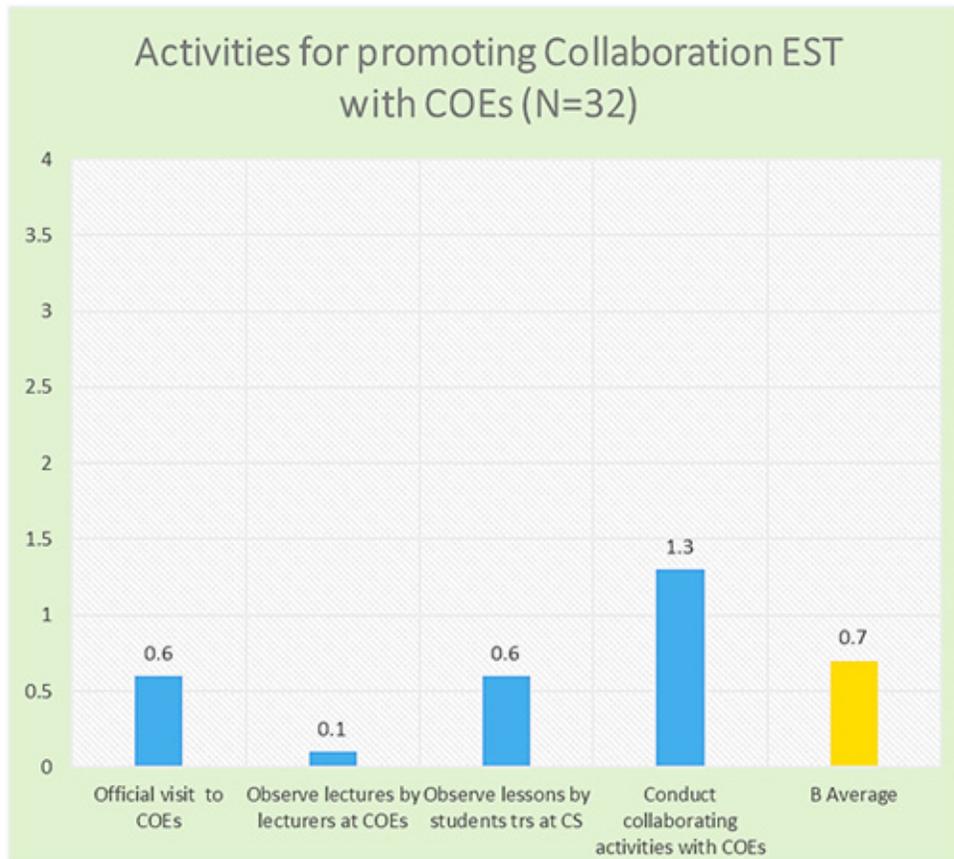
(pre-service training) and the Teacher Resource Centres are designated as structures that support continuous teacher professional development. The average score is 0.6, with the strand on conducting collaborating activities between Colleges of Education and Teacher Resource Centres scoring the highest at 1.2. The average score of 0.6 is a reflection of the emerging picture that there is not much collaboration between these two institutions which are directly responsible for teacher professional development and growth. Official visits to the colleges of education by teacher resource centre personnel, observing lectures at the colleges of education, observing lessons by student teachers at collaborating schools, and conducting collaborating activities with colleges of Education by the teacher resource centre coordinators, are all among the activities that were identified as leading to collaboration between the two institutions. The low scores, where not even one strand reached half of the maximum score, give a negative interpretation of this intended practice.



**Figure 5.** Activities for promoting collaboration – TECs with COEs.

Figure 6 reflects the activities for collaboration between Education Support Teams with Colleges of Education. Conducting collaborating activities by the Education Support Teams with Colleges of Education had the highest score of 1.3, while observing lectures at the college of education scored the lowest, at 0.1. The average score for this was 0.7. Collaboration between the education support teams

and the colleges of education is one strategy that could introduce the trainee teacher to teacher continuing professional development. However, even an official visit to the colleges of education by the education support teams is less frequent — hence the low score of 0.6. A mere visit to the college can be a great enhancement and a step forward to promoting much needed collaboration.



**Figure 6.** Activities for promoting collaboration EST with COEs.

### Interpreting the Findings

The survey sought to establish the role that the Education Support Teams and Teacher Resource Centres play in enhancing school-based continuing professional development. A variety of strands were used in relation to the major areas which were subjected to the Likert scale interpretation of 0–4. The highest average score achieved was 1.4, in response to the question, “What are the current practices of training and facilitation among education support teams and teacher resource centres to strengthen and enhance school-based continuing professional development?” The lowest average score achieved was 0.7 under the question, “How strong are linkages between education support teams and TRCs with colleges of education with regards to the enhancement of school-based continuing professional development?”

It must be noted that in all the areas the average scores were below 2. A number of ideal parameters were used to create a picture with regards to the main questions. The emerging picture is that the cooperation and support among the sister institutions — that is, education support teams (ESTs), teacher resource centres (TRCs) and the colleges of education — for the enhancement of school-based continuing professional development is weak. Colleges of education are a key factor, because they are responsible for the initial teacher training component referred to previously.

## IMPLICATIONS

Due to this negative emerging picture of a weak level of cooperation and support among sister institutions, the school-based continuing professional development among teachers is negatively affected. Additionally, it implies that although the education support structures are in place, their capacity to support teacher professional growth through continuous professional development still needs to be developed. So contrary to Hawell ([www.cord.org/uploadedfiles/HarwellPaper.pdf](http://www.cord.org/uploadedfiles/HarwellPaper.pdf)), who says that professional development can succeed only in settings and contexts that support it, we observe in this case, that the education support teams and the teacher resource centres may be the intended settings for promoting the continuous professional development for teachers, but judging from the low scores in the majority of the strands and on the average, they are not supporting the cause. Additionally, contrary to the assertion that education support teams are “think tanks”, in the case of teacher professional development, they do not seem to measure up to that standard.

## RECOMMENDATIONS

Harwell stated ([www.cord.org/uploadedfiles/HarwellPaper.pdf](http://www.cord.org/uploadedfiles/HarwellPaper.pdf)) that teacher professional development is not an event, but that it is a process; and that sustained, systematic professional development programs that unfold as processes over time are generally superior to individual workshops and seminars which are one-time events. In light of this, the Ministry of General Education, using its mandated structures such as the In-service unit, the Pre-service unit and the National Science Centre, should come up with strategies to build the capacities of the education support teams (ESTs) and teacher resource centres (TRCs). These are the structures that will ensure that school-based teacher professional development programs and activities are conducted in a manner that will bring about the desired teacher professional development under the SPRINT framework. In addition, the colleges of education should also be brought on board in terms of teacher continuing professional development programmes. This move will help to bridge the gap between initial teacher training and continuous teacher training.

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# A Model Teacher Induction Programme and Teachers' Perceptions of its Support Structures

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## ABSTRACT

Continuing the professional growth of novices so that they become effective teachers is an issue that has been attracting the attention of education administrators the world over. Research suggests that induction programmes with comprehensive support structures can achieve this outcome. The Novice Early Childhood Teacher Induction Programme, the focus of this paper, is one such programme. The design of the induction programme is guided by the conceptual framework of Eisenschmidt, (2006) — professional, social and personal dimensions of teacher support. The study sought to ascertain novices' satisfaction with the six support structures of the programme. The participants were 35 novice early childhood teachers who were exposed to the support structures for one academic year. Data were collected through a survey questionnaire at the end of the academic year and analysed logico-inductively. Findings of the survey indicate that the majority of the novices rated mentorship, master teacher demonstrations and the teacher-support group as the most beneficial support structures. The Career Entry and Development Profile and Early Childhood Support Courses were rated by the majority as somewhat beneficial and the Collaborative Action Research Cycle as not at all beneficial. Participants also offered useful comments to validate their ratings of the support structures. Recommendations were made for further use of the induction programme.

**Keywords:** professional growth, novice teachers, induction programme, support structures

## INTRODUCTION

The most devout head teacher and the most adamant advocate for novice teacher development would concede that many novice teachers approach the job with enthusiasm. Both educators would say that with such willingness and a supportive environment, these teachers are likely to make good progress as beginning teachers. Not all however, would agree on the type of support, neither would they agree on how best to structure support for novices. Should support for novice teachers be disjointed, unplanned and unstructured, left for the novice to seek out, or should support be provided through a planned teacher induction programme? It is increasingly acknowledged that induction programmes are essential, for even a very comprehensive teacher education programme cannot prepare teachers for their job completely (Britton, Paine, Pimm, & Raizen, 2003). Effective induction and mentoring of new teachers is a critical component of early teacher development and thus in the development of quality teachers (Ingersoll and Strong, 2011). Yet, there is less agreement about how to effectively induct and mentor beginning teachers to fill classrooms with high-quality, accomplished teachers (Langdon, Alexander, Dinsmore, & Ryde, 2012). A well-planned induction programme considers all of the needs of the beginning teacher as the

teacher is trained, guided, supported, and encouraged during the delicate days of the first year (Dyal & Sewell, 2002). Induction programmes should be well-planned, systematic, and organized for success, because at no other time in a professional's career does a teacher need more consideration, guidance, and understanding (Casterter & Young, 2000). Considering the compelling evidence supporting the value of teacher induction, every education system should have an induction programme for novice teachers. The following portions of this article describe the support structures of an induction programme for novice teachers as well as findings from a survey of novices' perceptions of the support structures.

## **SUPPORT STRUCTURES OF THE PROGRAMME**

The NEC Teacher Induction Programme, as the programme was named, evolved out of the author's quest for positive ways to support and encourage novice early childhood teachers in Guyana, as they transition from student-teachers to teachers of students. The primary goal of this one-year induction programme was to improve the teaching performance of the novices through the provision of six support structures namely; Mentorship, Career Entry and Development Profiles, Master Teacher Demonstrations, Teacher-support Groups, Collaborative Action Research, and Early Childhood Support Courses. To develop the model, the author reviewed literature, including research on induction programmes and professional development of novice teachers, and discovered that several dimensions of teacher support have been distinguished as significant ingredients for effective teacher induction programmes. The design of the model was however guided by the conceptual framework of Eisenschmidt (2006). This framework consists of professional, social and personal dimensions of teacher support and was considered appropriate as the dimensions are representative of the skills and competencies that the author envisages to be important to novice teacher development. Additionally, the author believed that the dimensions focus on the diverse range of novice teachers' needs and are equally valuable to novice teacher development.

According to Eisenschmidt, the professional dimension emphasises supporting the novice teacher in gaining more confidence in the use of essential teacher competences, including pedagogical knowledge and skills. Eisenschmidt stated that the key requirements of this dimension include access to knowledge through exchange between novice and experienced teachers, further courses and consultations. In the NEC Teacher Induction Programme, the professional dimension of Eisenschmidt's framework is reflected through the master teacher demonstrations and early childhood support courses.

With the social dimension, Eisenschmidt posited that emphasis is on supporting the novice teacher to become a member of the learning community of the school, and helping the novice to understand and accept the qualities, norms, manners and organisational structures that exist within the given school. Eisenschmidt identified collaborative work, teamwork and project groups as the key requirements of the social dimension. The support structures that reflect this dimension in the NEC Teacher Induction Programme are the Teacher-Support Group and Collaborative Action Research.

Eisenschmidt explained that the personal dimension covers the process of development of a professional identity as a teacher. A safe, non-judgemental environment, team teaching and co-teaching were identified as key requirements of this dimension. In the NEC Teacher Induction Programme the personal dimension is reflected through Mentorship and a Career Entry and Development Profile. Table 1 details the activities of the various support structures.

| <b>TABLE 1. ACTIVITIES OF THE SUPPORT STRUCTURES.</b> |  |
|---|--|
| <b>SUPPORT STRUCTURES</b>                             | <b>ACTIVITIES</b>  |
| <b>1. Mentorship</b>                                  | Mentor conducts school and community level orientation, maintains daily on-site contact with novices, advises novices on classroom management and display strategies, engages novices in professional dialogue and shared professional development sessions, guides novices in daily lesson planning, models effective instructional strategies, observes novices use of strategy plans and gives constructive feedback, coaches novices in areas of identified need, arranges master teacher demonstrations for novices to observe, guides novices to generate ideas for improving planning and implementation strategies, facilitates effective communication between novices and parents/ senior staff/colleagues, supports novices in the completion of the Career Entry and Development Profile and the Induction Evidence Portfolio, conducts professional review meetings with novices, completes record of professional review meeting forms and offers novices emotional support and encouragement. |
| <b>2. Career Entry and Development Profile</b>        | <b>Transition Point 1</b><br>Novices complete an entry profile, identify their priorities for development and under the mentor’s supervision, set professional development objectives and develop an action plan for achieving the objectives.   |
|   | <b>Transition Point 2</b><br>Novices review their professional development over the induction period, record their achievements and continuing professional development needs for the next year of teaching.   |
| <b>3. Master teacher demonstrations</b>               | Master teacher demonstrates lessons and models specific teaching strategies for novices, facilitates reflective discussions on the experience, shares written plans for demonstrated lessons with novices, acts as a consultant and offers professional advice at novices’ request.  |
|   | Novices reflect on the experience and complete a reflective learning log.  |
| <b>4. Teacher support group</b>                       | Group members (novices, mentor, master teacher, all teachers in the same grade level as the novices) engage in joint lesson preparation and planning, and offer each other emotional and practical support.  |
|   | Group members meet to study, analyse and discuss the regional Standards of Practice for the Teaching Profession, agree on strategies for achieving same, and develop strategy plans.   |
| <b>5. Collaborative Action Research</b>               | Group members (same as above) identify an existing issue/problem, research and select strategies and resources for addressing the issue/problem, develop a plan of action for addressing the issue/problem, implement the plan of action in their respective classrooms, analyse outcomes, and if necessary identify alternative strategies or modifications for future actions.   |
|   | Novices evidence their learning and skills development through the completion of reflective learning logs.   |
| <b>6. Early Childhood support courses</b>             | Novices select courses, read course materials and complete learning activities related to same.  |

## **SURVEY, PARTICIPANTS, DATA COLLECTION AND ANALYSIS**

A brief survey-questionnaire was developed, the objective of which was to ascertain novices' satisfaction with the support structures of the programme. The instrument consisted of closed-ended questions with response choices soliciting novices' perceptions of the support structures. It was administered by the researcher at the end of the induction year. The participants were 35 novice early childhood teachers who had directly interacted with the support structures through their participation in the NEC Teacher Induction Programme. The data collected was analysed logico-inductively. This is a thought process that uses logic to make sense of qualitative data (Mertler & Charles, 2005). First, the data was read through by question, preset themes were identified and scrutinized to discover patterns. Abbreviated letter codes were inserted to highlight patterns among the data. Next, the data for each question was categorised according to pattern, information pertaining to patterns was summarised and conclusions induced. Finally, conclusions were presented using frequencies, percentages and narratives to describe novices' perceptions of the support structures.

