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Development of Distance Training Packages for Teachers on Providing for Learners with Special Needs

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ABSTRACT

The purposes of this research were to (1) survey the teacher's needs for knowledge on learning management for learners with special needs; (2) develop a distance training package on learning management for learners with special needs and verify its efficiency; (3) compare knowledge scores of teachers before and after using the distance training package; and (4) study teachers' opinions toward the distance training package. This was a research and development study. The research sample consisted of 86 teachers for the survey, and 39 teachers for verification of its efficiency and study of its effects in terms of teachers knowledge and opinions. The employed research instruments comprised (1) a questionnaire on the needs for knowledge on provision of education for learners with special needs (2) a distance training package on learning management for learners with special needs, (3) a learning achievement test, and (4) a questionnaire on opinions toward the distance training package. Data were analyzed using the E1/E2 efficiency index, percentage, mean, standard deviation, t-test, and content analysis. The findings of the research were as follows: (1) The teachers expressed their top priority needs for knowledge on learning management for learners with learning disability, mental retardation, and autism, followed by the needs for knowledge on special education research, and learning management for learners with physical and health impairment, respectively; (2) The distance training package was composed of the distance training document on learning management for learners with special needs and a manual for using the distance training package. The efficient was at 79.50/81.35; (3) The post-test mean score was significantly higher than their pre-test mean score at the .05 level; and (4) The trainees viewed that the distance training package was appropriate at the highest level. The result of this research had achieved the research objectives.

Keywords: Teacher, special education, distance training

Introduction

At present, education for learners with special needs has been provided in countries throughout the world as can be seen from enactment of laws on provision of education for learners with special needs in the United States, Europe, Australia, Asia, and Africa. Consequently, there is a need for teachers to have knowledge on learning management for learners with special needs at all educational levels including early childhood education, primary education, secondary education, and higher education. In Thailand, the provision of education for learners with special needs is a function of every school, that is, the school must provide education appropriately responsive to special needs of the learners, as specified in the principles and objectives of the National Education Act, B.E. 2542, and the National Education Act for Disabled Persons, B.E.

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2551, that the school must provide learner-centered education and provide education relevant to the potential of learners; also, there is the provision of scholarship for learners with special needs to study in higher education institutions until completion of the bachelor's degree level.

At the present, there are schools that provide education for learners with special needs in the form of mainstreaming classrooms. These schools are located in both the central (Bangkok) and provincial parts of Thailand. Learners with special needs are children who need special attention, special care and special education to enhance their appropriate development which is different from that of normal children. The parents, caregivers, teachers and concerned persons need to have knowledge and understanding on how to correctly and appropriately enhance learners' development both at home and in school. From a study of statistical data on learners with special needs, it was found that the number of this group of learners is increasing (Office of the Educational Council Secretariat, 2014 and 2015). Therefore, there is a need to develop teachers who are in charge of teaching learners with special needs in every school.

Development of in-service teachers to provide them with knowledge and skills can be accomplished in many ways, such as sending them to attend outside training programs, and inviting resource persons to train teachers in school. However, these ways require a large budget, together with the fact that teachers usually have different. Not only different intelligent, different learning style but also different free times for their self-development; therefore, they are not easily manageable and tend to be less effective. From the research studies' findings of Kla Thongkhao and others (2002), Koson Meekhun and others (2003), Arunee Horadal and others (2005), Phatcharee Pholyothin and others (2005), and Jareeluk Rattanaphan (2013), were found that the research sample groups that engage in self-development via the use of distance training packages can increase their knowledge and understanding the content of the topics that they had studied. Having teachers develop themselves via the use of distance training packages is, therefore, another alternative for equipping teachers with knowledge and understanding on provision of education for learners with special needs.

With realization of the importance of training teachers and concerned people on learning management for learners with special needs as mentioned above, the researcher has developed a training package on learning management for learners with special needs based on individual difference theory and distance training.

Research Objectives

1. To survey the teacher's needs for knowledge on learning management for learners with special needs;
2. To develop a distance training package on learning management for learners with special needs and to verify its efficiency;
3. To compare the pre-post training knowledge of teachers who used the distance training package on learning management for learners with special needs; and
4. To study opinions toward the distance training package of teachers who used the distance training package on learning management for learners with special needs.

Research Scope

This research is aimed at developing a distance training package for teachers in schools under Bangkok Metropolitan Administration that provide education for learners with special needs. The teachers are those who do not have educational qualification in special education but who have the needs for self-development to be equipped with

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knowledge and understanding on learning management at the basic education level for learners with special needs.

Research Hypotheses

1. The developed distance training package on learning management for learners with special needs is efficient based on the 80/80 efficiency criterion.
2. After using the distance training package, the mean score of the test on knowledge and understanding of learning management for learners with special needs of teachers who used the distance training package is higher than the mean score before the training package was used.

