THE DEVELOPMENT OF LEARNING MEDIA TO ENHANCE COGNITIVE DEVELOPMENT FOR YOUNG CHILDREN USING LOCAL KNOWLEDGE IN CHILD DEVELOPMENT CENTRES IN THE NORTHEAST PROVINCES

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ABSTRACT

The objectives of this research were to study of the development of Learning Media to Enhance Cognitive development for young children using local knowledge in child development centres in the northeast provinces. From the survey research found that barriers to devise instructional media that promote cognitive development for young children in child development centres were 1) materials easily break 2) lack of knowledge and understanding using local knowledge 3) materials do not attract children's interest and 4) do not understand the process of activities that promote cognitive development for children using local knowledge respectively. So that the researchers produce a set of learning media and evaluate that constructed media. 21 sample were selected from master of early childhood education, School administrators and Caregivers in the northeast provinces.

The data collection was focus group discussion. The research instrument consisted of 1) Guidelines to promote the cognitive development of young children using local knowledge 2) Learning media to enhance cognitive development for young children using local knowledge include that Set 1 Clay sculpture (Pottery), Set 2 Through culture with basketry (Wicker) and Set 3 Fabric patterns (Thai Silk) and 3) Assessment of Learning media to enhance cognitive development for young children using local knowledge in child development centres in the northeast provinces.

The results showed that

1. The learning materials that promote the cognitive was at very good level which can range in order as Set 3 Fabric patterns, Set 2 Through culture with basketry and Set 1 Clay sculpture was at good level respectively.

2. The constructed learning media was at very good level which can range in order as Set 3 Fabric patterns, Set 2 Through culture with basketry and Set 1 Clay sculpture respectively.

Keywords: Learning Media, Cognitive development, young children, local knowledge, child development centres

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INTRODUCTION

Education for young children is an important foundation for more advanced studies. Children will receive an appropriate academic foundation to their ages and prepare themselves to step into the world of education. Children at the age of 0–6 years have rapid growth of development and can develop to their highest potential. What can be improved and consistent with the interests of children is playing. Playing is learning for young children. Jiraprapha (2013) pointed out in the Journal of the American Medical Association that during the year 1981–1997, children were allowed to play as they like less than 25 percent. One of the factors is the increasing of electronic media that has a role in children's playing to decline. However, in the 21st century, educators see more advantages of playing because it has profound influence on children. Playing allows children to confront with their fear, promote their imagination, learn to adapt themselves to others, listen to others' opinions, develop their problem–solving skill and most importantly playing is children's happiness. In Thailand, there are many alternative schools that promote playing in young children such as Korn Kaew Kindergarten which is a school with the concept of Montessori's theories and Kasem Pittaya School that follows the concept of Project Approach. All these alternatives schools use playing or learning materials primarily in the development of young children. Thus, in the classroom, learning materials also play an important role in learning experience for young children.

There are many learning materials for young children these days. However, the appropriate ones should be made from the real things. At present, learning materials are made for children's appropriate development especially the ones that promote cognitive development. Dorrell (2007) discussed about learning materials promoting children's cognitive development should encourage children to use ideas and to be inquiring. Blocks are learning materials that help children learn about shapes and balance of things. While children use learning materials to create their works, they can learn about science, patterns, colors, difference of objects, classification and numbers as well as developing more problem–solving skill and confidence. In Thailand, there are many learning materials but they are often expensive and are not made of local learning materials.

In the past years, there were several studies that used local knowledge as a part of their research. However, there are a small number of research which develops local learning materials that are truly appropriate to young children. Partly, they often do not understand that local knowledge can be used to create learning materials for young children. The preliminary results of the research showed problems and barriers in using local learning materials which are 1) learning materials have no permanency 2) people lack the knowledge and understanding in using local learning materials 3) learning materials do not attract children's interest and 4) people do not understand the process of activities that promote cognitive development using local learning materials. Not only learning materials using local knowledge develop young children but also raise awareness in their local pride. As Songsri Sangsri. (2008) studied a model using local knowledge in development of children and youth with the participation of school and community. The research found that children had the skill to think critically when learning by doing from the way of living and local knowledge. Children learned things around them in fun ways and joy. They also learned various subjects at the same time and were connected to their way of life. As a result, the researchers studied the local knowledge of people in the Northeast

region of Thailand. The three categories are summarized as followed: 1) pottery 2) basketwork and 3) Thai silk. Then the researchers create learning materials that promote cognitive development of young children in the Northeast region and have studied the development of learning materials that bolster children's cognitive skills using local knowledge in child development centers in the Northeast region.