## **FINDINGS**

As depicted in Table 2, across the group, three structures stood out from the analysed data; mentorship, master teacher demonstrations and the teacher-support group. The majority (80%) of the novices viewed each of the three structures as being very beneficial to their induction experience. Moreover, from the comments received, the role of these three structures seemed critical and indispensable to the perceived success of the novices. Novices praised the structures effusively. "My mentor was very supportive and available at all times", one novice wrote. Another explained that the master teacher demonstrations she observed were very informative and helped her improve her own methods of delivery. Additionally, some novices indicated that the teacher-support group provided a safe place for them to collaborate on lesson planning. It should be noted that these findings add credence to the work of several researchers. While Smith & Ingersoll (2004), found that mentorship was an essential component of a comprehensive induction programme, Dyal & Sewell (2002), asserted that opportunity to observe and reflect on model lessons conducted by master teachers is one of the key principles that should guide effective teacher induction. In keeping with the activities of the teacher-support group, the Alliance for Excellent Education (2004), posited that one of the supports that constitutes a comprehensive induction programme is common planning time for collaborative conversations on substantive content and pedagogical issues. Overall, it was clear that the novices viewed mentorship, master teacher demonstrations and the teacher-support group as valuable to the NEC Teacher Induction Programme. However, the situation was not the same with the other support structures.

Many of the novices did not seem happy with the Collaborative Action Research Cycle. The findings displayed in Table 2 reveal that 94% of them viewed this support structure as not at all beneficial to their induction experience. Some novices highlighted that the structure was too demanding and added to their already busy schedule as classroom teachers. Others attributed their rating to one of two reasons — either the support structure was not given enough attention at their school, or they were never able to complete a cycle. The Career Entry and Development Profile and Early Childhood Support Courses also attracted negative comments from the novices. A large number of them didn't seem to have benefited much from

the two structures, thus they viewed them as somewhat beneficial. While 66% of the novices expressed this view about the Career Entry and Development Profile, it was 86% for the Early Childhood Support Courses. The dominant comment was that the structures involved too much record-keeping and were too time consuming. Some novices cited that they were not willing to participate in the courses since the idea reminded them of their formal teacher training experiences. Others disclosed that they had difficulty keeping up with course activities and before long, decided not to follow through with the courses.

| Support Structures                             | Not at all Beneficial<br>(n=35) |    | Somewhat beneficial<br>(n=35) |    | Very beneficial<br>(n=35) |    |
|--|---------------------------------|----|-------------------------------|----|---------------------------|----|
|  | Freq.                           | %  | Freq.                         | %  | Freq.                     | %  |
| <b>1. Mentorship</b>                           | 0                               | 0  | 7                             | 20 | 28                        | 80 |
| <b>2. Career Entry and Development Profile</b> | 12                              | 34 | 23                            | 66 | 0                         | 0  |
| <b>3. Master Teacher Demonstrations</b>        | 0                               | 0  | 7                             | 20 | 28                        | 80 |
| <b>4. Teacher-support group</b>                | 0                               | 0  | 7                             | 20 | 28                        | 80 |
| <b>5. Collaborative Action Research</b>        | 33                              | 94 | 2                             | 6  | 0                         | 0  |
| <b>6. Early Childhood Support Courses</b>      | 5                               | 14 | 30                            | 86 | 0                         | 0  |

Consequently, it would be safe to conclude that of the six support structures, the novices viewed the Career Entry and Development Profile, Collaborative Action Research and the Classroom Support Courses as the least beneficial to their induction experience. This does not mean that such support structures were not necessary — in fact, there is evidence in the literature to substantiate their value in comprehensive teacher induction programmes. On the issue of Collaborative Action Research, Britton et al. (2003) asserted that in comprehensive induction programmes the practice of reflecting, inquiring, researching by oneself and with others enhances the teaching practice of novices, provides opportunities for them to actively construct knowledge within learning communities and to relate their experiences to other sources of information. Moreover, both the career entry and development profile and the classroom support courses required novices to engage in reflecting and recording activities, and Stansbury & Zimmerman (2000) posited that such activities encourage novice teachers' renewal and growth. The authors cautioned that novice teachers should reflect critically and suggested that to promote critical reflection, novices must be encouraged to write in journals and record their day-to-day experiences. It is obvious then that, although the novices did not view them as very beneficial, the Career Entry and Development Profile, Collaborative Action Research and Classroom Support Courses are all vital support structures for novice teacher development.

## CONCLUSION AND RECOMMENDATIONS

Quality teachers are instrumental to the success of education; therefore, induction programmes that meet the needs of beginning teachers are essential components for schools to improve teacher retention and effectiveness (Smith & Ingersoll, 2004). Induction should include “a network of supports, people, and processes that are all focused on assuring that novices become effective in their work (Fulton, Yoon, and Lee, 2005). This paper presented findings from a study that was intended to uncover novices perceptions of the support structures of a comprehensive teacher induction programme. Although the novices under study did not view all the support structures as very beneficial, the value of each was justified by the work of several renowned authors. When asked if they had any recommendations for the improvement of the NEC Teacher Induction Programme, the general tone of the responses was represented by participants who stressed the need for a reduced teaching load during the induction year and release time to attend to induction activities. Toward this end, I encourage educators who are truly interested in novice teacher development, to experiment with and adapt the NEC Teacher Induction Programme in their schools. This programme can act as a model for enhancing the well-being and professional development of novice teachers. Its support structures can definitely help novices cope with the realities of the classroom and the demands of their new job.

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# Engaging Educators in Deweyan Inquiry as the Vehicle for Increasing Family Involvement in School and Home-Based Learning

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## ABSTRACT

The Holmes Group (1990) and the National Council for the Accreditation of Teacher Education (2001) raised expectations that there would be linkages between the Professional Development School (PDS) model of teacher education and learning outcomes. The present investigation is a partial test of a model that aims to document how the culture of inquiry in a PDS can produce changes in practice. We did not address student achievement directly, but changed practices known to be associated with achievement: namely family involvement (Lopez & Caspe, 2014). Using qualitative data from teachers' inquiry group sessions, and quantitative data from both family participation in school-based events and teachers' action research projects, we demonstrated the power of inquiry in a PDS to take advantage of a Deweyan conflict to make it possible for teachers to: (1) arrive at a workable definition of family involvement, (2) respect value differences, and (3) form positive relationships with families in support of children's learning.

**Keywords:** family involvement, professional development schools

## INTRODUCTION

The Holmes Group (1990), the National Council for the Accreditation of Teacher Education (2001) and the Council for the Accreditation of Educator Preparation (CAEP) (2015) raised expectations that there would be linkages between the Professional Development School (PDS) model of teacher education and learning outcomes. Evidence strongly suggests that promise has yet to be fulfilled. Rejecting the possibility that PDS is an ineffective intervention for increasing achievement, we focused on the practices within the PDS and constructed a model (Tirrell-Corbin & Cooper, 2014) that would take us from the PDS context to measurable changes in school outcomes. Building on Holmes Group Principle #5 which emphasizes inquiry, our model locates inquiry within the PDS and connects it to improved practices. Extending Crockett's (2002) and King's (2002) applications of Deweyan conflict in the context of professional development, we asserted the need for a sustained and recursive process, embedded in critical inquiry.

In addition to CAEP expectations around school-university partnerships, the National Association for the Education of Young Children (2011) and the Council for Exceptional Children (2012) require teacher education programs to prepare candidates to collaboratively engage families in the development and learning of their children. In response to the aforementioned CAEP, NAEYC and CEC expectations, we tested our model in two different schools within two different school systems by providing occasions for

practicing professionals to challenge assumptions and rely on data to address the problem of low family involvement in their children's education. The first test of the model showed that sustained professional development around family engagement changed the culture of the school as a result of the Deweyan Inquiry process (Tirrell-Corbin & Cooper, 2014). Moreover, we found that once the Deweyan (1916 & 1933) inquiry model had demonstrated its effectiveness in not only producing improved practices but also in establishing a culture of trust among colleagues, sensitive topics could be explored and confronted.

The present investigation is a second test of our model that aimed to document how establishing new PDS partnerships concurrent with establishing a new teacher education program in early childhood/early childhood special education would establish a culture of inquiry. We did not address student achievement directly, but changed practices known to be associated with achievement: namely family involvement (Lopez & Caspe, 2014). Using qualitative data from teachers' inquiry group sessions, and quantitative data from family participation in school-based events and teachers' action research projects, we demonstrated the power of inquiry in a PDS to take advantage of a Deweyan conflict to make it possible for teachers to:

1. arrive at a workable definition of family involvement,
2. respect value differences, and
3. form positive relationships with families in support of children's learning.

## THEORETICAL FRAMEWORK AND PURPOSE

Professional Development Schools (PDS) were intended to be a comprehensive approach to total-school reform targeted toward the effects of poverty and educational disadvantage (Holmes Group, 1990; National Council for the Accreditation of Teacher Education, 2001). Henry Holmes served as Dean of Harvard's Graduate School of Education in the 1920's, and believed that teacher education (both pre-service and in-service) was critical to the success of the nation. In his honor, the Holmes Group identified 6 essential principles of PDSs:

- teaching and learning for understanding;
- creating a learning community;
- teaching and learning for understanding *for all children*;
- continuing learning by teachers, teacher educators, and administrators;
- thoughtful and sustained long-term inquiry into teaching and learning; and
- (6) inventing a new institution (Holmes Group, 1990).

Collectively, the six principles for PDSs were intended to effect broad, systemic changes in education — both in schools and in the universities and colleges with which they are in partnership. The scope of these changes includes:

- a. identifying standards-based performance assessments in teacher preparation,
- b. similarly, applying standards and assessment in ongoing professional development,
- c. integrating new-teacher preparation and ongoing professional development to achieve congruence and to alleviate tensions between theory and practice,

- d. reforming curriculum in schools and in universities, and
- e. enhancing research and inquiry processes as they aim to improve the profession's understanding of teaching and learning.

The existing literature is quite informative on matters of PDS philosophy and practices, and builds on the 1990 Holmes Group work, *Tomorrow's Schools*, in which the basic principles of a fully functioning PDS were proposed. However, attention in the literature to the effect of PDSs on student learning outcomes has been limited and inconclusive; perhaps because the scope of such an undertaking often impedes success, or as we will argue here, the PDS model has been widely interpreted and implemented without sufficient attention to or designs for raising achievement levels of students. As adopters of the model ourselves, and frustrated by our failure to find evidence of PDS-induced achievement gains, we have taken a step back to examine the *processes* and *contexts* found in PDSs and to test how they might be logically and empirically linked to measurable improvements in achievement.

With that as our purpose, we developed a fully articulated model that makes explicit the depth of critical inquiry necessary to produce changes in student achievement, and we twice tested a partial application of this model focused on practices known to be associated with student achievement: family involvement in a PDS. Our purpose gave rise to these research questions:

- To what extent is the Deweyan inquiry model capable of explaining how the culture of inquiry in a PDS can produce changes in practice?
- What are the observable markers of sustained, iterative, Deweyan inquiry in a PDS?
- Can an inquiry model of professional development be shown to increase and enhance one factor known to be associated with increased student achievement, i.e., family involvement in education?

### **Linking PDS Efforts to Student Achievement: The Role of Inquiry**

Darling-Hammond (2005) contends that the first decade of PDSs was marked by disparate implementation of PDS principles put forward by the Holmes group (1990) and the standards articulated by the National Council for the Accreditation of Teacher Education (2001), thereby making it impractical to determine the “effectiveness” of a PDS based on the broad definition of a school-university partnership. Her contention suggested to us that PDS effectiveness in increasing student achievement can only be determined through a careful examination of *cultural* changes in schools that have significant effects on pedagogical practices within the partnership.

One aspect of cultural change is the means through which professional staff development is carried out in a school (Bier et al., 2012; Theiss & Grigsby, 2010). Professional development in the form of *inquiry* presents an opportunity for expansion of knowledge and skill through a sustained exploration of issues, which is in sharp contrast to the model of a single workshop for teachers or presentation by outside experts. Further, inquiry is an inherently iterative process of reflection on evidence, planning, implementation, assessment and further reflection. It has the potential to capitalize on the collective expertise of school-based and university faculty in contrast to the top-down, authoritarian (“ivory tower”) expert model. In our model, PDSs provide an infrastructure for *boundary spanners* (Buxton, Carlone & Carlone, 2005), those who interact in both public school and university contexts with the goal of bridging differences (Many, Fisher, Ogletree & Taylor, 2012). Having facilitated inquiry groups in PDSs

for more than two decades and convinced of their effectiveness in changing school cultures, we went to the literature in search of empirical evidence to bolster our claim.

A careful reading of Crockett's (2002) application of a Deweyan framework for describing the inquiry process in professional development was a pivotal moment for us. For our purposes the major finding of her study of inquiring teachers was the author's assertion that:

1. conflict in the Deweyan sense (i.e., confrontation of an instructional dilemma) is a *good* thing to achieve in the context of professional development, and
2. "analyzing student *work* produced conflict among the four teachers in ways that other activities undertaken by the inquiry group in this study did not" (p. 617, emphasis added).

King (2002) also found impressive results when inquiry consisted of honest and in-depth examination of both teaching practices and school policies. King's study focused on inquiry grounded in critical questioning, which required teachers to question not only their own pedagogy but also that of their colleagues. As with Crockett (2002), King found that incongruence of beliefs among teachers facilitated higher-level thinking and an increased reliance on data and research to support beliefs or practices.