Literature Review

In this part, the researcher presents a summary about distance training and some of teaching method for learners with special needs.

Distance training.

Distance training was an instructional methods which emphasizes on teaching and learning through media such as print, electronic or other devices. (Moore, 2007) For distance training, there were two categories of technologies used for distance education: 1) telecommunication technologies 2) classroom technologies: Telecommunication technologies that connect instructors to distant learners and classroom technologies that record, present, and display instruction information. Video and computer based system are be used for distance training. (Simonson and others, 2012)

For developing a unit of training package, designers should design for the component of structure and content; each unit usually contains at least these elements: (Pareek and Rao, 1980).

1. The titles should be relevant to the subject matter.
2. The introduction should contain statements about the objectives of the lesson and what sort of things a learner will have to do as he works through it.
3. The advice about which books are required needs to be studied.
4. Advice on the work should be done by the students.
5. Each unit will be references if the course is designed to be used with other media.
6. There should be device about how to deal with problems that he cannot solve by himself.
7. There are illustrations and diagrams in the course.

Principles of developing a series of training by means of distance education were as follows: (Sumaree Sungsi, 2003)

1. Validity of multimedia were used as teaching media. Sometime, it is meeting time for learner and instructor.
2. Focused on self-study.
3. Media used include ; print media, radio, television, satellite, audio tapes, computer media, etc.,
4. Preparing a systematic media before the course starts.
5. Teaching by individual specialist instructors or as a team. One of the subject is to produce content for broadcast in the form of various types of media.

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6. Instruction is supplied to many learners. It can provide learners with a term of more unlimited time and available to learners in all regions at the same time.

Production process

In this research, the researcher took ten steps of training packages production which are as follows; (Chaiyong Brahmawong, 1994)

1. Content analyzing. The content will be designed into a course or integrated.
2. Setting credit and period of learning time.
3. Setting main units and subunits
4. Setting concept of each subunit
5. Setting objective of each unit and subunit
6. Setting activities
7. Setting the methods of measurement and evaluation
8. Setting media for each unit
9. Try out the training package
10. Trial run

Teaching method for learner with special needs

There are many methods of teaching for learners with special needs. Teachers must consider the needs, potentiality, and context of learners. The sample of teaching method for learners with special needs are as follows: direct instruction, strategy instruction, phonics based instruction, concrete representation, graphic representations, forward chaining & backward chaining. (Jareeluk Ratanaphan, 2011)

Research Methodology

Research Design

This research is a research and development study. The researcher developed and experimented the distance training package with one group of research sample under the one group pre-test and post-test design.

Population and Sample

The research population comprised 108 teachers in schools under Bangkok Metropolitan Administration that provide education for learners with special needs in six educational service areas. These teachers did not have educational qualifications in special education.

The research sample consisted of teachers in schools under Bangkok Metropolitan Administration who were in charge of providing education for learners with special needs. These teachers did not have educational qualifications in special education. The research sample consisted of the following groups:

The research sample for the survey on the needs for knowledge of providing special education consisted of 86 teachers in schools under Bangkok metropolitan Administration who were in charge of providing education for learners with special needs. They were obtained by stratified random sampling. The sample size was determined based on Krejcie and Morgan's Table of Sample Size.

The research sample for efficiency verification of the distance training package consisted of teachers randomly selected from the group of 86 teachers mentioned above. The researcher's selection procedure was as follows:

1. Random selection of the educational service area of Bangkok Metropolis by taking lots;

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2. Selection by taking lots of schools in the randomly selected educational service area obtained by the procedure in 1); and
3. Asking for the numbers and names of teachers responsible for providing education for learners with special needs in the schools randomly selected by the procedure in 2). As a result, three teachers, six teachers, and thirty teachers were randomly selected for individual try-out, small group try-out, and field try-out of the training package, respectively.

The research sample for experimenting with the distance training package consisted of 30 teachers randomly selected from 47 teachers in the group of 86 teachers employed in the survey study who volunteered to participate in the experiment. However, only 22 teachers participated until the completion of the experiment.

Variables under Study

The independent variable was the use of the distance training package on learning management for learners with special needs.

The dependent variables comprised of (1) knowledge and understanding on learning management for learners with special needs of teachers who used the training package; and (2) teachers' opinions toward the distance training package.

Research Instruments

The employed research instruments comprised of (1) a questionnaire on the needs for knowledge on provision of education for learners with special needs; (2) a distance training package on learning management for learners with special needs developed by the researcher; (3) a learning achievement test on knowledge and understanding of provision of education for learners with special needs, with difficulty indices ranging from 0.50 to 0.70, discriminating indices ranging from 0.33 to 0.60, and reliability coefficient (KR-20 formula) of 0.56; and (4) a questionnaire on teachers' opinions toward the distance training package.