OBJECTIVES OF THE STUDY

This study continues to explore ways to use the learning materials that promote the cognitive development of young children using local knowledge in child development centers in the Northeast. The researchers found problems using learning materials by caregivers in the Northeast region which are knowledge and understanding of how to use learning materials appropriately and how to create learning materials that are durable. Thus, the researchers have created learning materials that meet the needs of the caregivers and provide them to the caregivers. The objectives of this research are below.

1. To study the development of learning materials that promote the cognitive development of young children by using local knowledge in child development centers in the Northeast region of Thailand.

2. To compare the assessment of learning materials as a set that promotes the cognitive development of young children using local knowledge in child development centers in the Northeast region of Thailand.

MATERIAL AND METHOD

Participant

The sample in this study is 21 specialists including 3 early childhood education college teachers, 3 kindergarten school administrators and 15 caregivers at child care centers in the Northeast region selected by purposive sampling method. The criteria are below.

1. The participants must work in early childhood education field for at least 3 years.
2. The participants must live in the Northeast region of Thailand.

Instrument

The instruments that were used to assess learning materials that promote the cognitive development of young children have 3 sets: 1) clay sculpture 2) through culture with basketry and 3) fabric patterns. The researchers evaluated learning materials using a rating scale (in a sequence from 1–5) that are divided into five areas which are the suitability of promoting young children's cognitive development, the suitability for young children, the security, the materials and manufacturing process and the application of local knowledge. After that the researchers gave the instruments to the 3 specialists to examine the content validity and made an improvement before actually applied.

Procedure

1. After receiving preliminary data from a survey on learning materials that promote the cognitive development of young children by using local knowledge by question ire to ask caregivers from child development centres.

2. The researchers have created sets of learning materials based on the survey and the instruments in this research are 3 sets of learning materials that promote cognitive development and 9 manuals of creating learning experiences that promote cognitive development for young children using local learning materials which are:

Set 1 Clay sculpture (Pottery)

Activity 1 pretty drawing (language and literacy lesson plan)

Activity 2 picture perfect (science lesson plan)

Activity 3 clay–colored tiling (mathematics lesson plan)

Set 2 Through culture with basketry (Wicker)

Activity 1 creative weaves stripes (language and literacy lesson plan)

Activity 2 lunch–box brothers (science lesson plan)

Activity 3 geometry enjoyment (mathematics lesson plan)

Set 3 Fabric patterns (Thai Silk)

Activity 1 tales from the fabric (language and literacy lesson plan)

Activity 2 tie–dye colors (science lesson plan)

Activity 3 by the numbers (mathematics lesson plan)

3. And collect such information by providing Focus Group

Discussion of the samples mentioned above. The statistics used in this study are the mean and standard deviation.

RESULTS

About the results presented that:

1. After evaluating the average rating of the media that promotes cognitive development of young children found the learning materials that promote the cognitive was at very good level which can range in order as Set 3 Fabric patterns, Set 2 Through culture with basketry and Set 1 Clay sculpture was at good level respectively. (follow by Figure 1)

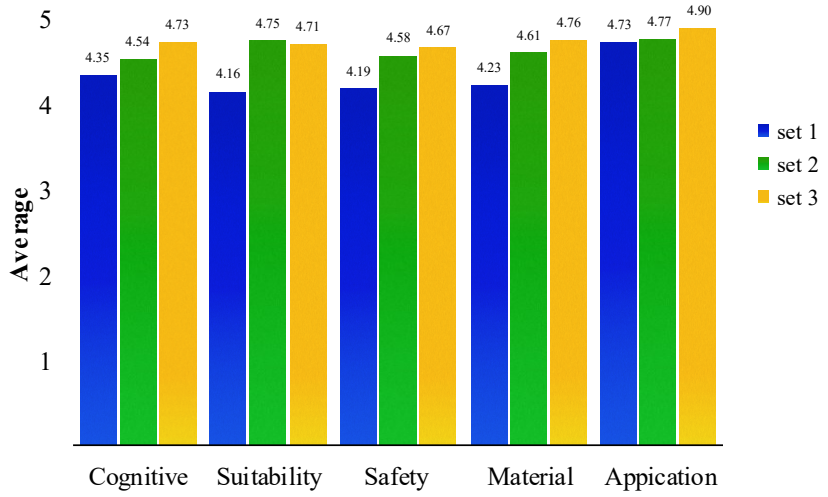

Figure 1 A comparison of the rating of 5 areas of learning materials that promote the cognitive development of young children which are the suitability of promoting young children's cognitive development, the suitability for young children, the security, the materials and manufacturing process and the application of local knowledge.