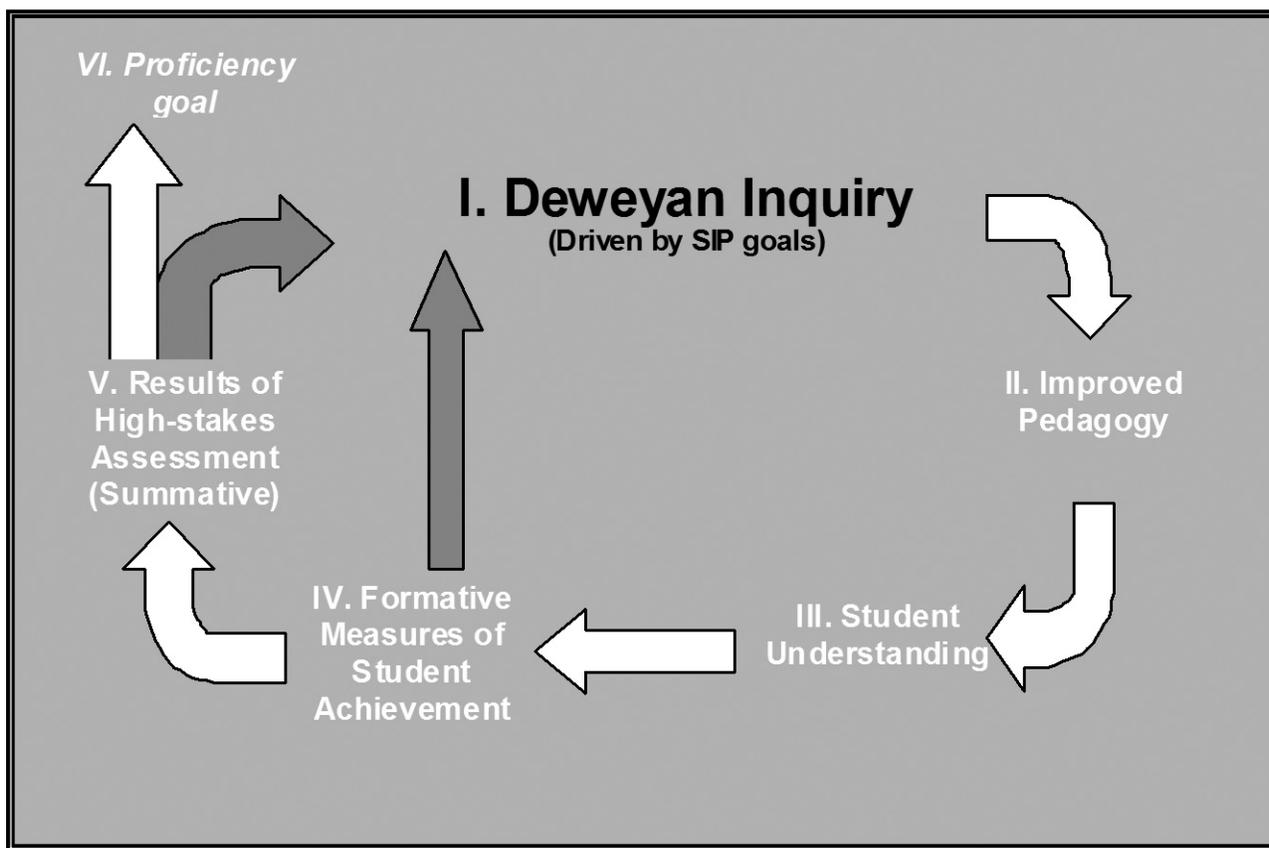
### Deweyan Inquiry Model

While PDSs provide a comprehensive approach to increasing student achievement, there is limited evidence of such increases (Cooper & Corbin, 2006; Grissom & Petrosko, 2005). Therefore, we contend that expecting a PDS to produce such results is unreasonable in the absence of a fully articulated process, linking the PDS structures and functions to more proximal causes of learning. Consequently, we believe that recursive and sustained inquiry, as illustrated in our Deweyan Inquiry Model (See Figure 1), is not only essential to pedagogical change, but is also made possible in a fully functioning PDS.

Building on Holmes Group Principle #5 which emphasizes inquiry, we constructed a conceptual model that locates inquiry within the PDS and connects it to improved practices, as identified in School Improvement Plans (SIP) that can facilitate school change. Borrowing from and extending Crockett's and King's applications of Deweyan (Dewey, 1916 & 1933) conflict in the context of professional development, we asserted the need for a sustained and recursive process, embedded in a culture of critical inquiry, which provided occasions for practicing professionals (1) to challenge their own and one another's assumptions, and (2) to rely on data to resolve pedagogical and other dilemmas of practice. Out of this recursive and sustained process are projected to come: *Improved Pedagogy*, *Student Understanding* and ultimately measurable increases in *Student Achievement*. These are entirely consistent with the Holmes PDS Principles that we outlined at the outset of our study.

Based on our reading of Crockett (2002) and King (2002) as well as our own direct experience in conducting collaborative PDS-based inquiry, we place sustained, recursive *Deweyan Inquiry* at the beginning of a sequence (Figure 1) leading to Student Understanding (Gardner, 1991). We are not the first to assert the importance of *sustained* inquiry (Evertson, 1987), but we place it in a recursive process that drives and is driven by the Deweyan conflicts described by Crockett (2002) and School Improvement Plans (SIP). *Improved Pedagogy* is expected to come as a consequence of a recursive and sustained inquiry process. This type of in-depth exploration of pedagogy is essential to pedagogical change and requires challenging one's own assumptions and practices as well as being subjected to the challenges of colleagues. From *Improved Pedagogy*, we expect to see measurable changes in *Student Understanding*

as evidenced in the results of ongoing, formative, authentic classroom assessments (Black & Wiliam, 2003; Brown, 1994; Cooper & Valli, 1996; Heritage, et al., 2009; Wiliam & Thompson, 2008). These assessments may reveal successful teaching and learning, in which we would expect similarly positive results to be in evidence on the annual *high-stakes assessments*. On the other hand, the classroom assessments may reveal deficiencies in student understanding, which in our model would result in cycling back to the point of Deweyan inquiry. The results of the annual high-stakes assessment will either demonstrate academic *goal attainment* (i.e., the meeting of proficiency goals as established by states) or these high-stakes assessments may reveal inadequate levels of proficiency in the aggregate or in disaggregated subgroups. Again, these negative results would trigger a return to the *Sustained and Recursive Inquiry* and the accompanying Deweyan conflicts.



**Figure 1.** Recursive and Sustained Deweyan Inquiry Model.

What follows is an illustrative case of how the model may work to explain and improve achievement. We will report results of an application of the Deweyan Inquiry Model focused on increasing student achievement through increased quantity and quality of family involvement in their children’s education. We begin with a brief review of the evidence supporting family involvement as a means of promoting achievement.

### **Family Involvement and Student Achievement**

For the purpose of this paper the terms *parent* and *family* are used interchangeably to reference significant adults in a child's life, such as parents, grandparents, guardians and other relatives. The positive relationship between family involvement in a child's education and student achievement is well documented in the literature (Bempechat & Shernoff, 2012; Desimone, 1999; Epstein, 2009; Garcia & Jensen, 2009; Gonzalez-DeHass, Willems & Holbein, 2005; Hiatt-Michael, 2001; Hoover-Dempsey & Whitaker, 2010; Koonce & Harper, 2005; Quiocho & Daoud, 2006). Henderson and Mapp's (2002) meta-analysis of 51 studies on family involvement in schools affirmed "a positive and convincing relationship between family involvement and benefits for students, including improved academic achievement. This relationship holds across families of all economic, racial/ethnic, and educational backgrounds..." (p. 24). As a result, practitioners and policymakers alike have identified parents as a solution to overcoming educational challenges, most notably in the area of academic achievement (U.S. Department of Education, 2004, 2012a). Nonetheless, most schools lack an institutionalized approach to integrating family involvement as a key component of educating America's children (Trotman, 2002) and, in many cases actively engage in practices which intentionally and unintentionally deter parents from becoming involved in their children's school experiences (De Gaetano, 2007; Delgado-Gaitan, 2004; Quiocho & Daoud, 2006).

Quiocho and Daoud (2006) found notable barriers to parent involvement for Latino and other immigrant families who reportedly wanted to be more involved but lacked the knowledge and skills necessary to navigate the school or the system. The most commonly articulated barrier to positive family-teacher relationships is poor or nonexistent communication (Koonce & Harper, Jr. 2005; Quiocho & Daoud, 2006) frequently leading to misperceptions on both parts regarding the level of interest in and commitment to the child's academic achievement. Conversely, high-performing schools placed a high value on parent involvement — encouraged through (a) a welcoming environment, stressing communication and personal contact and (b) structural accommodations, such as translators (Anderson & Minke, 2007; Deslandes & Bertrand, 2005; Schribner, Young & Pedroza, 1999; Walker, Ice, Hoover-Dempsey & Sandler, 2011). Furthermore, Koonce and Harper, Jr. (2005) found African-American mothers to have improved their parenting and advocacy skills when teachers and school administrators cultivated positive relationships.

The literature supports the importance of family involvement, yet evidence suggests both perceived and actual barriers significantly impede a family's ability to optimize the impact they have on their child's academic achievement and educational success. Although the aforementioned research focuses on school-based practices that prevent and/or enhance effective family involvement, the following section will address the roles of teacher education and professional development in preparing teachers to both promote parent involvement and interact with families in a culturally responsive manner.

### **Recursive and Sustained Inquiry: Focus on Family Involvement**

The involvement of families in the schools attended by their children occurs at the interface of at least two and typically many cultures: the school culture and the many cultures represented by the families. Bridging these cultural boundaries presents challenges to school personnel. Although American schools are increasingly diverse, those represented in the teaching profession remain largely white (U. S. Department of Education, 2012b), middle-class females whose knowledge of culturally responsive

practices are often restricted to their own educational experiences (Carlisle, Stanley & Kemple, 2005; Howard, 2005; Sleeter, 2001). White, middle-class definitions of parent involvement typically include volunteerism during the school day, participation in the Parent Teacher Association (PTA) and homework oversight (Carlisle, Stanley & Kemple, 2005). Although parent involvement may once have looked to members of the mainstream culture very much like the aforementioned definition, the changing demographic of American families clearly suggests such a model has limited application in contemporary society (Daniel-White, 2002; Carlisle, Stanley & Kemple, 2005; Jeynes, 2006; Koonce & Harper, Jr., 2005, Mapp, Johnson, Strickland & Meza, 2008), and perhaps never did. Moreover, Daniel-White (2002) contended that parent involvement opportunities designed to include all parents in their children's education actually took a *cultural deficit approach* to parenting through exclusion of and insensitivity to the cultural values of ethnic minority parents.

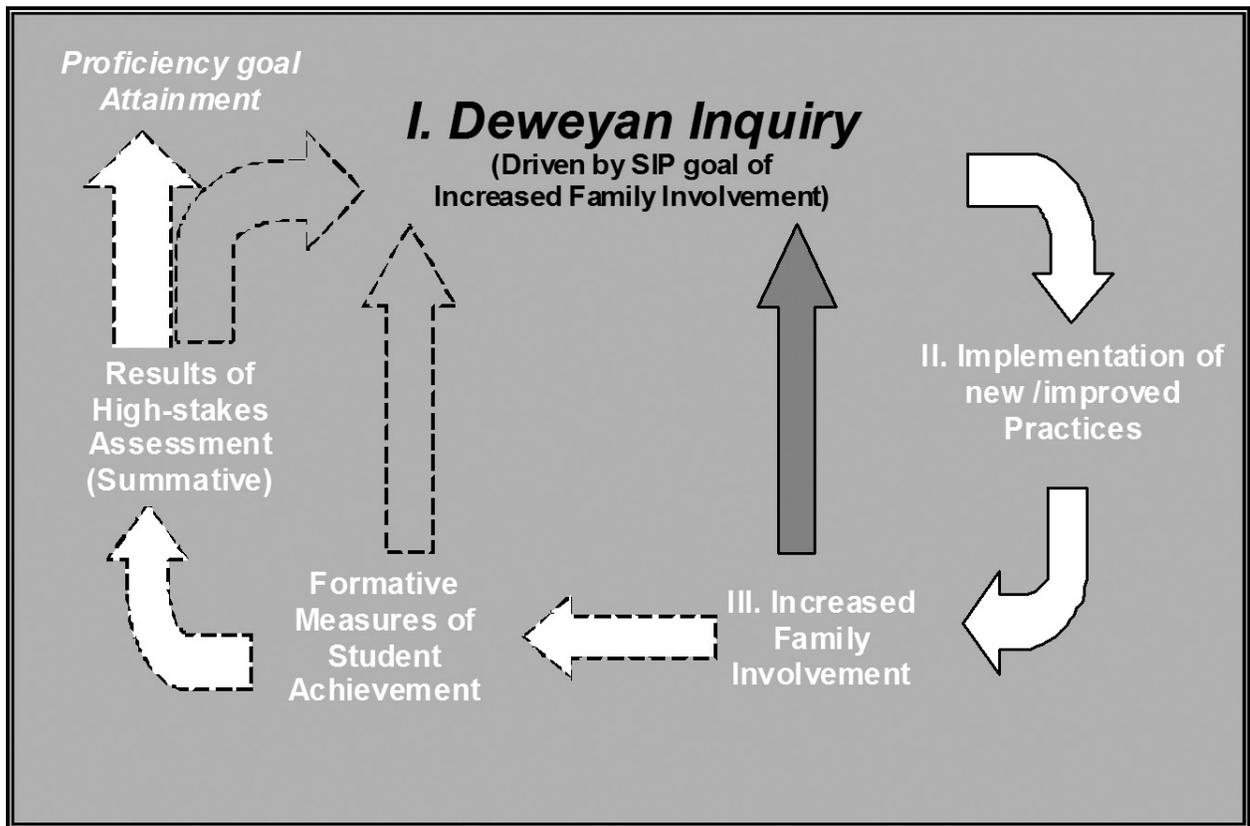
To compound the problem, teachers are often ill-prepared to engage parents in their children's education, primarily in culturally respectful and responsive ways. In fact, teacher education and staff development initiatives focused on outreach strategies responsive to family structure, culture and responsibilities only began in the early 2000s (Howard, 2005). In a national survey, Hiatt-Michael (2001) found only seven colleges of education addressed cultural, family outreach practices in any teacher education classes, while others offered only a cursory approach to these issues. De Gaetano (2007) contends that teachers will only be fully prepared to work collaboratively and respectfully with all families if school and higher education faculty engage pre-service and in-service teachers in challenging dialogue around issues of ethnicity, language and SES.