Data Collection

The data collection process of this study comprised of three following stages:

The first stage. The survey of the teachers' needs for knowledge and understanding on provision of education for learners with special needs in order to obtain information for determination of the contents of the distance training package.

The second stage. The development of a distance training package on learning management for learners with special needs and verification of its efficiency.

The third stage. The study of the effects of the developed distance training package in terms of knowledge and understanding on provision of education for learners with special needs and teachers' opinions toward the distance training package.

Data Analysis

Data obtained from responses to the survey questionnaire on the needs for knowledge and understanding on provision of education for learners with special needs, data on development and efficiency verification of the distance training package, and data on teacher's opinions toward the distance training package were analyzed using the E_1/E_2 efficiency index, percentage, and mean.

Data on the effects of using the distance training package in terms of the teachers' knowledge and understanding on learning management of learners with special needs were analyzed using the percentage, mean, standard deviation, and t-test.

Research Results

Results of this research study can be concluded as follows:

1. Regarding survey results on teachers’ needs for knowledge concerning provision of education for learners with special needs, it was found that the knowledge that they need most was that on learning management for learners with learning disability, learners with mental retardation, and autistic learners, to be followed by that on research methodology in special education, and on learning management for learners with physical and health impairment, respectively. In addition, there were the needs on some other topics, but these needs are at lower levels.
2. Regarding results on development and efficiency verification of the distance training package on learning management for learners with special needs, the developed distance training package is composed of the distance training package document and the manual for using the distance training package, with specified details as follows:

The developed distance training package on learning management of learners with special needs was composed of the name of the training package, directions for studying the distance training package, structure of content, concepts, objectives, the training content which comprised of two parts, and activities at the end of each part of content. Details of the content were as follows: Part 1: Learning management for learners with special needs, which presents knowledge on learning management for learners with learning disability, for learners with mental retardation, for autistic learners, and for learners with physical and health impairment; and Part 2: Conducting research for development of learners with special needs, which presents knowledge on how to conduct research for development of learners with special needs. Each content part is followed by post-study activities.

The manual for using the distance training package is composed of description of the training package, objectives, directions for using the training package, time schedule for using the training package, and evaluation.

Results of efficiency verification of the training package showed that the training package was efficient at 79.50/81.35. The result research had achieved the first research objectives.

Table 1
Results of efficiency verification of the training package.

Part	1 st verification)n = 3) E ₁ /E ₂	2 nd verification)n = 6) E ₁ /E ₂	3 rd verification)n = 30) E ₁ /E ₂
1	62.66/71.00	80.00/81.00	80.00/82.20
2	60.66/69.00	78.00/79.00	79.00/80.50
Mean	61.66/70.00	79.00/80.00	79.50/81.35

Regarding results of experimenting with the distance training package, it was found that the post-experiment mean score of knowledge and understanding on learning management for learners with special needs of teachers sample was higher than their pre-experiment mean score at the .05 level of statistical significance as table2. It’s rejected null hypothesis and accept alternative hypothesis. This finding was accepted the second research hypothesis and achieved the second research objectives.

Table 2
Results of experimenting

Test	N	Mean	SD	T
Pretest	22	12.73	0.88	1.7954*
posttest	22	16.27	0.62	

* $p < .05$

Regarding results of the study of teachers' opinions toward the distance training package they used, it was found that the overall rating mean of their opinions was 4.83 which was at the highest level. When specific items of their opinions are considered, it is found that the item on the use of language being clear and easy to understand received the highest rating mean of 5.00; followed by that on the amount of content in each part, with the rating mean of 4.95; and those on the printing format, font size, illustrations, presented activities being practical and applicable, and the benefits gained from the presented content, each of which receiving the rating mean of 4.90; while the item receiving the lowest rating mean was that on appropriateness of the presented contents, which receives the rating mean of 4.54.

Discussion

The researcher presents her discussion in four following issues:

Regarding the findings of the survey on teachers' needs for knowledge concerning provision of education for learners with special needs, which showed that the knowledge that they need most was that on learning management for learners with learning disability, learners with mental retardation, and autistic learners, to be followed by that on research methodology in special education, and that on learning management for learners with physical and health impairment, respectively; while there are the needs on some other topics, but these needs were at lower levels; this is probably because the largest numbers of learners with special needs are those of learners with learning disability, learners with mental retardation, and autistic learners; while the number of learners with physical and health impairment was smaller resulting in the need for organizing learning management for this group of learners receiving lower rating mean. The above-mentioned needs are in line with the statistics on learners with special needs of the Bureau of Special Education Administration, Office of the Basic Education Commission, Ministry of Education, which showed large numbers of learners with learning disability, learners with mental retardation, and autistic learners (Bureau of Special Education Administration, 2012). Also, the finding that the rating mean of the need for knowledge on research methodology in special education being the second highest might be because the knowledge on conducting research studies for development of learners with special needs was necessary for the teachers to carry out research studies for development of those learners under their responsibility, as stipulated in Article 24 of the National Education Act, B.E. 2542, that the school must support the teachers to organize learning environment and atmosphere to facilitate learning for the learners, to have knowledge and ability to apply research as part of the teaching-learning process, and to utilize the research process for development of learning management.