2. The constructed learning media was at very good level which can range in order as Set 3 Fabric patterns, Set 2 Through culture with basketry and Set 1 Clay sculpture respectively. (follow by table 1–3)

Table 1: A comparison of the mean, 1 Clay the standard deviation and the level of satisfaction to assess learning materials that promote the cognitive development of young children in child development centers using local knowledge in the Northeast region of Thailand. (Set Sculpture)

o.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
1	The suitability of promoting young children's cognitive development			
1.1	Foster scientific skills	4.38	0.50	Good
1.2	Foster mathematic skills	4.56	0.63	Very good
1.3	Foster language skills	4.13	0.50	Good
2	the suitability for young children			
2.1	The learning materials are age appropriate and development appropriate.	3.94	0.57	Good
2.2	The size of learning materials is appropriate for children.	3.94	0.68	Good

Table 1: (continue)

o.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
2.3	The learning materials are easy to learn for children	4.50	0.63	Very good
2.4	The learning materials can be applied in many learning subjects.	4.63	0.62	Very good
2.5	The learning materials are easy to maintain.	3.44	0.63	Fair
2.6	The learning materials have the right weight.	3.94	0.44	Good
2.7	The learning materials attract children's attention.	4.44	0.51	Good
2.8	The learning materials are made of things around children.	4.50	0.63	Very good
3	the security			
3.1	The learning materials are not sharp or have hazardous sharp points.	4.50	0.73	Very good
3.2	The material parts are strong and do not fall apart.	3.56	0.81	Good
3.3	The materials used are safe and non toxic.	4.50	0.73	Very good
4	the materials and manufacturing process			
4.1	The materials used are durable.	3.44	0.81	Fair
4.2	The materials used are appropriate.	4.19	0.54	Good
4.3	The materials used do not harm an environment.	4.69	0.48	Very good
4.4	The materials used are easily found.	4.38	0.62	Good
4.5	The materials used have great design and not complicated.	4.44	0.51	Good

Table 1: (continue)

o.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
5	the application of local knowledge			
5.1	The local knowledge is appropriate for young children.	4.69	0.48	Very good
5.2	The local knowledge is from things around children.	4.81	0.40	Very good
5.3	The local knowledge is not complicated.	4.69	0.48	Very good
	Total	4.33	0.29	Good

Table 2: A comparison of the mean, the standard deviation and the level of satisfaction to assess learning materials that promote the cognitive development of young children in child development centers using local knowledge in the Northeast region of Thailand. (Set 2 Through Culture with Basketry)

No.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
1	The suitability of promoting young children's cognitive development			
1.1	Foster scientific skills	4.31	0.60	Good
1.2	Foster mathematic skills	4.75	0.58	Very good
1.3	Foster language skills	4.56	0.51	Very good
2	the suitability for young children			
2.1	The learning materials are age appropriate and development appropriate.	4.75	0.58	Very good
2.2	The learning materials can be applied in many learning subjects.	4.81	0.40	Very good
2.3	The learning materials are easy to maintain.	4.63	0.62	Very good
2.4	The learning materials have the right weight.	4.75	0.45	Very good
2.5	The learning materials attract children's attention.	4.81	0.40	Very good
2.6	The learning materials are made of things around children.	4.69	0.48	Very good

Table 2: (continue)

No.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
3	the security			
3.1	The learning materials are not sharp or have hazardous sharp points.	4.69	0.70	Very good
3.2	The material parts are strong and do not fall apart.	4.44	1.09	Good
3.3	The materials used are safe and non toxic.	4.63	0.62	Very good
4	the materials and manufacturing process			
4.1	The materials used are durable to use.	4.56	0.63	Very good
4.2	The materials used are appropriate.	4.56	0.63	Very good
4.3	The materials used do not harm an environment.	4.56	1.03	Very good
4.4	The materials used are easily found.	4.63	0.50	Very good
5	the application of local knowledge			
5.1	The local knowledge is appropriate for young children.	4.75	0.45	Very good
5.2	The local knowledge is from things around children.	4.81	0.40	Very good
Total	4.65	0.37	Very good	

Table 3: A comparison of the mean, the standard deviation and the level of satisfaction to assess learning materials that promote the cognitive development of young children in child development centers using local knowledge in the Northeast region of Thailand. (Set 3 Fabric Patterns)