### Family Involvement in a PDS

Given that PDSs are a comprehensive approach to total school reform targeted toward the effects of poverty and educational disadvantage (Holmes Group, 1990), it is appropriate for practitioners to examine a high poverty PDS's culture of family involvement. It is equally as important for school personnel to analyze the inquiry process that has the potential to raise cultural issues to the level of consciousness where they could be mobilized for the sake of increased achievement in the school. In Figure 2, an adaptation of our earlier model, we expect to see (a) *Deweyan Inquiry* result in (b) *Improved Practices* (e.g., family outreach efforts) resulting in (c) increased *Family Involvement*. In contrast, implementation of improved practices that fail to increase *Family Involvement*, results in cycling back to the point of *Deweyan* conflict in the context of sustained *inquiry*. The results of either *formative or high-stakes assessments* will either demonstrate *academic attainment* or reveal inadequate levels of proficiency in the aggregate or in disaggregated subgroups. Again, these negative results would trigger a return to the *Sustained and Recursive Inquiry*. The methods and illustrative results reported below demonstrate how implementation of the partial model (indicated in Figure 2 with solid lines) produced changes in a PDS with a large minority and English Language Learner (ELL) population.

## METHODOLOGY

In the following section we present the methods used to test a portion of the model of PDS-embedded inquiry and its possible effects on the practices of the school. The present investigation does not carry through to the point of measurement of student achievement; rather we are attempting to establish that the initial stages of our model are valid with respect to the relationship of inquiry to improved practices.



**Figure 2.** Recursive and Sustained Deweyan Inquiry Model for Family Involvement.

### Setting and Participants

University Center for Early Childhood (UCEC), which is a pseudonym, is a public preschool in a large urban school district with a Free and Reduced-price Meals System (FARMS) rate of 67% (an indication of poverty). The school district is approximately 60% Black or African-American, 30% Hispanic/Latino, and 10% other. UCEC enrolls three and four-year-old children with developmental delays or disabilities and their typically developing peers, which includes Head Start classrooms. Their enrollment averages 500 students each year with notable increases in enrollment throughout the school year, as children in the community are diagnosed with disabilities.

Participants in the inquiry group were general and special education teachers, as well as the school principal. Participants on the Family Engagement Advisory Committee were teachers, the principal, a parent and a grandparent of UCEC students.

### Procedures

In the fall of 2014 the staff of UCEC embarked upon the process of becoming a professional development school partner with a newly approved, early childhood special education (ECSE) at a large public

university. The first author received a grant to support the strategic development of a Family Engagement Partnership between the university ECSE program and UCEC that:

- Commenced with data analysis (e.g., family participation data, school readiness data, family focused professional development data),
- Was grounded in a needs assessment,
- Consisted of a three-pronged approach to promoting family engagement (working with families, sustained professional development for teachers and paraprofessionals, integrating ECSE undergraduate students in the UCEC and the catchment area communities),
- Was evaluated at the end of year one, and
- Resulted in the expansion of the partnership to additional early childhood centers in the same school district.

At the center of the project was a Deweyan Inquiry Group facilitated by the first author (a self-described *boundary spanner*) and comprising early childhood special and general educators, as well as the principal. Although the broad focus was on family engagement, more specifically:

1. inquiry group topics were *teacher* initiated;
2. participation was voluntary;
3. inquiry groups met during the school day and
4. there was cross-grade level participation.
5. Inquiry group members were predominantly female, ethnically diverse and had a range of teaching experiences.

The inquiry group model is the primary vehicle for delivery of school-based professional development in this university's PDSs. Teachers and the administrator brought their experiences and questions to each session, were frequently asked to read an empirical article in advance, and were occasionally asked to bring or collect informal data (e.g., how many family members attended a classroom event, results of conversations with select parents about educational practices in their home country, etc.). The facilitator guided the discussion and focus of the group through infusion of research findings and probing questions. The facilitator provided structure, order and relevant research information, but did not control, direct, or dominate the group. Inquiry groups met monthly throughout the school year, for two hours per session, during the school day. At the end of each inquiry group meeting participants, to include the facilitator, were asked to commit to at least one thing that she/he would do over the next month to increase family engagement. The next meeting commenced with an update on those commitments.

## Data

This project provided us with both quantitative and qualitative data as the basis of examining the effect of the inquiry group on teacher and school-wide practices. Quantitative data were collected through family surveys, teacher surveys and parent sign-in sheets at all UCEC events. Family surveys (e.g., what types of support they needed, when they were able to participate in family events, etc.) were distributed by UCEC staff in paper copy during home visits, back to school meetings and in children's backpacks in both the fall of 2014 and the fall of 2015. Staff surveys (e.g., strategies to actively engage families,

the most effective means of communicating with families, etc.) were distributed by the principal in the spring of 2015. Parents are required to sign-in when they attend various events offered throughout the school year (e.g., Family Literacy Night, Fall and Spring Festivals, topical workshops such as those focused on behavior), which provided data on family participation, by classroom/teacher at each of the events. Qualitative data was collected through notes from inquiry and focus groups and the family engagement committee meetings. Notes were analyzed for themes, evidence of Deweyan conflict and change over time.

## RESULTS

Parent survey data (N=137) from the fall of 2014, administered prior to the inception of the inquiry group, indicated that 93.4% of families felt welcome in their child's school and classrooms and 89.8% would like to learn of more ways to be involved in their children's school. In addition, 91 (66%) parents expressed interest in parent workshops focused on understanding behavior and also on resources in the community. There was also interest in workshops focused on managing children's anger, developmental milestones, and language development through play. When asked what might prevent parents from participating in activities/workshops, 65 gave no response, 37 indicated a work commitment and 13 responded that childcare or other activities interfered with attendance. When asked what other assistance they needed, 107 left the answer blank and the other responses were fairly evenly distributed across basic needs (e.g., housing, food, clothing), children's academic development, speech/occupational therapy and employment skills.

In the fall of 2014 the first author also facilitated a focus group with parents to gain their perspective on family engagement at UCEC. The family focus group occurred before the commencement of the inquiry group process. Parents indicated a lack of knowledge of community services as well as knowledge of available activities for their children within the geographic boundaries of the school system. Several parents reported being unaware of where to turn when they thought something "wasn't right with their child", while others reported being judged when they sought support services. Furthermore, during an inquiry group at UCEC, teachers and specialists reported that they lacked knowledge of community resources (social services and agencies) available to the families with whom they work and would be unable to refer families if asked.

Family participation data showed the average number of families at events between September 2014 and June 2015 was 22, with the Saturday Fall Festival drawing 49 families and the "Temper Tantrum Workshop" drawing the lowest number with 11 families represented. The spring festival, which should have benefitted from a great deal of promotion from the administration and staff, as well as co-sponsorship by the university Family Engagement Project, only yielded the participation of 45 UCEC families.

Given that UCEC is a regional early childhood center, covering a large geographic area, its students flow into 66 different elementary schools in the district. However, the data did not indicate that families from neighborhoods closer to UCEC were more present at family events than those at a greater distance. Consequently, ease of access to UCEC for after-hours events may not be the barrier to participation.

Moreover, the staff survey indicated that the lack of food offerings at family events might be the greatest deterrent to participation, rather than the provision of transportation. It is important to note that almost all family events were held in the early evening, during the dinner hour, which made the lack of food offerings a particularly salient issue.

Additional analyses of family participation data showed that families of 3-year-olds attended more events than families of 4-year-olds and families with children in general education attended more events than families of children in special education. Moreover, the data showed that some classrooms/ teachers had more parents who attended events than others, suggesting the parent-teacher relationship or the efforts of the teacher to promote these events may be critical to successful family engagement.

A qualitative analysis (coding for themes, evidence conflict and change in participant responses over time) of minutes from the inquiry group allowed us to observe changes within individuals, as well as the group. We could also identify interpersonal exchanges/challenges (Deweyan Conflict) between colleagues. For example, when one teacher expressed concern about parental awareness of events the principal disagreed, saying upcoming events were well advertised. In another instance, one teacher articulated concerns about parents' ability to get to UCEC for events and another responded, "some parents use transportation as an excuse not to attend". We also noted collaborative and deliberate efforts to facilitate school change and evidence of newly implemented and improved practices. More specifically, several teachers offered support of the facilitator's suggestion to actively engage the religious community in the promotion of and transportation to family events at UCEC. Another participant spoke of the need to have culturally sensitive ways of engaging families at UCEC, which resulted in another teacher suggesting that "...knowing even a few conversational words of a family's language can help to make a connection with them". Those comments were met with a suggestion that all family events include a cultural aspect to show respect for the diversity of the school population.

### **The Deweyan Inquiry Process Reveals Conflict**

Inquiry participation required members (N=16) to explore their values and practices working with families and to question ingrained personal and school-wide policies and procedures. The first year of the inquiry group required participants to actively and reflectively challenge the beliefs and practices of themselves and their colleagues. Although all participants voluntarily joined the inquiry group to increase family involvement in their respective classrooms and school, all did not hold the same perceptions of family involvement, nor did they possess the same values. For example, some participants suggested parents were not motivated to engage in their child's education. Others said that some parents were difficult to work with and were resistant to support from the teachers; and still others said the parents were children themselves and did not know how to parent.

One of the earliest and most unexpected challenges was participants' belief that increasing parental engagement was an insurmountable task given the large geographic territory covered by UCEC. This assumption was challenged when the parent survey and attendance data failed to show transportation (geographic distance) as a barrier to participation. Assumptions were further challenged when the family participation data clearly showed some teachers having large numbers of families at events, whereas other teachers had low (or nonexistent) numbers of families present. Lastly, the fact that families of three-year-old children (in their first year at UCEC) attended more events than families of four-year-olds

suggested that families might choose not attend in year two because they may not have found the events valuable in year one.

The dialogue around differences between assumptions and evidence (survey and participation data) illustrates Deweyan conflict through the challenging of one's colleagues and the questioning of one's own assumptions, which we believe essential to a culture of critical inquiry. Only after the challenges were put forth (and supported with data) and discussed did the group move toward the more tangible goal of making family events more beneficial to parents. Throughout the process, the facilitator pushed participants to articulate and/or justify the purpose of suggested or recommended practices. It was during that process that members came to realize that many ingrained policies, procedures, and events existed due to erroneous assumptions that such practices were required, when in fact things were being done just because they had always been done that way.

There was evidence that inquiry group participation was less effective in producing change for some teachers than for others. More specifically, several participants would commit to implementing a change in practice at the end of a meeting but report that, for various reasons, they had not followed through on that commitment.

### **Conflicts Stimulate Implementation of New Practices**

After agreeing to focus on ensuring that family events were beneficial to parents, the group's next challenge was to define "beneficial." For example, as we found in our previous research (Tirrell-Corbin & Cooper, 2014) *Back to School Night* has a long history as a didactic experience for families who spend the vast majority of the evening being "talked at" and handed a wealth of written information, mostly in English (a second language for many parents in this school), while in a very large group setting.

In an effort to define "beneficial," inquiry participants discussed issues related to parental trust and comfort, the individuality of family involvement, cultural differences, cultural expectations, and the importance of establishing a positive parent-teacher relationship from the outset. The evolution of the dialogue resulted in the decision to redesign events with the ultimate goals of (1) building a sense of community and (2) establishing relationships between parents and teachers, as well as parents with parents. More specifically, events were advertised and promoted with a banner counting down the days to an event, with personal outreach to families from teachers and "robo calls" (automated/recorded calls) from the principal to all of the UCEC families, letting them know about family events. However, participation at the culminating event of the year, held on a Saturday, yielded a slightly lower rate of participation from families than the "kickoff" event in the fall (also on a Saturday).

### **Cycling Back to Deweyan Inquiry**

Given that the data showed no substantial increase in the number of families attending family engagement events over the course of the school year, the school principal and the facilitator, with the support of the inquiry group members, made a decision to broaden the focus on family engagement at UCEC. For the second year we established a Family Engagement Advisory Committee (FEAC) with the administrator, teachers, community representatives and three parents, all with an equal voice in the conversation. The FEAC met four times during the school year and was facilitated in the same way as the inquiry group in the previous year. FEAC reviewed data, and members were encouraged to both challenge practices

and assumptions as well as to propose solutions. In addition, grant funding allowed for the hiring of a Post Doctoral Associate to work onsite as the “Family Community Coordinator”, who assisted UCEC in expanding participation in family events/workshops.

In addition, the decision was made to cycle back to the Deweyan Inquiry process with a more narrow focus. In year two, the inquiry group consisted of five Family Engagement Fellows (four classroom teachers and one adapted physical education teacher), the Family Community Coordinator and the facilitator. The group met monthly, with the goal of using action research to increase the active engagement of the families of their students. Fellows collected data on their students’ parents’ participation in parent-teacher conferences and UCEC sponsored events, and they explored their classroom records to determine the type and frequency of communications they had with families. The Family Engagement Fellows generated two research questions: (1) How does an increase in positive parent-teacher interactions (i.e. phone calls, emails, notes and texts) lead to parents being more directly involved in their child’s learning and (2) Will an increase in positive teacher and parental interactions lead to an increase in parental participation in family events at their child’s school?

### **A Second Round of New Practices Leads to Increased Family Involvement**

In order to answer their research questions, the Fellows decided to develop family engagement activities linked to a curriculum objective, which families could engage in at home. Family members were given five days to complete each activity. In addition, the Fellows decided to engage in personal, positive communications with family members about their children. Lastly, the Fellows surveyed the parents to ascertain the family members’ perceptions of the teacher’s effort.

