Development of Distance Training Packages on Physical Education Activities for Enhancing Attention Span and Communication Abilities of Children with Short Attention Span

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Abstract: *The purposes of this research were 1) to develop distance training packages for teacher and parent on physical education activities for enhancing attention span and communication abilities of children with short attention span, and 2) to study the effects of using the packages on a) participants' achievements in organizing activities, and b) participants' opinions on physical education activities. The participants consisted of 20 teachers and parents. Series of physical education activities, achievement test, and questionnaire served as the instrument. Median, range, mean, standard deviation and sign test were used for data analysis.*

The findings of the research are as follows:

1. The efficiency of packages was established at 80.00 / 82.13.

2. The results of using the packages were the posttest average scores of achievement of participant were higher than pretest. Mean score of the opinion on physical education activities was at the highest level.

Keywords: distance training packages, physical education activities, attention span, communication abilities

Introduction

At present, children with disabilities can be found in schools and society in general. The Ministry of Education of Thailand has adopted the mainstreaming policy, that is, arranging for educable level disabled children to be in the same classroom or in the same school with normal children. This policy is aimed at integrating disabled children into the general society so that they can be productive citizens and pursue normal life. These disabled children learning in the same classroom with normal children are considered as children with short attention span.

As children with short attention span require special cares to guide them to develop properly in accordance with their specific needs, they are different from normal children. Parents, guardians, teachers and those concerned need to gain correct knowledge and understanding on providing proper cares to enhance their development. Close cooperation between the home and the school is vital to ensure that the children receive the best possible care to guide them on their development.

Regarding problems of these children, a number of studies revealed that, apart from children in the attention deficit and hyperactivity disorder (ADHD) group who directly have problems with short attention span, some disabled children in other groups are likely to have problems with their short attention span or "short concentration span". Concentration is linking with attention. It is focused and continued interest in something or some matters. Concentration is essential for learning because there are close relationships among concentration, learning, and memory. If a person has concentration, he or she will be able to

learn well resulting in gaining good knowledge, understanding, and memory. Therefore, it is necessary that teachers and parents must cooperate in helping children develop attention span and good concentration.

By playing a game under game conditions, attention must be given to the dynamics of the game and not to the executional acts. Motor learning, as an area of concentrated interest, has produced a considerable store of information about how the learning of different motor skills takes place (Gensemer, 1991). Play gives children an opportunity to experiment with new and unusual behavior and has been linked with advances in cognitive, social, language and emotional development (Phillips & Beavan, 2012; Watson, 2012; Foret, 2012).

This study is based on the above-stated reasons to respond to the need to expand the knowledge body and research documents on organizing activities for enhancing attention span and communication abilities of children with short attention span. The researcher has decided to conduct this research and development study.

Research Objectives

Objectives of this research and development study are as follows:

1. To develop distance training packages for teacher and parent on physical education activities for enhancing attention span and communication abilities of children with short attention span.
2. To study the effects of using the packages on
   a) participants' achievements in organizing activities for enhancing attention span and communication abilities of children with short attention span;
   b) participants' opinions on physical education activities.

Related Literature

In this part, the researcher presents a summary about distance training package and physical education activities for children with short attention span. The first is a summary of distance training package and the second for physical education follows.

Distance Training Package

The distance training package involves training with what is taught via distance education. There were two sections to this part: training package and distance teaching. The training package is crafted with a multimedia system. The use of media materials, various methods and techniques are needed to enhance training efficiency. The training package consists of a statement for a lecturer or instructor and a statement for trainees. The trainer must define intended behavioral, structure of content, multimedia, including a test before and after training. Distance teaching was an instructional methods which emphasize on teaching and learning through media such as print, electronic, mechanical or other devices (Moore, 2007). The technologies used for distance education fall into two categories: 1) telecommunication technologies that connect instructors to distant learners and 2) classroom technologies that record, present, and display instructional information. Increasingly, video and computer based systems are being used (Simonson, 2012).

