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Developing Kataligen (A Multiple Intelligences-Based Hand Puppet) for a Group at ABA 1 Kindergarten, Kaliwates, Jember in 2019/2020 Academic Year

Igrah Lishantya Gusman[1]*, Nanik Yuliati[1], Luh Putu Indah Budyawati[1]
[1]University of Jember, Jember, Indonesia

Email: **igrah.fkip@unej.ac.id***

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ABSTRACT

This research is motivated by a number of children who are less focused on paying attention to the learning material when the teacher explains the material in the classroom. It is also to maximize the use of learning support media such as Educational Game Equipment (EGE) that support the development of the nine intelligences of children. This research was conducted to develop cataligent media (hand puppet based on multiple intelligences) group A in TK ABA 1 Kaliwates Sub-district, Jember Regency in Academic Year 2019/2020. The process and the result of media development of hand puppet based on multiple intelligences covering the nine intelligences: verbal-linguistic intelligence, logical-mathematical intelligence, spatial-visual intelligence, bodily-kinesthetic intelligence, musical intelligence, spiritual intelligence, interpersonal intelligence, intrapersonal intelligence, and naturalist intelligence. The purpose of this study was to develop the process and the result of media development which were obtained from cataligent media toward group A TK ABA 1 Kaliwates Sub-district, Jember Regency. This developmental research was conducted in the odd semester. The theory used in this research was the theory from Borg and Garl that is Research and Development (RnD). The data collection techniques used in this research was observation, validation, interviews, and questionnaires. The result showed that the development of kataligen media (hand puppet based on multiple intelligences) group A in TK ABA 1 Kaliwates Sub-district, Jember Regency, can be claimed effective. It is proven by the result of calculating the overall percentage of the result of observations toward children's activities that is 91.94%. Based on the result of the effectiveness of the first and the second day trials in group A1 showed that the children develop 2.78% in multiple intelligences of children. Based on this research, it is better to utilize appropriate learning media to develop multiple intelligences of children in order to facilitate students in teaching and learning process.

INTRODUCTION

Early childhood education is fundamental to its current development period. The child is able to quickly learn a lot of new knowledge that he got early, especially at the age of 0-8 years. In this golden age children will get a lot of knowledge from what they get in the surrounding environment through stimulus, nurturing, coaching and providing learning activities to hone the child's development and skills. Early childhood education is also a place for children to develop their talents and interests early on and can stimulate them according to the level of development of children according to their age.

When the Golden Age is also children will learn about various things and new knowledge in the environment around them. There are various forums for early childhood development. According to the Republic of Indonesia Law Number 20 Year 2003 regarding the National Education System (Sujiono, 2013: 16), based on this it can be classified, among them there are kindergartens (kindergartens), namely education for children aged 4-6 years. Furthermore, ECE (Early Childhood Education), is a place for the development of children aged 0-6 years. There is a PG (Play Group), which is a play group for children aged around 2-4 years. The last is CCC (Child Care Center), which is a place for developing children aged 0-6 years. Various education for early childhood is expected to develop multiple children's intelligence in a fun way because in essence the child can learn about something through play.

There are various talents and interests possessed by children, including the potential for intelligence. Intelligence can be seen when children are able to get things done, decision making, and problem solving faced by children. Because basically every child is born smart and unique. Every child has a different intelligence and is not the same from one another. Influenced by external and internal factors including: the fulfillment of balanced nutrition, the environment, and so forth. To develop the intelligence potential possessed by early childhood, Gardner classifies that there are 9 intelligences that can be called multiple or multiple intelligences (Gardner, 2013: 21-33). Among them:

1) Musical intelligence,
2) Bodily-kinesthetic intelligence,
3) Logical-mathematical intelligence,
4) Verbal-linguistic intelligence,
5) Spatial-visual intelligence,
6) Interpersonal intelligence,
7) Intrapersonal intelligence and the latest,
8) Naturalist intelligence and,
9) Spiritual intelligence.

According to Gardner (2013: 19), intelligence is an ability that processes in the brain that aims to process certain types of knowledge and information that originate from internal and psychological factors of humans themselves. According to Gardner (in Sujiono, 2013: 176) states that intelligence is a potential or a way that is owned to be able to solve problems, create something that is of use value in one or in a number of communities' habitual environments. According to Bandler & Grinder (in DePotter in Sujiono, 2013: 176) states that intelligence is a form of expression through one's thinking techniques that can be used as a foundation for learning, some people dominate on one of the foundations of learning that functions to filter on learning, processing and communication.

Based on the description of the above understanding, it can be concluded that multiple intelligences or multiple intelligences is intelligence that always cooperates in all roles that will involve several different intelligences to produce another intelligence including: 1) Linguistic intelligence, 2) Logical-mathematical intelligence, 3) Spatial visual intelligence, 4) musical intelligence, 5) kinesthetic intelligence, 6) interpersonal intelligence, 7) intrapersonal intelligence, 8) naturalist intelligence, and most recently 9) spiritual intelligence.