**Family Involvement Activities.** The Fellows created a family involvement activity for all of the children and families in their classrooms each week for a four-week period in the late spring. The activity was differentiated according to the ability/developmental level of the children and they went home with all the supplies necessary for completion. For example, families received the materials necessary to make homemade Play-doh™, and a birdfeeder from Cheerios™ (cereal in the form of the letter “o”). A home-based, “family” engagement activity was not something the Fellows had previously done with their students’ families. Instead they had sent home activities for the child to do as an extension of classroom learning. The response to the family engagement activities was very positive. In fact, some parents wrote notes back to the teachers expressing their appreciation for the activities while others emailed or texted photographs of the completed activity.

**Positive Communications.** During those same four weeks, the teachers engaged in personal, positive communications (only about things the child had done well or accomplished) via telephone, email, texts or handwritten notes with the ten families in their classrooms who had been least engaged (as determined through data analysis) throughout the academic year. Teachers communicated positive information with mothers, fathers and grandparents and tracked the type of communication, the relationship of the person with whom they communicated and took brief notes on the nature of their interaction.

Although a great deal of the discussions in the monthly inquiry group meetings focused on the importance of developing relationships with families, only two of the five Fellows reported sharing positive news with family members prior to the intervention. However, none had made a concerted effort to regularly communicate with family members about “good news”. Moreover, the one teacher who was not classroom based, the adapted physical education teacher, had had no communications with family

members about their children prior to the intervention. Given that the practice of reaching out to families with good, rather than negative, news was rare, the facilitator had prepared the Fellows for a mixed response to the initial communications. Below are the experiences of three Family Engagement Fellows:

Fellow A: When I first called the parents they were not very friendly. In some cases I knew they were not happy to be hearing from me. When I told one mom I was calling to share news about her son's day, she said "oh". After I finished she said, "is that it; you don't have anything bad to tell me?"

Fellow B: It was almost like I was talking to different people as the weeks went on. At first the parents were not very happy to hear from me and appeared to be in a hurry to get off the phone. As the weeks went on they greeted me very differently when they heard my voice. They went from not wanting to talk with me to being happy to hear from me.

Fellow C: *A lot of the parents did not even know who I was [the adapted physical education teacher] so they were very surprised that I was reaching out to them to share positive information on their child. It made me realize that I, too, am their child's teacher; even though I am a specialist, and I need to make more of an effort to get to know the families of my students.*

Parent Survey. After the four weeks of family engagement activities were completed and the positive communications ended, the Fellows designed and disseminated a survey to gain parents' perceptions on the teachers' effort to increase family involvement. They explained that they had been working with a university professor to improve the engagement and they wanted parent perceptions on how well the teachers had done. The survey response rate was 95% and the results were overwhelmingly positive.

| <b>Survey Question</b>   | <b>Agree</b> | <b>Disagree</b> | <b>Neutral</b> |
|--|--------------|-----------------|----------------|
| Communications from my child's teacher had a positive effect on the way I perceive the teacher.                              | 100%         | 0%              | 0%             |
| Communications from my child's teacher gave me better insight on what is taking place during the school day.                 | 100%         | 0%              | 0%             |
| Communications from my child's teacher have helped create a more open relationship with school staff.                        | 83.87%       | 0%              | 16.3%          |
| Communications from my child's teacher have strengthened my belief that my child is receiving a quality education.           | 93.55%       | 0%              | 6.45%          |
| Communications from my child's teacher increased the likelihood that our family would attend Family Literacy & Sports Night. | 63.33%       | 3.33%           | 33.33%         |

The survey also asked parents their perceptions about the family engagement activities. A surprising finding was that several parents who had not responded directly or indirectly to the family engagement activities, and whose children shared no information about participation, responded to the survey indicating they had participated in all activities and found them very beneficial. This finding led one

teacher to state, “I was under the assumption they hadn’t done anything with the activities, but now I know not to assume”.

Koonce & Harper, Jr. (2005) identified *communication* as the number one barrier to positive family-teacher relationships. However, in the words articulated by one Fellow and affirmed by others, “Parents came to trust us because they believed we saw the good in their children.” Although we were not able to obtain direct evidence of increased student achievement, Henderson and Mapp’s (2002) meta-analysis and the work of others (Bempechat & Shernoff, 2012; Desimone, 1999; Epstein, 2009; Garcia & Jensen, 2009; Gonzalez-DeHass, Willems, & Holbein, 2005; Hiatt-Michael, 2001; Hoover-Dempsey & Whitaker, 2010; Koonce & Harper, Jr. 2005; Quioco & Daoud, 2006) suggests the increased quantity and quality of family involvement opportunities had, at the least, the potential to improve student achievement.

### **The Ongoing Cycle of Deweyan Inquiry**

The intensive inquiry group process grounded in action research, in year two of this project yielded positive results for the children, families and the Fellows/teachers. As a result the Fellows will be presenting the results of the action research to the entire UCEC at the start of the school year, with the goal of encouraging their colleagues to make a commitment to reach out to families with positive news about the children in their classrooms. Moreover, the Fellows are now exploring additional ways to engage families. For example, one Fellow is planning to schedule family engagement events concurrent with the monthly food bank offered at the school. Two others are planning to do active storytelling for children while the family members gather food at the food bank.

In spite of the Fellow’s success, the percentage of families actively engaged in events and workshops at UCEC remained low. Therefore, the Family Engagement Advisory Committee has suggested the focus for next year’s inquiry project be on “reaching parents where they are”, which means in their communities. This is a particularly salient point, given that a large percentage of UCEC families have children with disabilities, some of which make transportation particularly challenging. Involving community members and families in the effort to actively engage more families in the school life of their children has broadened the reach of this effort, but there is still work to be done around family engagement at UCEC.

### **Summary of Findings**

Before discussing our results and offering conclusions, we take a moment to summarize our findings with respect to each of our research questions.

*To what extent is the Deweyan inquiry model capable of explaining how the culture of inquiry in a PDS can produce changes in practice?* The model proved useful in focusing our attention on the school’s intentional process of change over several semesters. Having identified the challenge of increasing family involvement, the staff made the choice to approach it using the inquiry group. One of the beauties of this approach to professional development is the commitment of *time* to explore the problem in depth before jumping to solutions. In this case, the members of the inquiry group took time to develop a common understanding of the term *family involvement* and then to explore the members’ individual and collective beliefs, experiences and practices. Bringing these beliefs, experiences and practices to the level of conscious consideration and overt expression gave rise to the inevitable and ultimately useful challenging of assumptions and clashing of views. Peering through the lens of our model of

Deweyan Inquiry we saw how conflict led to further common understandings, transformational learning by teachers, and eventually, strategies for change grounded in extended inquiry. What distinguishes these strategies for change is that they were (a) generated by the members themselves rather than imposed by either administrators or outside experts and (b) implemented with the energy and commitment that is made possible when professionals work through conflicts and *own* the issue. Our model also called attention to how evidence was used both to affirm the partial effectiveness of the solutions and at the same time to point the group toward the next set of challenges. The model depicts inquiry as an *iterative* process, and we were able to observe exactly that part of the cycle occurring as the inquiry group moved beyond their initial focus on the global concept of *family involvement* to the more specific strategies to develop relationships with families.

*What are the observable markers of sustained, iterative, Deweyan inquiry in a PDS?* Both our direct observations and the minutes of the inquiry group meetings provide ample evidence that the critical elements of the Deweyan inquiry model were enacted in this PDS. Most readily demonstrated is the importance of *sustained* inquiry. Four semesters of engaged and focused work by the staff and one university faculty member is documented in the minutes. As noted earlier, the group transitioned from family involvement to supporting teacher interactions with parents, to community-based outreach, but this shift in focus was neither arbitrary nor imposed, as is so often the case in other versions of professional development. Rather, the group itself made the transition as a natural outcome of the work they had initiated and the positive results they had achieved.

Iteration is a crucial component of any process that involves the collection and use of data for assessment of the effectiveness of actions. The assessment data are only of value when their analysis and interpretation are fed back into the loop, and when a new cycle of planning, implementation, and assessment is launched and repeated as many times as it takes to achieve the goal (or until the goal itself is affirmatively modified). We observed and reported several iterations of this cycling and re-cycling in the inquiry group.

Finally, can the inquiry we observed be fairly characterized as *Deweyan*? Previously, we reviewed the literature's guidance on interpreting and applying Dewey's definition, arguing that inquiry that (a) elicits conflict and confrontation of (b) an instructional dilemma or analysis of students' work, (c) is grounded in critical and reciprocal questioning of teachers' beliefs and practices, and (d) occasions higher-level and evidence-based thinking; satisfies Dewey's criteria and distinguishes Deweyan inquiry from variations now widely practiced in schools. We observed each of the elements (a) through (d) and described them above. One example will suffice. Recall our finding that the initial round of Deweyan inquiry was an essential step in the design and implementation of new practices intended to increase the level of family involvement. While the evidence at that point supported the assertion that practices were indeed changed, the staff members in the inquiry group recognized that limitations remained, and that their long-term success was not assured. Rather, their initial success pulled back the cover to reveal issues in some teachers' dispositions and preparation as well as a far-from-ideal culture of family involvement. Fortunately for the school, the culture of *inquiry* was established, and so the next step for the inquiry group was almost self-evident: *inquire again!*

*Can an inquiry model of professional development be shown to increase and enhance one factor known to be associated with increased student achievement, i.e., family involvement in education?* Our

findings from our earlier research (Tirrell-Corbin & Cooper, 2014) were a resounding “yes.” However, that study reported on a process lasting seven semesters over four academic years. Our work at UCEC shows great promise after two academic years, but has yet to demonstrate the resounding increase in family engagement we found previously. Nonetheless UCEC’s commitment, notably as a new PDS partner, to continued inquiry lends support to the benefits of the Deweyan inquiry model as a mechanism through which change can occur in the culture and dispositions of education professionals.

While we cannot yet assert a causal relationship from sustained, recursive inquiry on family involvement to gains in student achievement, we are close, having proposed a model that appears to move teachers from problem identification to workable solution, to implementation, evidence of success, and finally sustainable, systemic change. Further, we have initiated a line of inquiry that allows us to test the causal model.

## DISCUSSION

In its original conceptualization of PDS, the Holmes Group (1990) raised expectations that there would be direct linkages between this model of teacher education and learning outcomes. As we and others have pointed out, however, the promise has not been fulfilled. Rejecting the possibility that PDS is simply an ineffective intervention for increasing achievement, we chose instead to focus on the practices within the PDS and constructed a model that has the potential to take us from the PDS context to measurable changes in school outcomes. Building on Holmes Group Principle #5 which emphasizes inquiry, we constructed a conceptual model that locates inquiry within the PDS and connects it to improved practices that can facilitate school change. Borrowing from and extending Crockett’s (2002) and King’s (2002) applications of Deweyan conflict in the context of professional development, we asserted the need for a sustained and recursive process, embedded in a culture of critical inquiry, which provided occasions for practicing professionals to challenge their own and one another’s assumptions and to rely on data to resolve pedagogical and other dilemmas of practice. The present investigation is a partial test of the model in that it aimed to document how the culture of inquiry in a PDS can produce changes in practice.

In our second application of the model, we again chose not to address student achievement directly, but rather to change practices known to be associated with achievement: namely family involvement (Bempechat & Shernoff, 2012; Desimone, 1999; Epstein, 2009; Garcia & Jensen, 2009; Gonzalez-DeHass, Willems, & Holbein, 2005; Hiatt-Michael, 2001; Henderson & Mapp, 2002; Hoover-Dempsey & Whitaker, 2010; Koonce & Harper, Jr. 2005; Quioco & Daoud, 2006) in the PDS. Using minutes from inquiry group sessions, survey data and documentation of several instances of family involvement, we were able to demonstrate the power of inquiry to take advantage of a Deweyan conflict (Crockett, 2002; King, 2002) to make it possible for teachers to (1) arrive at a common definition of family involvement, (2) acknowledge and respect differences in values held by teachers and parents, and (3) see cultural difference not as a barrier to family involvement but something to embrace (Koonce & Harper, Jr. 2005; Quioco & Daoud, 2006). Once the group had moved beyond the Deweyan conflict to make the necessary changes in disposition, they were then able to move to changes in practice. Evaluative data on the results of this redesign and other changes in practice demonstrated the desired increases in all aspects of family involvement.

## CONCLUSION

We are not the first to suggest how the PDS context, or for that matter any of the variety of university-school partnership models that have been devised, can facilitate student learning. Bier et al. (2012) offered a useful conceptual framework that placed P-12 student learning at the heart (or in their words: the “sweet spot”) of the multi-dimensional collaboration among teachers, teacher candidates, and university faculty. Bier et al. focused their attention on concrete instances of student work that “fuses teacher learning processes with analysis of student learning” (p. 129). Our formulation differs from that of Bier et al. in that we have emphasized the importance of conflict in the Deweyan sense (Crockett, 2002) and critical questioning (King, 2002), as well as the role of formative assessment in the analysis of the student work samples.

The continued commitment of the principal and teachers at UCEC suggests that the culture of the school has evolved as a result of the Deweyan Inquiry process. Further, this perception is indicative that the school, as a PDS, embodied the Holmes Group (1990) principle that envisions a culture of inquiry. As evidence of this cultural evolution, the inquiry group has turned its attention to family engagement in the context of the family’s community. Once the Deweyan (1916 & 1933) inquiry model had demonstrated its effectiveness in not only producing improved practices, but also in establishing a culture of trust among colleagues, these creative approaches to family engagement could be explored and confronted. Professional development in the form of inquiry presented an opportunity for expansion of knowledge and skill through a sustained exploration of issues, which is in sharp contrast to the more prevalent model of a single workshop for teachers or presentation by outside experts. Further, inquiry is an inherently iterative process of reflection on evidence, planning, implementation, assessment and further reflection. It has the potential to capitalize on the collective expertise of school-based and university faculty in contrast to the top-down, authoritarian (“ivory tower”) expert model. Thus, our results have made explicit the depth of critical inquiry necessary to produce real and sustainable change in a PDS. Further work along this line of research will apply the fully articulated model both to the increases in student achievement as well as to other measurable changes in school outcomes that are expected of PDSs.