To develop a unit for training, the trainer or designer will design content and structure; most units usually contain at least these elements:

1. Titles are important as they help find bearings in the course; they also draw interest to the subject matter.

2. The introduction should contain statement about the objectives of the lesson. At the beginning of the unit the student will also need advice about what sort of things he will have to do as he works through it.
3. The advice about which books are required needs to be done subtly and to be geared to the learners.
4. Advice on the work to be done by the student.
5. If the course is designed to be used with other media (e.g. tapes, etc.), each unit will need references to these other elements.
6. There should be advice to the student about how to deal with problems that he can't solve by himself.
7. Often a course will include illustrations and diagrams (Pareek & Rao, 1981).

Principles of developing a series of training by means of distance education are as follows:

1. Learner and instructor were not in same place. Validity of multimedia were used to be media. Sometime, it is meeting time for learner and instructor.
2. Focused on self-study. Learners are given time to learn various self-designated; place and various activities by their convenient time or ready. Learners can learn by their own ability and availability.
3. Media used include print media, radio, television, satellite, audio tapes, computer media, etc., and a third person occasionally.
4. Preparing a systematic media before the start of the course. Or institution responsible Organizers will need to prepare the educational process. All media must be completed before production began teaching.
5. Teaching by specialist instructors or as a team. One of the subjects to produce content for broadcast in the form of various types of media.
6. Instruction is supplied to many learners. Education through distance learning can provide learners with a term of more unlimited time. It is available to students in all regions, both near and far throughout the country at the same time (Sungsri, 2003).

The process of planning and organizing for a distance education course is multifaceted and must occur well in advance of the scheduled instruction. To eliminate trial and error preparation, distance learning faculty should

1. Keep in mind that courses previously taught in traditional classrooms and need to be retooled.
2. In revising traditional classroom materials, consider ways to illustrate key concepts, or topics, using tables, figures, and other visual representations.
3. Plan activities that encourage interactivity at all the sites. Planning for interactivity reduces this problem and helps learners.
4. Plan activities that allow for student group work.
5. Be prepared in the event that technical problems occur (Simonson et al., 2012).

Physical education

Physical activity is bodily movement of any type and may include recreational, fitness and sport activities (National Association for Sport and Physical Education, 2014). Encouraging children to use physical activity, it must be appropriate to the child's body to grow strong and healthy mental development. If provided for adults, regular and consistent physical activity will help slow the deterioration of the body. It also may help increase attention, which is affecting the ability of academic learning as well (University of Illinois,

2009). Examples of physical education activities include games, indoor sport, outdoor sport, rhythmic activity, body conditioning, outdoor activity and adaptive activity.

Research Methodology

As a research and development study, the activities of this study are classified into two stages: the developmental stage and the experimental stage. The developmental stage is to fulfill the research objective 1, while the experimental stage is to fulfill the research objectives 2; details of each stage follow:

The Developmental Stage

As the objective of the developmental stage is to develop distance training packages for teachers and parents on physical education activities for enhancing attention span and communication abilities of children with short attention span, the stage comprised five development steps as shown in the chart below:

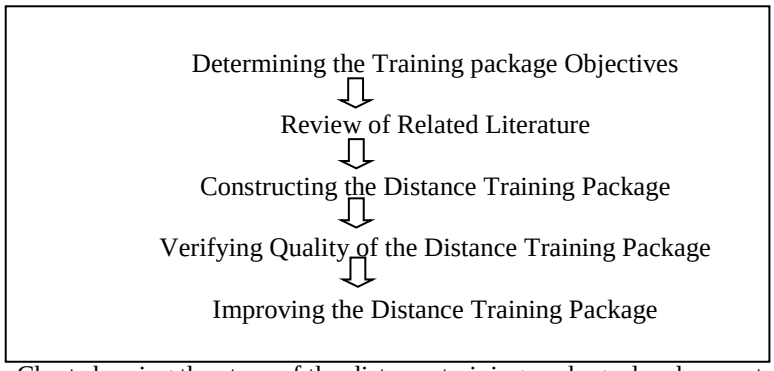

Chart showing the steps of the distance training package development

Details of each development step are described as follows:

1. Determining the training package objectives. The researcher studied how to determine the objectives and related contents of the distance training package, and then set the objectives of the training package as follows:

(1) Trainees are able to explain behaviors of children with short attention span.