According to Kirschenbaum in Jasmine (2019: 16) linguistic intelligence, referred to by some educators and writers as verbal intelligence, is not the same as other intelligences because everyone who can speak and speak can be said to have that intelligence on several levels. Based on the description of this understanding, it can be concluded that linguistic intelligence is intelligence that is applied in terms of language both in the form of words, oral, and written.

According to Jasmine (2019: 19) logical-mathematical intelligence is related to and encompasses scientific abilities. Based on the description of this understanding, it can be concluded that logical-mathematical intelligence is intelligence that has a large influence in terms of scientific and logical thinking, referring to problem solving based on careful analysis.

According to Suyadi (2014: 130) visual intelligence is the ability to look at an object in great detail and detail. Based on the description of this understanding, it can be concluded that spatial visual intelligence is intelligence that emphasizes in terms of understanding related to space, objects, or images that make it easy for children to quickly accept all knowledge.

According to Jasmine (2019: 22) some people assume musical intelligence is related to sound intelligence or musical / rhythmic intelligence. Based on the description of this understanding, it can be concluded that musical intelligence is intelligence that has a major influence on matters relating to tone, rhythm, and music in children's learning processes.

According to Suyadi (2014: 132) kinesthetic intelligence is the ability to combine physical with mind to produce complex movements. Based on the description of this understanding, it can be concluded that kinesthetic intelligence is intelligence that dominates activities that require a movement in it, where the child will learn or receive knowledge quickly by moving.

According to Jasmine (2019: 26) interpersonal intelligence is raised in the pleasure of friendship and joy in various social activities as well as discomfort or aversion to solitude and solitude. Based on the description of this understanding, it can be concluded that interpersonal intelligence is intelligence that has the potential to socialize with others.

According to Suyadi (2014: 134) intrapersonal intelligence is the ability to understand oneself and be responsible for one's own life. Based on the description of this understanding, it can be concluded that intrapersonal intelligence is intelligence that understands oneself. Being able to provide peace in the soul in understanding one's own feelings well.

According to Widayanti (in Suyadi, 2014: 136) naturalist intelligence is the ability to recognize all types of flora (plants), fauna (animals), and other natural events, for example plant growth, animal origin, occurrence of the solar system and various galaxies, etc. so. Based on the description of this understanding, it can be concluded that

naturalist intelligence is intelligence related to nature. How children will quickly absorb knowledge when learning is based on nature.

According to Suyadi (2014: 139) spiritual intelligence is the ability to "feel" one's diversity. How do children to be able to recognize their god and pray and worship the religion they profess. Based on the description of this understanding, it can be concluded that spiritual intelligence is intelligence that deals quickly in understanding related to religion.

Teachers and parents must also be able to classify children into nine intelligences or multiple intelligences. Early childhood aged 4-5 years should at that age the intelligence of children in the field of logical-mathematical, namely the child is able to have the ability to understand several numbers and concepts of mathematical logic. Then in the field of linguistic intelligence, children should have a relatively large vocabulary. In the field of interpersonal intelligence, children socialize a lot at school or in the neighborhood. In the field of intrapersonal intelligence, children have interests, hobbies, and ways of having fun that cater to themselves. In the field of kinesthetic intelligence, children do not like to sit for long and are active in activities related to physical motor. In the field of spatial visual intelligence, children have the ability to create a form, such as cars, and others. In the field of naturalist intelligence, children who have high naturalist intelligence tend to like the open nature. In the field of musical intelligence, children can respond emotionally to the music they listen to. In the field of spiritual intelligence, children are quicker to memorize prayers that have been taught by the teacher. To be able to support in optimizing learning activities so that it can run optimally, it needs to be supported by the application of Educational Game Equipment (EGE) so that the nine intelligences can be properly facilitated. However, the reality that occurred on the ground when the observations did not say so. What is found in the field is that teachers at the institution have understood several characteristics that are characterized by each intelligence in multiple intelligence. But in its application, the teacher has not been optimal in using learning support media such as Educational Game Equipment (EGE) that support the development of the ninth children's intelligence. One of the efforts given from the use of instructional Educational Game Equipment (EGE) is innovative hand puppets based on multiple intelligence.