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# Principals as Literacy Leaders: Developing Teacher Capacities for Teaching Reading

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## ABSTRACT

The Principals as Literacy Leaders (PALL) program was initially funded by the Australian Commonwealth Government in 2009, and since that time more than 1,000 school leaders have undergone the program. Consisting of five one-day workshops spread over the school year and with school based activities between modules, the program was designed to recognise the critical role that school leaders play in improving student reading engagement, learning and achievement. Since that time, six separate pieces of research have been conducted on the pilot and subsequent programs delivered all over Australia. The current paper considers the data related to how the PALL program has supported school leaders to build teacher capacity for teaching reading. Three main outcomes were found, that school leaders improve teacher capacity through the use of teamwork, they do so by focusing on professional learning and by building the capacity of teachers to use evidence for prioritising and planning. The paper concludes that the PALL program has had a positive effect on how school leaders lead their teachers towards improvements in reading engagement and performance.

**Keywords:** school leadership, principals, reading improvement, teacher capacity, teamwork, professional learning, using evidence

## RECOGNITION

This paper has been generated from the data collected from the Principals as Literacy Leaders program by the Griffith Institute for Educational Research team: Professors Tony Townsend, Neil Dempster and Greer Johnson, with Research Associate Elizabeth Stevens, from GIER, together with Anne Bayetto from Finders University and Susan Lovett from the University of Canterbury. The research projects were variously supported by the Australian Primary Principals Association, the Tasmanian Department of Education and the Victorian Department of Education.

## BACKGROUND

The Principals as Literacy Leaders project (PALL) was initiated in 2008 by the Australian Primary Principals Association. The project was funded by the Australian Government as part of its Literacy and Numeracy Pilots in Low SES Communities Initiative. There were three significant factors in the PALL Pilot Project developers' decision to work with principals:

- the performance of Australian children in international literacy achievement tests;
- the growing body of research on links between leadership and learning;
- the outcomes of national and international research reviews of reading as a cornerstone of literacy.

For the first of these points, data from national and international surveys of student achievement in literacy pointed to a recurring problem in Australian schools (Thomson, De Bortoli, Nicholas, Hillman, & Buckley, 2011; National Assessment Program Literacy and Numeracy (NAPLAN), 2008, 2009, 2010). The overall outcome of these surveys was positive: the majority of Australian students achieved high standards, but a significant minority did not. In terms of the second point, evidence has continued to accrue that factors such as the quality of instruction (Hattie, 2009); the quality of school leadership (particularly sustainable leadership), (Leithwood, et al., 2006; Robinson, 2007; Seashore-Louis, Leithwood, Wahlstrom, & Anderson, 2010) and the impact of well-designed PD and support programs (Darling-Hammond, Chung Wei, Andree, Richardson, & Orphanos, 2009; Hord, 1997) leads to the likelihood that the quality of student learning and achievement can be improved, in a sustainable way. For the third point above, the argument is made that school leaders require more than leadership expertise; they need knowledge about literacy to be able to lead its schoolwide improvement. The underlying approach used to do this was to focus on the Big 6 reading framework of oral language, phonological skills, letter and sound knowledge, vocabulary, comprehension and fluency. A five module pilot professional learning program for principals, called Principals as Literacy Leaders (PALL) was developed and offered to 60 Government, Catholic, and Independent school principals, 15 each in South Australia, Western Australia, Queensland, and the Northern Territory took part in the initial training program in 2009 and subsequent research activity in 2010.

Central to the PALL philosophy were three elements:

- Developing a shared moral purpose in the school (in this instance it was the improvement of student learning and performance in reading).
- Developing a strong evidence base by collecting appropriate data related to reading achievement and engagement.
- Using disciplined dialogue to observe, interrogate and make decisions based on the collected data.

Surrounding these three core elements are five areas of school activity that need to be considered using data and dialogue to promote the shared moral purpose. These are:

- Appropriate professional development.
- A focus on improving the conditions for learning.
- Consideration of both curriculum and teaching practices.
- Developing relationships with families and the community to improve reading.
- Establishing opportunities in the school for leadership of the process to be shared.

As reported in previous research (Dempster, et al., 2012) PALL was made up of five day long modules spread over the course of the school year. The five modules were:

Module 1: A Leadership For Literacy Learning Blueprint

Module 2: What leaders need to know about learning to read

Module 3: Leading literacy data gathering and analysis

Module 4: Designing, implementing and monitoring literacy interventions

Module 5: Intervention evaluation and future planning

The modules aimed at providing school leaders with the resources they needed to develop an intervention plan for their school, focusing on reading, and using distributed forms of leadership, in ways that will improve student engagement and achievement in reading. Principals were given ongoing support from coaches and mentors called Literacy Achievement Advisors (LAAs). In the second year of the Pilot Project, research was conducted on the impact of this training — both on the leadership shown and the strategies undertaken to improve reading back in the schools, asking principals, teachers and LAAs their views about various issues.

Since that time, PALL has been offered in every subsequent year to more than 1,000 school leaders from South Australia, Western Australia, Victoria, Tasmania, Queensland and New South Wales, and also through a specialised program developed for Principals as Literacy Leaders in Indigenous Communities (PALLIC), which was offered in both the Northern Territory and outback Queensland. In all, there have been six research studies conducted, from the original pilot research through to case studies of individual schools in Tasmania and Victoria.

The current paper uses data from these six studies to consider the impact of school leaders undertaking the PALL program — on their ability to develop teacher capacity in both teaching practices and relations-building, with the ultimate aim of improving student engagement and learning in their schools.

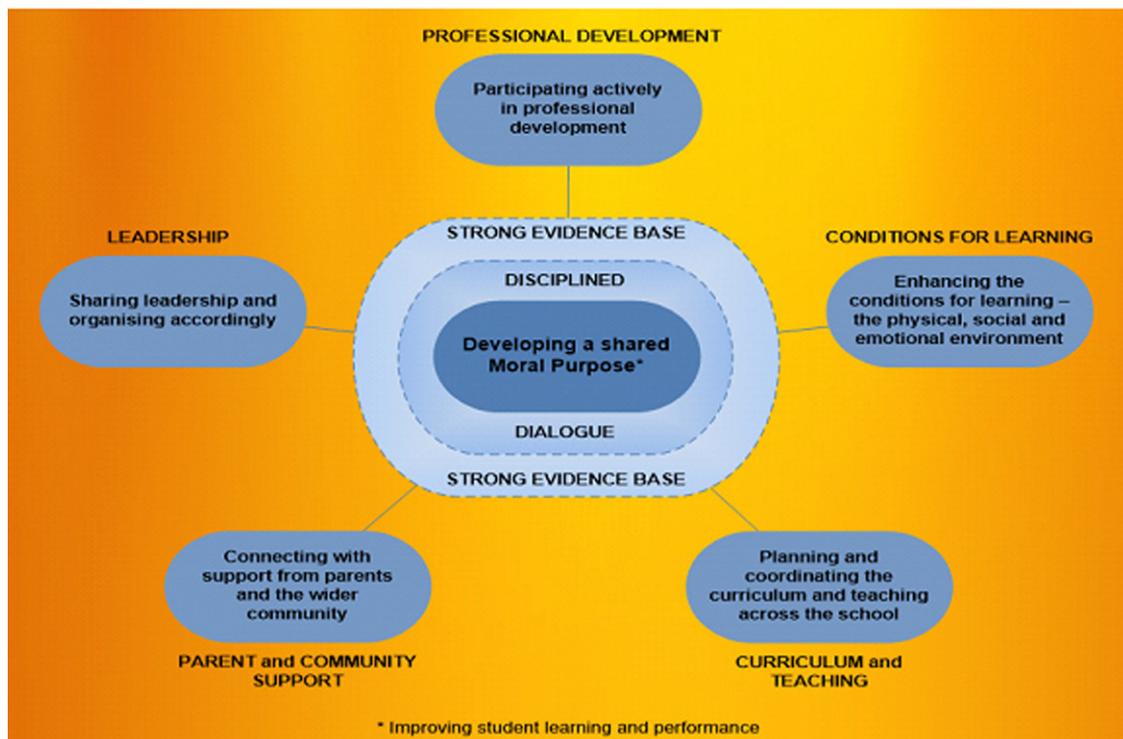


Figure 1. The Leading Literacy Learning Blueprint (Dempster et al., 2012).

## IMPROVING TEACHER CAPACITY THROUGH THE USE OF TEAMWORK

One of the highlights of the PALL research was the consistent reports that the additional knowledge about reading and how it was taught, together with a focus on the various aspects of the blueprint had encouraged far greater opportunities for leadership and teaching teams to focus on reading being developed and supported. Principals and teachers both reported far greater connection with each other over pedagogical issues related to learning to read than had previously been the case, with principals themselves reporting greater credibility and confidence when undertaking that educative leadership role.

This was evident right from the first pilot program research (Dempster et al., 2012 — in future called the pilot research — where comments such as *“the constant attention to the shared moral purpose has meant there is stronger staff collaboration”* and *“I have learnt even more about the power of teamwork”* demonstrated not only a sharing of the work but a realisation that this had a positive impact on the school learning environment. In the pilot research, comments by principals about changes made in the *“shared leadership”* dimension linked improvements to the collaborative development of a *“shared moral purpose”*, and supported increases in team approaches to literacy — particularly through teacher leadership in intervention action — and provided further evidence of the importance of *“shared leadership”* in sustaining change. One indicated that the school had established *“a set of team protocols”* and strategies for improving or maintaining *“team spirit and effectiveness.”* When asked about improvements in the learning environment of the school, principals in the pilot study highlighted encouraging teamwork amongst teachers and supporting collaborative work cultures amongst teachers; but the item attracting the greatest number of comments was *“sharing leadership systematically with teachers”*.

The research conducted by the Australian Primary Principals’ Association (APPA) on the program sponsored by the South Australian Department of Education and Children’s Services (DECS) (APPA, 2012 – in future called the South Australian research) also found ways in which the PALL program had impacted on the work of teams within the school. One principal indicated that: *“Disciplined dialogue [was] used in all teaching teams to create a shared purpose”* and to *“encourage teamwork amongst teachers”* was one of the reasons given by principals as a reason for changing their own practices to promote shared leadership. One principal indicated:

*“Once it was established that teachers are leaders too, then it was much easier to have a collaborative approach to being on the literacy improvement journey as a team — rather than an ‘I lead, you follow’ approach. Teachers have seemed to enjoy assuming responsibility for key areas.”*

The Principals as Literacy Leaders in Indigenous Communities research (Johnson et al., 2014 — in future called the PALLIC research) took teamwork to a new level, because here it became important to include indigenous leadership partners in the school communities as part of the team. This approach was based on modelling leadership ‘both ways’ — from the school to the community and the community to the school. Central to this process was the development of effective relations within indigenous communities and engaging indigenous ‘Leaders of Reading’ from local families and people in the wider community.

In the study of the impact of PALL on Tasmanian schools funded by the Tasmanian Department of Education (Dempster et al., 2014 — in future called the Tasmanian DOE research), collaborative teamwork was promoted by professional learning teams established or invigorated by PALL involvement. One principal responded: *“We have introduced a collaborative working pattern to the staff, and they have accepted and embraced a collective responsibility for all students’ learning”*; another indicated: *“The significant contribution to the success and gains we are beginning to see in our data and feedback is the impact of our weekly Collaborative Planning Triads facilitated by our Raising The Bar staff”* and a third said: *“Our staff now engage in collegial dialogue re literacy practices across the K-10 continuum, when a few years ago there was a clear obstacle based on ignorance, self-doubt and lack of shared responsibility for literacy.”* In one large school the principal indicated that NAPLAN results were important, and teachers were becoming more data conscious with the PALL position on distributed leadership being modelled with grade-based professional learning teams which examined and discussed student achievement data.

In the more detailed case study research conducted in five Tasmanian schools in the Launceston area (Townsend et al., 2015a — in future called the Tasmanian case study research), a range of strategies were used to promote shared leadership in the schools, one of which was more collaborative planning where teachers were timetabled for team planning every week or fortnight. One principal observed that teacher capacity was growing. *“Good and growing. They are very collegial and collaborative, some of the essentials that are needed for a team to work together are there.”* This was particularly the case in terms of having teams of teachers looking at student data: *“These are shared among the year level team, and drilled down into through professional learning teams (PLTs) – teachers take it in turns to bring along work from a tricky child they’d like to discuss.”* This increase in professional conversations about reading had other benefits as well. One school leader indicated: *“We’ve helped teachers to become more aware of what others in the school are doing; who’s good at what; facilitating teachers to sit in on another team’s planning”* and this in turn has helped them to develop longer term plans: *“The 1/2 team have got their whole year planned out around strategies.”* In most of the case study schools it was evident that teachers and the Principal worked together as a team, and where one person had expertise in a particular area they were allowed and encouraged to take the lead.

This was also evident in research conducted in four Victorian schools (Townsend et al., 2015b — in future called the Victorian case study research), where in a number of schools staff noted that there had been a dramatic increase in teachers’ teamwork and joint, explicit planning as well as the building of trust as teachers came to know each other better. Teachers were happy to deliver explicit teaching and give each other feedback. One teacher said: *“We actually share too, and it’s really again powerful when the whole staff are together when a Level 2 teacher talks about how they did a particular reading lesson”* and in the same school the principal reported that teachers in the Foundation/Grade 1 area were now *“working together as a team,”* rather than as distinct Foundation and Grade 1 teams. It also became evident that teamwork could happen in a number of different ways. In one school there were grade level and section level teams, as above, but in another school, teachers were timetabled to have joint planning meetings weekly and the PALL materials were an ongoing agenda item for these meetings. In addition there were Professional Learning Teams (PLTs) and the coordinators of the PLTs became a team as well. In meetings of coordinators of Professional Learning Teams (PLT) the Big 6 was one of their ongoing

agenda items, and summaries of these meetings were fed back into fortnightly leadership meetings. This multilevel approach to considering issues associated with reading and how PALL and the Big 6 might support improvements meant not only that everyone in the school was part of the process, but that a more detailed consideration of what should happen in classrooms was provided by those most connected with the work. The outcome of this approach was that school leaders reported that the PLT coordinators' leadership in driving this agenda had increased.