(2) Trainees are able to explain the roles of teachers or parents in organizing physical education activities for children with short attention span.

(3) Trainees are able to explain guidelines for organizing activities to expand the attention span of children with short attention span.

2. Review of related literature. The researcher reviewed related literature including research studies on development of distance training packages, characteristics of children with short attention span, and organizing physical education activities for children with short attention span.

3. Constructing the distance training package. The researcher constructed the distance training package the features of which were the following: the training package title, structure, concepts, objectives, contents, and activities after studying the training package.

Contents of the training comprised two parts: Part 1: General Knowledge on children with short attention span; and Part 2: development of children's attention span.

In development of children's attention span, the researcher developed activities for expansion of the attention span of children. The activities development steps are as follows:

3.1 Review of literature and research studies relating to children with short attention span and organizing physical education activities for children with short attention span.

3.2 Designing activities to develop attention span of children with short attention span with the use of physical education activities.

4. Verifying quality of the distance training package. The following are activities that were undertaken to verify the developed distance training package:

4.1 Experts on special education were asked to evaluate the appropriateness of activities of the developed training package. The indices of concordance (IOC) derived from experts' judgment ranged from 0.60 – 1.00. Experts also provided recommendations for improvement of the training package which the researcher had taken for subsequent improvement of the package.

4.2 The developed distance training package was tried out in the single-subject tryout with two parents and one teacher; in the small group tryout with four parents and two teachers; and in the field tryout with 20 persons. Results of the three tryouts are shown in the Research Findings Section.

5. Improving the distance training package. Results and additional information obtained from the three tryouts were utilized to improve the distance training package.

The Experimental Stage

In the experimental stage, the developed distance training package was tested in order to fulfill research objective 2. Details of the experimental stage activities are described as follows:

The design of the experiment was that of the One Group Pretest-Posttest. The developed distance training package was tested with a sample of 20 persons comprising 10 teachers and 10 parents of children with short attention span.

The experimental steps were the following:

(1) Organizing the pre-experiment seminar involving subjects in the experimental sample and administering the pre-experiment evaluation instruments.

(2) Subjects in the sample studying the distance training package.

(3) Organizing the post-experiment seminar involving subjects in the experimental sample and administering the post-experiment evaluation instruments.

Data Collecting Instruments

The data collecting instruments employed in the experimental stage are the following:

1. An achievement test. The purpose of this test is to assess knowledge and understanding on children with short attention span and guidelines for organizing physical activities for enhancing attention span of children with short attention span. It is a 5-choice objective test with 20 items. Its validity is represented by IOC's ranging from .60 to 1.00; its difficulty indices range from .40 to .67; its discriminating indices ranged from .20 to .60; and its KR-20 reliability coefficient is .78.
2. A questionnaire to assess opinions toward the developed distance training package. The purpose of this questionnaire is to assess opinions of teachers and parents in the experimental sample toward the appropriateness of the distance training package. Its validity is represented by IOC's ranging from .60 to 1.00.

Data Collection

The data collection process in the experimental stage comprised the following activities:

1. Organizing the pre-experiment seminar involving subjects in the experimental sample. The achievement test on knowledge and understanding of the experimental subjects

on children with short attention span and organizing physical activities for children with short attention span. The testing time was 30 minutes.

2. Experimental subjects were given the distance training package to study by themselves in advance.

3. Experimental subjects studied the distance training package and tried out the activities described in the training package for 30 days.

4. Organizing a one-day seminar involving experimental subjects at the auditorium of Wat Tai School, Suan Luang District, Bangkok Metropolis. The seminar activities included the following:

(a) Lecturing to provide knowledge on organizing activities to enhance attention span of children with short attention span.

(b) Demonstration on organizing activities to enhance attention span of children with short attention span. Three following types of activities were demonstrated: indoor activities, outdoor activities, and rhythmic activities.

(c) Small group discussions to exchange experiences on tryout of the activities described in the training package.

(d) Presentation of discussion results by small group representatives. After the presentation, resource persons provided their comments and concluded the results of the seminar.

(e) Post-experiment assessment. The researcher and research coordinators administered the achievement test and the opinions assessment scale to the experimental subjects. The testing time covered 30 minutes.