Regarding results of development and efficiency verification of the distance training package on learning management for learners with special needs, the steps of development of the distance training package employed by the researcher were in line with the concepts for training package development presented by Chaiyong Bhrammawong (1978), and Niphon Sukpreedee (2004); and the steps of creating the

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training package were in line with those of Phatcharee Phonyothin and others (2005), and Jareeluk Rattanaphan (2014), that is, there are analysis of contents, determination of topics, concepts, objectives, activities, and there are evaluation and testing to determine the efficiency of the training package and to subsequently improve it; and the components of the training package were determined to be in line with the training package components presented by Jintana Baigasuyi (1993), Phatcharee Phonyothin and others (2005), and Worarat Pathumcharoenwattana (2013); accordingly, the training package developed by the researcher was composed of two parts of contents with illustrations, namely, Part 1: Learning management for learners with special needs, which presents knowledge on learning management for learners with learning disability, for learners with mental retardation, for autistic learners, and for learners with physical and health impairment, all of which are often found in schools containing mainstreaming classrooms; and Part 2: Conducting research for development of learners with special needs, which present knowledge on how to conduct research for development of learners with special needs. The finding on efficiency of the developed distance training package, which was 79.50/81.35, was in line with opinions of the experts who assessed quality of the distance training package before experimentation that the developed distance training package had appropriate contents, presented activities, printing format, and components. The efficient based on the 80/80 efficiency criterion, and ± 2.5 was accepted. (Chaiyong Bhrammawong, 1978). The result research had achieved the first research objectives.

Regarding results of experimenting with the distance training package which showed that the post-experiment mean score of knowledge and understanding on learning management for learners with special needs of teachers in the sample was higher than their pre-experiment counterpart mean score at the .05 level of statistical significance. This might be because the distance training package had been developed by the researcher based on the steps of training package development and has undergone individual try-out, small group try-out, and field try-out, which is in accordance with the process of training package development presented by Chaiyong Bhrammawong (1978), Niphon Sukpreedee (2004), and Worarat Pathumcharoenwattana (2013). Also the results of experimenting with the training package reported by Kla Thongkhao and others (2002), Koson Meekhun and others (2003), Arunee Horadal and others (2005), Phatcharee Pholyothin and others (2005), and Jareeluk Rattanaphan (2014). Supported the findings of the research study.

Regarding results of the study of opinions toward the distance training package of teachers in the experimental group show that the rating mean of the item on the use of language being clear and easy to understand received the highest rating mean of 5.00, this result was in accordance with empirical data obtained from small group discussion, informal interviews and talks with the teachers sample; also, there was the item that received the second highest rating mean (4.95), i.e. the item on the amount of contents in each part being appropriate, and items that received the third highest rating mean of 4.90, i.e. the items on printing format, font size, illustration, the presented activities being practical and applicable, and the benefits gained from the presented contents, all of these were probably viewed because of the researcher was careful in designing the contents of the distance training package and put in appropriate illustration; however, some teachers presented the following suggestions: some pictures in the illustration should be enlarged to be more clearly visible; the cover and size of the document should be improved to make it more durable, such as using plastic covers; the content on characteristics and behaviors of each type of learners with special needs should be added to provide basic knowledge on each type of learners with special needs before touching on the content of teaching methods; and finally, they suggested that examples of learning management plans should

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be given following the presentation of each teaching method to enable the teachers to better understand on the application of each teaching method.

Conclusion

The distance training packages development was based on individual difference theory and distance training. Principles of developing a series of training by means of distance education (Sumaree Sungsi, 2003) and ten steps of training packages production of Chaiyong Brahmawong. (1994) were used as the process of designing the package. It was found that the efficiency was at 79.50/81.35. The results of experimenting with the distance training package found that the post-experiment mean score of knowledge and understanding on learning management for learners with special needs of teachers was higher than the pre-experiment mean score at the .05 level of statistical significance. It could be concluded that the result had achieved the research objectives. The distance training package with good quality is an alternative media for enhancing knowledge and good experiences for teachers.

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