In another case study school, the principal identified both the strategy and some of the key ingredients in making the strategy work when she said: *"I think we've built a culture of whole-school approaches here, and it's very trusting that if we've made a decision this is the way we're going and there's an expectation that everybody will get involved."* This trusting atmosphere enables teamwork to go to the next level: *"There is now a comfort level in the team so that people can give any kind of reflective feedback about what they are doing and what they need."* In another Victorian case study school, the decision was made that a whole school approach was necessary. In this instance a *"strategic action team was established to look at improving teaching and learning."* This formed a school-wide professional learning community (PLC) where the work filtered down from the principals, where school leaders provided knowledge on how PLCs could work within both senior and junior teams in the school, which led to an expectation of what PLCs were meant to be doing, and this became a consistent team approach over time. *"In the past teachers planned more on their own; now it is a team effort."* Again the issue of trust was identified as being critical for good team work identified by there being a *"comfort level"* in the team, where teachers felt able to give reflective feedback about their own practice and learning needs.

A consistent response across all the studies was that professional learning teams and focused staff meetings had been important, enabling teachers to learn together and support each other. One principal noted that as a result of the increases to teachers' teamwork and joint, explicit planning, they were becoming far more comfortable with de-privatising their classroom practice, including delivering explicit teaching and giving each other feedback on their practice — resulting in a dramatic increase in teachers' teamwork and joint, explicit planning, as well as the building of trust as teachers came to know each other better. In doing so, the team approach allowed principals to encourage teachers to take more and more responsibility for what happened in the school. One outcome of this was that in many schools principals now asked teams what they saw as the priority with their group of students, rather than imposing a priority on them. In this way, the teams developed *"ownership"* and *"buy-in"* of the learning focus."

## IMPROVING TEACHER CAPACITY THROUGH PROFESSIONAL LEARNING

Research on student achievement identifies the critical role played by the individual teacher and their relationships with the students in their class. What PALL has provided is a way in which teachers can improve their capability, in terms of teaching practices, and also in terms of building relationships between themselves, students and the tasks involved in reading, by asking school leaders to encourage teachers to work together to improve what they can do. What has been found, in all of the pieces of research conducted on PALL, is that teachers have willingly worked with others in a team, as mentioned above, not only to improve what they do in terms of their day to day practices, but also to take responsibility for and leadership of the process of improvement when it comes to teaching reading. When discussing

the importance of teachers continuing to improve their pedagogy, Pearson (2007, p. 153) made the observation that: *“Teachers who aspire to professional prerogative must accept the responsibility for keeping their knowledge current, and they must be prepared to alter their practice on the basis of new knowledge — to accept the possibility that new knowledge trumps old practice, no matter how comfortably the old ways fit.”*

PALL provided principals with research about the teaching and learning of reading and it was continually highlighted that teachers required ongoing access to quality professional learning focused on the six major elements of reading, called the Big 6 (see details in Dempster et al., 2012). Some principals indicated that such research was an endorsement of what was already known at their school, while for others it was new information. Across the PALL research reports it was clear that the professional learning during and between the modules was significantly valued by principals, other members of leadership teams, and teachers. Principals testified that they felt more empowered to lead professional learning sessions in their schools as they could use the Powerpoints from the PALL modules (adapted as needed) and other support materials provided in the PALL folder. Some principals made a copy of the PALL materials for all of their teachers, others made them for members of their leadership and/or curriculum teams, while others considered some of the readings or other materials one at a time. One principal in the pilot research said: *“Because of my own learning in Module 2, in particular, and knowing what teachers needed to know, I have taken more leadership of professional learning — my confidence is higher. I am more of an instructional leader. I know more about literacy”* and it was highlighted in the South Australian research that open access to these materials increased principals’ confidence to talk about teaching and learning, *“Presenting PALL materials to staff built the principal’s credibility as an educator.”* Such was the usefulness of these materials that one principal from the Victorian case study research related, *“I could hear the penny drop with those teachers.”*

It became apparent that some teachers were challenged by the research, and its implications for practice and other feedback mentioned the appreciation of both graduate and longer-serving teachers in receiving up-to-date professional learning. One outcome of the more focused, collaborative, and whole school approach to professional learning was that: *“Presenting PALL materials to staff opened up conversations about learning at a classroom level”* (South Australian study) and rather than looking outward some schools moved to *“...now mainly internal [PL] with all involved, including all [of the] Administration Team.”* (Pilot study) Some principals recognised that they had to prioritise their attendance with teachers at professional learning sessions because, as a school leader in the Tasmanian case study said, *“... [it was] critical in gaining staff “buy-in” and honing skills”* and it was *“...evidence that they are taking a hands-on leadership role with their staff.”* Interestingly, one principal in the pilot study shared that *“... this is the first time I have been involved in everything that teachers have done. I know 200% more about literacy and can now supervise with authority.”* Reflections by some principals indicated the tensions they felt about the place of professional learning. Another pilot study principal said *“I was negative because I thought it took teachers away from the school. I now believe in professional learning more”*; while it was recognised in the South Australian study that upper primary teachers may not have stayed abreast of, or been provided with, information about how to support reading development, *“...there might be ‘missing loops’ in upper school teachers’ understanding of learning to read as kids get older.”* The Big 6 materials helped to focus professional learning. In one Victorian case study school: *“We’ve*

*built a folder of resources and the ...PLTs (Professional Learning Teams) will take that as professional reading in there and they can read and discuss those things as well, so we're sort of building that into our ongoing professional development and staff are really interested in that."*

After analysis of evidence and data, and professional conversations, some schools took a more measured approach by prioritising one of the Big 6 elements. The professional learning was focused and sustained until enough traction had been gained such that systematic, explicit, and effective instructional practices were the norm. The focus then moved (based on analysis of evidence and data) onto one of the other components. In indigenous schools there were common professional learning needs, but with the added challenge of access in remote areas. Confident principals led professional learning sessions and made good use of materials in the PALL folder as well as making connections between teachers and local partners. One PALLIC principal stated that: *"After involvement in professional development related to the Big 6, our staff are more confident about teaching these skills as part of their literacy programs"* and, *"...teachers are growing and learning together."* Significantly, *"PALLIC professional development has created awareness and has raised the profile of Indigenous staff at the school and increased their confidence in their work."* Some teachers from the Victorian case studies visited other schools to observe how the Big 6 was being taught and it appears this was a very successful process, *"...teachers visited another school with the Big 6 operating and then they were happy to make the changes."* Others were *"...visiting other schools, [in the] implementation phase... to seek feedback about what was working well."*

Another form of professional learning opportunity that arose was when teachers *"...[were] sharing the "best" lessons that they had developed with the whole staff"* (Victorian case study school) while in another case study school *"...teachers [were] sharing successes at staff meetings...what was working and what wasn't."* The helpfulness and collegiality of observing peers was highlighted by teachers, reiterating again the logic of looking inward first before seeking outsiders to offer professional learning. For one Tasmanian DOE study school: *"The model of professional learning through sharing practice, examining specific data, planning for teaching and reviewing outcomes is becoming a powerful tool to create consistency across our primary campus"*; while in one Victorian case study school *"...teams of teachers took part in classroom walkthroughs which had "deepened feedback and reflections on each other's practice."* This de-privatisation of practice occurred as it: *"Assisted in breaking down the isolation of the classroom for new graduates through opening up space for dialogue and discussion in a trusting atmosphere"*, and it *"...encouraged different level teachers to learn from each other."*

Discussion about what published programs to purchase was used as a way of seeking consistency across classrooms and/or between year levels, and was useful when principals or teachers have strong opinions about what approaches should be used. The research base allowed the leaders to challenge the way in which teachers had been planning and teaching, sometimes for many years. If teachers disagreed, they were invited to provide their own research that justified their old way of teaching. One Victorian case study principal said *"teachers are now saying that I know the things you are asking me to do are important to the school and the things I didn't know, I now know where to get things from."* However, in one Tasmanian case study school, the principal had not shared information with teachers about the PALL modules or folder resources — so when researchers went into this school there was a level of discomfort as inquiries were made about progress. Teachers in this school asked *"What is PALL?"* and *"What is the Big 6?"* This highlighted the pivotal role of principals as role models and leaders in the process of

changing teaching and learning practices in a school. If the principal keeps the knowledge to himself/herself, then change won't happen.

The influence and importance of engaging with ongoing, focused, professional learning about the Big 6 was exemplified in many schools. For example, in one Victorian case study school "...staff felt that previously there was expertise in literacy with some staff and not others, so expertise had expanded" and a principal in the South Australian study said: "Before PALL, our vision was a list of different people's views." While the intention was to encourage take-up of the Big 6, it did initially create tensions: "Staff realised they were unconsciously unskilled and needed to change their teaching patterns; they displayed a level of panic. The Big 6 provided a framework that helped teachers to overcome this panic. The leadership team used a staff survey later in the year to document where staff felt they were on the continuum from unconsciously unskilled (don't know what they don't know) through consciously unskilled (they now know what they don't know), consciously skilled (able to do things) to unconsciously skilled (where things come easily for them). They found that staff were at different places on the continuum and designed strategies to enable those who were skilled to support those less skilled." (Victorian case study principal).

Although professional learning occurred in many different ways over the course of the six studies, it was clear that it had become more refined over time. Professional learning included developing a common language for reading terms across the school, teachers working with each other, bringing in specialist support, using formal professional learning activities to develop proficiency and working across schools. However, what became clear is that PALL and the Big 6 provided both a base and a focus for this learning, and both teachers and leaders grew closer together because of it.

## IMPROVING TEACHER CAPACITY THROUGH THE USE OF EVIDENCE FOR PRIORITISING AND PLANNING

Key to everything related to the PALL program was the use of data to identify where the school was currently and to make decisions about the future. As indicated in the Leadership for Literacy Learning Blueprint above, collection, analysis and decisionmaking were all intimately connected to each other. As one Victorian case study principal indicated: "The school and the staff now work smarter and use the data to focus attention." This adjustment has come about through the various professional learning undertakings that schools have initiated in response to the PALL blueprint. Clearly, teacher capabilities in using data to identify issues that need to be considered has improved since PALL for the schools that undertook it. One South Australian study principal perhaps summed up this element best. "Data collection was more compliant (previously). Now we use it with a purpose." However, improvements in use of data and professional conversations identified that in all of the schools in all six studies, something needed to be done. One Victorian case study school provided a summary that might have been used in every school. "All staff agreed that the PALL project had made it clear that there were many areas where the children may have had gaps or needed to have intervention." However, identifying that there is a problem is only valuable if the next step is taken and something is done about it. In this sense, building teacher capacity to make decisions about what priorities exist and then planning to overcome the problems identified.

In the six research studies, it became clear that individual schools developed different plans to address the problems they faced. Some schools decided that they needed to improve the quality of teaching for all students before they could even consider intervening in a specific area and so all six Big 6 elements were considered simultaneously. This was a common characteristic in the Victorian study where one school said: *“Specific interventions were not appropriate when the fundamental teaching was not being done as well as would be liked”* and a second one indicated the need to *“...provide a viable guaranteed curriculum.”* Such an approach in a third Victorian school led to: *“Planning [for each of the Big 6] is now more focused and none of the areas are allowed to slide”*, which led to *“the use of the Big 6 to guide the reading curriculum is now embedded right across the school”* and *“everybody, including the specialist teachers, has the Big 6 in their planners. Even the science teachers have been teaching science vocabulary and pretesting four vocab words at the beginning of a unit for each year level and assessing them again at the end of the unit.”*

In other cases, however, schools focused on improving one or two of the elements as their priority. For example, in another Victorian case study school, *“...school leaders asked teams what they saw as the priority with their group of students, rather than imposing a priority on them. In this way the teams had ownership”* and *“buy-in of the learning focus.”* Another principal from the pilot research noted that: *“Previously [there was] no consistency — everyone was on their own adventure. Now we have a clear literacy policy in place that outlines elements of literacy across all year levels”* and one from a Victorian case study school indicated, *“Previously the staff worked hard but a lot of what the kids were doing was busy stuff, so it was necessary to work smarter and now the focus is that every minute of every day counts.”*

The importance of improving teachers planning skills was also evident in the PALLIC study, where one principal indicated, *“Before we had PALLIC every teacher was doing something different. Some teachers had a huge reading focus and other teachers had the bare minimum. Now that we’ve got PALLIC and the Big 6 and the expectations and the principal checks the planning, you know, it needs to be in our planning... I think that’s probably the best thing that’s happened for this school is that now we’re all on the same page.”*

The importance of documenting what they did in terms of planning for the Big 6 was also evident, for both planning and performance reviews. For instance, in one Victorian case study school the principal indicated *“that is starting to appear in term planners, and is now feeding into weekly plans, and when the mid-cycle review occurs, the principal will ask why the language is not being used in the weekly plans.”* However, some schools recognised that more work was still necessary to ensure that all students succeed. One Tasmanian DOE principal indicated *“We need to ensure that no students slip through the gaps. We need to make more time for collaborative planning and evaluation; timetabled, intentional, weekly case-management meetings.”*

This focus on collaborative team planning was a focus for many schools and some schools chose to broaden who was involved in joint planning sessions with one Victorian case study principal relating that: *“Team meetings, which consisted of teachers, a school leader, a teaching aide and the speech pathologist, focussed very specifically on lesson structures, pedagogical techniques, assessment of children and grouping.”* This consistent approach to planning was also starting to have an impact. In one Victorian case study school, a teacher responded: *“...our literacy planning can be quite effortless now on*

a Thursday morning. We know how to operate, we know what we need to get up there so we are covering everything”, and the PALL processes being used were seen as an appropriate way of considering other curriculum areas as well “...using the Big 6 as a way of describing other programs that they use.”

Clearly a great deal of time in developing teacher capacity has been spent on enabling teachers to make good decisions about the future based on the judgements they make about current performance — both students and their own — using an increasingly complex range of data as the starting point. What PALL has done is to provide school leaders with new resources to use and new strategies to implement to empower teachers both in their classroom and beyond, to improve their teaching practices in ways that will support students getting better at reading. In the Victorian and Tasmanian case study research, students were asked a series of questions about their feelings about reading. In all, 847 students were surveyed and asked questions such as “Do you enjoy reading?”, “Does your teacher talk to you about how to improve your reading?” and “Does your teacher teach you in interesting ways about reading?” On a three point scale the means scores were 2.5, 2.43 and 2.43 respectively, which indicates that students are positive about their reading and that teachers are focusing on ways for this to improve.