(f) The experimental subjects completed the questionnaire on opinion toward the distance training package.

Data Analysis

Research data in both the developmental and experimental steps were analyzed. Statistics for data analysis were the following:

1. The statistics employed for quality verification of the developed distance training package was the E_1/E_2 efficiency index (E_1 = efficiency index of the process; E_2 = efficiency index of the product).

2. Statistics employed in analyzing research data for research objectives 2(a) were the mean, standard deviation, and sign test.

3. Statistics employed in analyzing research data for the research objective 2(b) were the mean and standard deviation of the rating scores. The rating means then were compared with the following criteria for opinion assessment:

4.50 – 5.00	means	the opinions are at the highest level
3.50 – 4.49	means	the opinions are at the high level
2.50 – 3.49	means	the opinions are at the moderate level
1.50 – 2.49	means	the opinions are at the low level
1.00 – 1.49	means	the opinions are at the lowest level

Research Findings

Research findings are presented in two parts: findings in the developmental stage and findings in the experimental stage, the details of which are as follows:

Part 1: Research Findings in the Developmental Stage

Research findings in the developmental stage comprise results of the distance training package development and results of quality verification of the developed training package.

1.1 Results of the Distance Training Package Development

The developed distance training package consists of the distance training documents and the manual for using the distance training package.

The distance training documents are composed of directions for study of the distance training package, content structure, concepts, objectives, and contents consisting of two parts:

Part 1: General Knowledge on children with short attention span. The contents of this part consist of the following topics: characteristics of children with short attention span; providing education for children with short attention span; the learning management model; the personalized educational plan; the personalized learning management plan; roles of parents and teachers in educating children with short attention span; and post-study activities for Part 1.

Part 2: Development of Attention Span. The contents of this part consist of the following topics: guidelines for organizing activities to develop attention span; physical education activities to develop attention span which composed of a) stretching muscles activity; b) game to sport; c) rhythmic activity; d) traditional game for children. The last one is post-study activities for Part 2.

The manual for using the distance training package was composed of explanations on the distance training package and its objectives; directions for using the distance training package; the training schedule; lecture documents; and evaluation of the training.

1.2 Results of Quality Verification of the Developed Training Package

The quality of the developed distance training package was verified via three levels of tryouts: single-subject tryout, small group tryout, and field tryout. Based on the tryout results, efficiency indices of the training package, in terms of E_1/E_2, were computed; also, suggestions for improvement of the package obtained from each tryout were taken for consideration of improvement of the package for subsequent tryouts. Tryout results in terms of E_1/E_2 indices are shown in Table 1 below:

Table 1: Results of Tryouts for Quality Verification of the Distance Training Package

Tryout Level	No. of Subjects	Tryout Results E_1/E_2
Single subject tryout	3	58.33/57.77
Small group tryout	6	69.17/78.86
Field tryout	20	80.00/82.13

As Table 1 shows, the E_1/E_2 indices of the distance training package increase steadily from 58.33/57.77 in the single subject tryout to 80.00/82.13 in the field tryout which surpass the set efficiency criterion of 80/80.

Part 2: Research findings in the Experimental Stage

In the experimental stage, the developed distance training package was experimented with 20 trainees consisting of 10 teachers and 10 parents. The objectives of the experiment were to study the effects of the distance training package on (1) trainees' knowledge and understanding on organizing activities for enhancing attention span of children with short attention span; (2) trainees' attitudes toward providing education for children with short attention span; and (3) trainees' opinions toward the developed distance training package.

Details of findings are as follows:

2.1 The Effects on Trainees' Knowledge and Understanding

The statistical procedure of t-test for dependent samples was employed to compare trainees' pre-experiment and post-experiment scores on knowledge and understanding of organizing activities for enhancing attention span of children with short attention span. Comparison result is shown in Table 2 below:

Table 2: Comparison Result of Trainees' Pre-Experiment and Post-Experiment Scores on Knowledge and Understanding of Organizing Activities