No.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
1	The suitability of promoting young children's cognitive development			
1.1	Foster scientific skills	4.69	0.48	Very good
1.2	Foster mathematic skills	4.81	0.40	Very good
1.3	Foster language skills	4.69	0.48	Very good
2	the suitability for young children			
2.1	The learning materials are age appropriate and development appropriate.	4.81	0.54	Very good
2.2	The size of learning materials is appropriate for children.	4.69	0.48	Very good
2.3	The learning materials are easy to learn for children.	4.75	0.58	Very good
2.4	The learning materials can be applied in many learning subjects.	4.81	0.40	Very good
2.5	The learning materials are easy to maintain.	4.63	0.62	Very good
2.6	The learning materials have the right weight.	4.75	0.58	Very good
2.7	The learning materials attract children's attention.	4.56	0.63	Very good
2.8	The learning materials are made of things around children.	4.69	0.48	Very good
3	the security			
3.1	The learning materials are not sharp or have hazardous sharp points.	4.69	0.48	Very good

Table 3: (continue)

No.	Assessment List	Mean ($\bar{x}$)	Standard Deviation (SD)	Satisfaction Levels
3.2	The material parts are strong and do not fall apart.	4.75	0.58	Very good
3.3	The materials used are safe and non toxic.	4.56	0.63	Very good
4	the materials and manufacturing process			
4.1	The materials used are durable to use.	4.56	0.63	Very good
4.2	The materials used are appropriate.	4.75	0.45	Very good
4.3	The materials used do not harm an environment.	4.88	0.34	Very good
4.4	The materials used are easily found.	4.75	0.45	Very good
4.5	The materials used have great design and not complicated.	4.88	0.34	Very good
5	the application of local knowledge			
5.1	The local knowledge is appropriate for young children.	4.88	0.34	Very good
5.2	The local knowledge is from things around children.	4.94	0.25	Very good
5.3	The local knowledge is not complicated.	4.88	0.34	Very good
	Total	4.75	0.25	Very good

DISCUSSION

The results of this research showed that the learning materials that promote the cognitive development of children in child development centers were assessed on a very good level. The researchers also found issues that arose in the assessment of learning materials that promote the cognitive development of young children below.

Set 1 'clay sculpture' is the learning materials that are made from pottery. They are fragile and easy to break. The assessment pointed out that it would not be appropriate for young children. However, teachers can make an agreement with their children about the equipment used in a classroom so that the children become aware of the objects' properties. They can also learn about local knowledge and love their own neighborhood. This is related to what Dorrell (n.d.) said about the selection of appropriate toys and equipment for young children that it will have to reflect the lifestyle of the people in the community and local culture. In addition, Sittiporn Ieamsan (2013) suggested the concept of skills for teachers in a 21st century both personally and professionally that they should integrate work proces

with learning local knowledge and occupation of the people in the community. For example, taking children to buy things from the local market. They will have an opportunity to experience in a real situation rather than learning only from pictures or books.

Set 2 'through culture with basketry' is the learning materials that interest many assessors because they can be found easily in the neighborhood and can be applied to a variety of teaching and learning experiences due to their shapes and sizes. Linda and Miller (2007) said about choosing toys for children that the good ones should allow children to think and encourage them to feel like learning. Children can play toys in various ways and can adjust to many learning levels especially the ones with colors and shapes that are suiTable: for young children.

Set 3 'fabric patterns' is the learning materials that many assessors think they can develop children's creativity and imagination and have a suiTable: form for young children that can be applied to a variety of teaching and learning experiences. They also use colorful materials that can be found in the neighborhood and suiTable: for child development. Guyton (2011) said about using learning materials for developing young children that toys and activities such as a story–telling from dolls enhance children's cognitive development by allowing children to tell a story of dolls made from various materials. It also promotes children's creativity, imagination, abstract thinking, language and

CONCLUSION

The researchers found limitations on learning materials using local knowledge in this research. The assessors suggested that the researchers should not use Kratip (bamboo container for holding cooked sticky rice) as a learning material due to the fact that Kratip is the Northeast region food container and the culture will not use it for toys. When the children go back home and play with Kratip as a toy, their family will not be pleased. Therefore, the researchers made an agreement with the children that Kratip that was used at the school was not regular Kratip as they saw at home.

The researchers also noticed about the local learning materials that were used for teaching. They were used and then ran out such as a banana tree horse and the woven from coconut leaves. These kinds of learning materials are not durable and the children cannot come back and play again. The researchers realized that the people forgot to use some more durable materials in their community such as silk dolls (from set 3 'fabric patterns'). Thai silk can be found in the local community, easily produced with colorful patterns, unique in each region and meets the needs of young children. The presentation of this study sparked the idea for the assessors to apply local learning materials in a classroom for the benefit of young children. Moreover, the children will learn about local art and culture with the pride of their local community.

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