The evidence of six different research studies, over 5 years and in a number of different jurisdictions, suggests that the impact of the Principals as Literacy Leaders program has had a positive impact on what leaders do in schools to improve reading performance by improving teacher capabilities. There is evidence that PALL has improved collegiality and teamwork, that professional learning has become more focussed and that the Literacy Practices Guide has impacted on the learning environment and teacher capability in terms of the use of assessment and planning to improve student reading.

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## Symposia Abstracts

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### TEACHER QUALITY AND QUALITY ASSURANCE: CROSS-NATIONAL PERSPECTIVES

**Deborah Eldridge (Chair); Bea Noble-Rogers; Judith Scharager**

Criticism of teacher quality appears to be a global phenomenon, and the quality of teacher preparation is increasingly the scapegoat for such criticism. Quality assurance of teacher preparation, primarily centered on accreditation of teacher preparation programs, is also the focus of pressures for more accountability, stricter standards, and enhanced regulations and test-based, quantitative measures of effectiveness. The symposia proposes to foreground the issues in teacher education quality assurance from a variety of national perspectives and to seek audience feedback to formulate a set of global, proactive recommendations to the profession.

### WOLAKOTA PROJECT: MENTORING FOR RETENTION OF TEACHERS IN HIGH NEED SCHOOLS

**Scott Simpson, Sharla Steever | Technology & Innovation in Education (TIE), SD, USA**

The WoLakota Project, now in its third year, serves high needs schools in the State of South Dakota through a combination of cultural support and mentoring for new teachers. South Dakota's high need schools lose new teachers at an alarming rate, in some cases with a 100% turnover in a single year. Almost all of the new teachers served by WoLakota Project's unique mentoring model have remained in place and have settled into the communities they serve. That model includes a combination of face to face retreats and distance mentoring. The WoLakota Project is built upon Lakota cultural understandings written by Lakota Elders and on the Circle of Trust retreat approach developed by the Center for Courage and Renewal.

“WoLakota” is a Lakota word that implies balance and coming together. Mentors support new teachers with the embedding of the Oceti Sakowin Essential Understandings (OSEU) into practice. The OSEU help to address the achievement gap of American Indian students, and promote cultural understanding among students and teachers. Lakota Elder Dottie LeBeau states, “When we approach teaching with one worldview ... we create systems of failure in our schools.”

Participants will receive an overview of the work of the WoLakota Project's first three years, including data pertaining to new teacher growth in such areas as cultural competence, sense of community and desire to stay. Participants will also have a guided tour of the WoLakota website's Elder interviews ([www.wolakotaproject.org](http://www.wolakotaproject.org)) and will have opportunity for an open question and answer session.

## **CLOSING THE GAP ACROSS INTERNATIONAL CONTEXTS**

**David Mandzuk (Chair) – University of Manitoba, Canada**

**Dianne Cullen – Australian Catholic University, Australia**

**Otherine Neisler – Sultan Qaboos University, Oman**

**Maropeng Modiba, Sandra Stewart – University of Johannesburg, South Africa**

**Roman Svaricek – Masaryk University, Czech Republic**

Educational initiatives in faculties and schools of education have long been criticized — for continuing to advantage those already advantaged and disadvantaging those who start school and university already behind; and for a rigid curriculum and instructional methods which do not reflect state of the art educational research. This happens because of how programs are structured, which students have access to resources and opportunities, and what assumptions are underpinning the initiatives. This session will provide an international perspective on five initiatives in very different contexts that are trying to address some of these long-standing gaps and inequities. Five board members of ICET from different continents will share their knowledge and critically discuss the phenomenon of “closing the gap”.

## **PREPARING AND SUPPORTING EARLY STAGE TEACHERS TO ACHIEVE QUALITY TEACHERS FOR ALL BY 2030**

**James O’Meara – National Louis University; Deb Eldridge; Renee Middleton;**

**Sharla Steever – Technology & Innovation in Education, USA; Linda La Velle and**

**Tanya Ovenden Hope – The Cornwall College Group, UK; Kathy Ann Daniels**

In the Education 2030 era the UNESCO Institute for Statistics, or UIS, predicts we will need 27.3 million teachers – a shortage of crisis proportions. This symposium provides an overview of the contributions of various groups working to address this shortage at different stages of a teacher’s career continuum. The discussion will focus on reducing attrition rates, as UIS estimates indicate that attrition accounts for 87.5% (23.9 million) of the projected 2030 gap. Among those leaving the profession are early-stage teachers — newly-qualified or certified teachers who have completed their required pre-service training and are in their first years of service (Education International, 2015).

The discussant will begin by providing a global overview of the teacher shortage and the incidence of teacher attrition across all five UNESCO regions. The International Council on Education for Teaching (ICET) will discuss how the knowledge sharing activities of this symposium contribute to the work of the International Taskforce on Teachers for Education 2030.

## **TEACHER EMPOWERMENT: A DRIVING FORCE TO SUSTAINABLE SCHOOL EFFECTIVENESS IN OMAN**

**Mohamed E. Osman – Sultan Qaboos University, Sultanate of Oman**

**Thuwayba A. Al Barwani – Sultan Qaboos University, Sultanate of Oman**

**Khalid Al Saadi – Sultan Qaboos University, Sultanate of Oman**

**Zuhur Al Lawati – Ministry of Education, Sultanate of Oman**

In response to the “Vision for Oman’s Economy - Oman: 2020” which stressed the importance of achieving well-developed human resources by the year 2020, the Ministry of Education took serious steps to ensure that students will be adequately prepared for the requirements of higher and further education, the labor market, and modern life in general. However, the reform efforts and investment in a longer school day and longer school year, better curricula with more focus on Science and Math, more English, more technology and life skills, a more qualified teacher core, and a modern school infrastructure, did not produce an academically better student. This became evident in the underperformance of Omani students in the international assessment measures (e.g., MLA, TIMMS, and PIRL).

In light of the need for systemic educational reform to push the boundaries of students’ learning potential, this project aims to systemically activate and analyze the impact of all interrelated elements in the school system that promote the empowerment of student learning in the Sultanate of Oman. More specifically, it aims at furnishing the school system with a practical model for sustained improvement of students’ performance in five subject areas (science, math, language literacy, and information technology). It is hypothesized that any sustained improvement in the school system is a function of a set of interrelated driving forces or subsystems that collectively drive the overall performance of the school system, and impact students’ learning potential.

## **REDEFINING TEACHER EDUCATION FOR THE POST-2015 ERA: GLOBAL CHALLENGES AND BEST PRACTICES (#1)**

**Tony Townsend (Chair) – Griffith University, Australia**

**James O’Meara; David Mandzuk; Otherine Neisler, Thuwayba Al Barwani, Hussain Alkharusi,**

**David Clayton, Humaira Al Sulaimani, Mohammed Khan, Hamad Al-Yahmadi & Muna Al Kalbani;**

**Mohammed Osman; Reyes Quezada, Gary Kinsey & Angela Clark-Louque**

These two symposia address key issues related to teacher education from an international perspective. Across the world, the teaching profession is undergoing critical stages of reform. The last twenty-five years have been particularly important, as key players introduced significant initiatives that strongly influenced the shape of the education landscape. Over recent years, the need to redefine teacher professionalism and the recognition of the complexity of teacher’s work, as well as the challenges that they face in adapting to the new requirements of the profession have been highlighted, with implications for their education and professional development. In these symposia, the following questions will be addressed: How can

we best prepare teachers for 21st century schools? How can we assess the quality of teacher education and particularly of teacher preparation? How can we select the best teachers? How can we retain the best teachers? What are the models for training teachers that best suit the schools and classroom demands in the 21<sup>st</sup> century? What is the role of schools and universities?

## **REDEFINING TEACHER EDUCATION FOR THE POST-2015 ERA: GLOBAL CHALLENGES AND BEST PRACTICES (#2)**

**(See abstract for Symposium #1)**

**David Imig (Chair)**

**Maria Assunção Flores – University of Minho, Portugal**

**Masami Umezu – Naruto University of Education, Tokushima, Japan**

**Makoto Nagashima & Yumiko Ono – Naruto University of Education, Tokushima, Japan**

**Maropeng Modiba; Thuwayba Al-Barwani – University of Johannesburg, South Africa**

**Shirley Van Nuland – Faculty of Education, UOIT, Canada**

**Martha Prata Linhares – Federal University of Triangulo Mineiro, Brazil**

## **TEACHER PREPARATION FOR BUILDING SUSTAINABLE SOCIETIES**

**Sebrina Palmer (Chair) – University of the West Indies, Mona**

**Moreen Carvan – Marian University**

**Melanie Agnew – University of Wisconsin**

**Marlene Bartley – Shortwood Teachers College**

The recruitment of teachers from Jamaica by countries such as the United Kingdom and Canada for permanent placement and temporary contract English language teaching programmes in countries such as Columbia, Japan, Brazil and France is symptomatic of the growing global mobility of teachers as a professional workforce. This, joined with the increasing number of expatriate families working and living in the island and the current ‘migrant crisis’ faced by Syrian refugees and the countries in which they will seek to establish sustainable societies, pose the underlying challenge even more directly: What role does a globally mobile professional teaching workforce play in generating a sustainable global, inter-culturally competent and multicultural society?

The original question of whether Jamaican teachers are satisfactorily prepared to transition to new, often culturally diverse educational environments has given way to the more profound challenge of imagining mobility as a permanent characteristic of education. This question is especially relevant amidst the Ministry of Education’s move to reduce the number of teachers being hired in public schools in a bid to satisfy the International Monetary Fund’s stipulation to keep the ratio of public servants at 9% of the GDP. Therefore, on one hand, teachers are encouraged to seek employment outside of the classroom and on the other hand, participate in recruitment programmes to teach abroad. However, the education

system and students of recruiting countries often differ from the country of origin. Hence, while the formal educational preparation may satisfy the general requirement for teaching in a foreign country, does the inter-cultural preparation of Jamaican teachers satisfactorily prepare them for the multiplicity of cultural differences and adjustment factors they may experience?

The format of the symposium will be scenario planning. The presenters will look at the current teacher-training curricula, which will be juxtaposed with the inter-cultural skills required for teaching abroad and a conceptual framework of what teacher-training education training should resemble. The anticipated outcome is a call for other research initiatives in the area of teacher-training, within the context of internationalisation of higher education.

## Poster Sessions

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### DEVELOPMENTALLY APPROPRIATE PRACTICE IN THE GRADUATE CLASSROOM

**Sheron C. Burns | University of the West Indies, Cave Hill**

During Semester I of the 2015/2016 academic year, 18 Education graduate students were exposed to a four week module on current issues in education entitled Building Strong Learning Foundations — Doing it right from the start: Quality Early Childhood Education. These trained teachers, who teach from early childhood to the tertiary level, were introduced to early childhood education using developmentally appropriate practices recommended for use within the early years setting by NAEYC (2009). How did these graduate students experience learning about early childhood care and education through the use of strategies recommended for the early childhood setting?

### TOWARDS A SOCIAL ACCOUNTABILITY CURRICULUM FRAMEWORK FOR PARENTS

**Marcia Hextall | University of the West Indies, Mona**

Social accountability is the action taken by citizens to hold public officials and service providers to account for the provision of quality public welfare. Education is considered one such public good. Implicit in social accountability goals is that these provisions should include all relevant stakeholders and be delivered in an effective and efficient manner. The purpose of this study is to propose a curriculum framework for preparing the parents of students in Jamaican high schools to play an active role in ensuring social accountability in the public education system. The study will be guided by the following research questions: What are the existing policies and practices which promote social accountability in the public education system? What are the common themes in the literature and previous research on preparing users of public services for social accountability roles? How can the proposed framework serve as a guide for developing courses that prepare parents to play an active role in social accountability in education? How do leaders of parent associations perceive their role in social accountability? Data will be collected by means of a review of policy and programme documents and semi-structured interviews with leaders of high school parent associations. These documents and interviews will be analysed, and recommendations and proposals categorized for inclusion in the proposed curriculum framework. The framework is intended to guide the review and development of programmes to prepare parents for roles associated with improving governance and ensuring high quality service delivery in the public education sector. The findings are expected to reveal the interpretation of social accountability and the need for a social accountability curriculum as expressed by parents.

## **THE PROFESSIONAL DEVELOPMENT OF PRIMARY SCHOOL TEACHERS PILOT IN JAMAICA**

**Yewande Lewis-Fokum, Michele Kennedy, Silvia Kouwenberg | Department of Language,  
Linguistics & Philosophy and the School of Education — University of the West Indies, Mona**

In October–November 2015, a course for the Professional Development of Primary School Teachers (PDPST) was piloted at UWI through a series of seven all-day workshops for grades 3 and 4 primary school teachers. This initiative was a collaborative effort funded by the Ministry of Education, and developed in response to the low performance in English throughout the public school system in Jamaica. It is intended to improve teachers' ability to facilitate their students' proficiency development in English by promoting teacher language awareness, and by exploring methods of Language Arts instruction suited to the linguistic environment of teachers' classrooms.

Data on the overall evaluation of the PDPST was based on teacher evaluations of the course, and observation of teachers following the workshops. Twenty-eight of approximately 30 teachers rated the course as 'good' or 'excellent' in the final evaluation. Teachers' understanding of and attitudes towards the complementary roles of Jamaican Creole and Jamaican English also changed positively, and their classroom practices indicated a willingness to experiment with some of the teaching strategies from the workshops. However, teachers' meta-linguistic skills, although improved, remained limited, and strategies on our part to ensure direct impact of the course on teachers' classroom practice were found to be lacking. These challenges are to be addressed, while we have further dialogue with the Ministry of Education regarding the possibility of offering the course nationally.

## **ADVANCING PRIMARY SCHOOL TEACHING FOR LEARNING ABOUT MINORITY ETHNIC GROUP MASS MIGRATION IN BRITAIN OVER THE AGES**

**Marlon Moncrieffe | University of Brighton, UK**

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