No	test		d	sign		t
	Pre	post		+	-	
1	8	10	2		-	
2	8	12	4		-	
3	7	11	4		-	
4	5	9	4		-	
5	8	10	2		-	
6	6	8	2		-	
7	6	10	4		-	
8	6	8	2		-	
9	9	12	3		-	
10	9	11	2		-	
11	8	11	3		-	.00*
12	5	9	4		-	
13	6	8	2		-	
14	10	12	2		-	
15	6	11	5		-	
16	8	12	4		-	
17	8	11	3		-	
18	7	11	4		-	
19	7	12	5		-	
20	6	10	4		-	
median	7.5	10	3.5		-	
range	5	4	3			

*significant at the .05 level

As Table 2 shows, the t value is significant at the .05 level indicating that trainees' post-experiment mean score is significantly higher than their pre-experiment counterpart.

2.2 The Effects on Trainees' Opinions toward the Distance Training Package

In determining trainees' opinions toward the distance training package, the mean and standard deviation of the rating for each aspect item of the developed distance training package were computed and then the rating mean for each aspect item was compared with the criteria for opinion assessment. Results of opinion assessment are shown in Table 3 below:

Table 3: Opinions of Trainees' toward the Distance Training Package

Aspect Items	Mean	SD	Interpretation
1. the necessity of physical activities for children with short attention span	4.68	0.58	At the highest level
2. the appropriateness of the activity to be organized	4.59	0.62	At the highest level
3. the appropriateness of the materials used in the activity	4.35	0.65	At the high level
4. clarity of language usage	4.04	0.78	At the high level
5. documentation is appropriate activities	4.35	0.86	At the high level
6. print format's font size is appropriate	3.75	0.34	At the high level
7. activities can be implemented	4.55	0.57	At the highest level

8. the appropriateness of the time for study series of activities and demonstration activities	4.15	0.65	At the high level
9.the suitability of the location for the activities	4.35	0.57	At the high level
10.expected benefits from physical education activities	4.53	0.50	At the highest level
Overall	4.33	0.61	At the high level

As Table 3 shows, trainees' opinions toward the overall appropriateness of the developed distance training package was at the high level. When each aspect of the package was considered, trainees had opinions at the highest level toward aspect numbers 1 and 2, namely, the necessity of physical activities for children with short attention span, and the appropriateness of the activity to be organized, with rating means of 4.68 and 4.59 with standard deviation of 0.58, 0.62, respectively. On the other hand, the rating mean for opinion toward print format's font size was appropriated was the lowest, being 3.75 with standard deviation of 0.34.

Conclusion

The developed distance training package had the efficiency index of 80.00/82.13 which composed of the distance training documents and the manual for using the distance training package. Components of the distance training documents were the training package title, directions for studying the training package, the content structure, concepts, objectives, contents, and post-study activities. Components of the training manual were explanations on the training package and objectives, directions for using the training package, the training schedule, lecture documents, and evaluation of the training.

Findings on experimentation with the developed distance training package:

1. The sample subjects' post-training knowledge and understanding on organizing physical education activities for enhancing attention span of children with short attention span were significantly higher than their pre-training counterparts.

2. The sample subjects had opinions that the developed distance training package was appropriate at the high level.

Discussion

The researcher found that participants could study and do post activities by themselves. They developed the knowledge and understood about physical activities and they knew that how they could implement to children with short attention span. The developed distance training package had the efficiency index of 80.00/82.13.

Because of 1) component of the package was perfect 2) appropriate process of development of distance training package, it was same for development of training package (Promyong, 1980; Sukpredee, 1984, Ratanaphan, 2010). Moreover, the contents of the training package was continuous and consistent hierarchical. There was basic of knowledge about children with short attention span in part 1 and document about physical activities and example for each activities in part 2. It is easy for parents or teachers to use this package to study and try to practice with their children by themselves. With this property of this package, it helped trainees acquire more knowledge, more experience and able to design physical education activities for their children with short attention span.

Suggestions

1. Trainers who use distance training package should study the manual set on distance training carefully and then study the document on distance training, Physical Education and understand the guidelines before applying to the event.
2. Trainers should have explored the basics of each child with short attention span and use this information to consider when using activities to suit each child.
3. Trainer should have contacted the parents or the teachers involved with children with short attention span to jointly plan the activity, along with observing the activities closely and regularly.

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