One of the efforts given from the use of instructional Educational Game Equipment (EGE) is innovative hand puppets based on multiple intelligence. The method of storytelling aided by innovative hand puppet media in essence stimulates more linguistic intelligence, but has innovation in this media that is able to support multiple intelligence. Besides the game design which is located on the puppet stage can provide knowledge of the nine multiple intelligence for children by playing. First, in a dimension of logical-mathematical intelligence game, children will play with a number tree. Second, games on linguistic intelligence are related to children's stories. Third, games on interpersonal intelligence are related to block games. Fourth, the game on intrapersonal intelligence has a role in regulating attitudes and behaviors towards oneself when playing kataligen media. Fifth, the kinesthetic intelligence in the game appears when they zigzag through obstacles in the bottle provided. Sixth, the game of spatial visual intelligence is in the color combination when the child has coloring that has been provided on the puppet stage. Seventh, there is naturalist intelligence in the classification of fruits into the same color. Eighth, the musical intelligence game is covered by linguistic intelligence where children will sing together. Ninth, namely a

game of spiritual intelligence that is able to say prayers before and after the kataligen media play activity. The kataligen media essentially stimulates more linguistic intelligence, but has innovation in this media that is able to support multiple intelligence. Besides the game design which is located on the puppet stage can provide knowledge of the nine multiple intelligence for children by playing.

Figure 1. Kataligen Media

Through activities that can develop multiple intelligence for group A children aged 4-5 years, it is hoped that it can stimulate multiple intelligence of children as a whole. It is also hoped that the multiple intelligence learning of group A children can be in tune with their age and development and experience development at the appropriate stage. Based on the background of the research, it is very important that the activities of storytelling assisted by innovative hand puppets by bringing interesting stories can develop multiple intelligence in children. Therefore, it can be interested to conduct research with the title "developing kataligen (a multiple intelligences-based hand puppet) for a group at ABA 1 Kindergarten, Kaliwates, Jember in 2019/2020 academic year ".

METHODOLOGY

This research was conducted in Kindergarten Bustanul Athfal (ABA) 1 Kaliwates Jember which is located at Street KH. Agus Salim Gg. Kaliserang Number. 32A Kaliwates Jember. This developmental research was conducted in A1 group children in the 2019/2020 school year odd semester with a total of 20 children. The time used is 1 small group test and 2 times the development test. This type of research used is research and development of R&D (Research & Development) according to Borg and Garl with data collection techniques used are observation, interviews, validation, and questionnaires.

The steps of research and development are shown in picture 2. below. Based on picture 2. it can be described as follows.

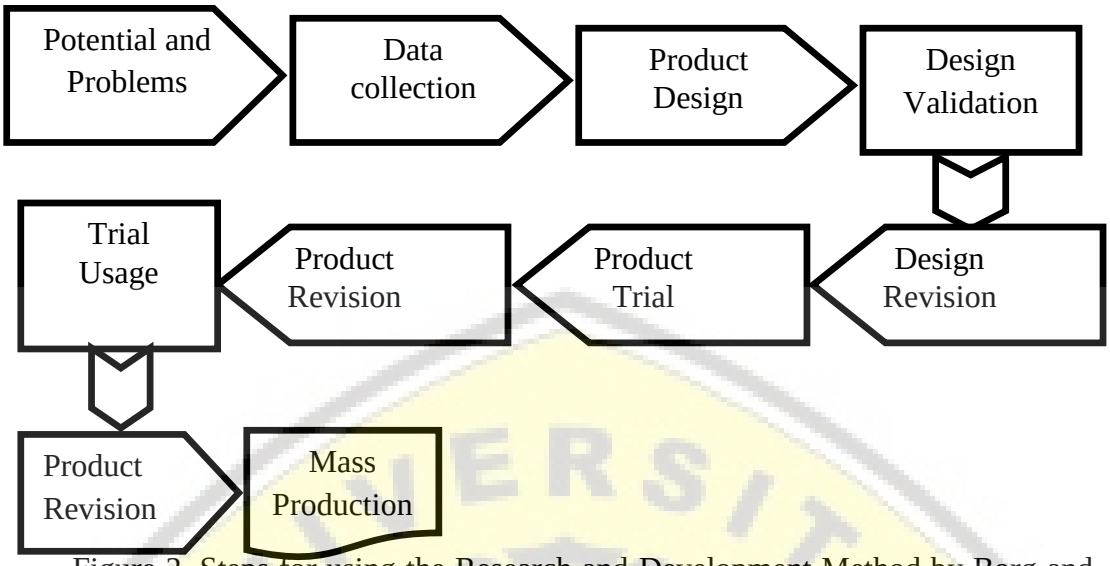

Figure 2. Steps for using the Research and Development Method by Borg and Gall (Sugiyono, 2018: 298).

Observations were made to find the potential and problems that occur when extracting data or information to be obtained. Through observation, it will find out the existing problems and then provide solutions to these problems, and can be a temporary reference for product design that will be used later when research is developed.

The interview is a question and answer process between the researcher and the informant that is used to find information on the data obtained, and is very useful for data collection at the time of the study. With interview techniques can add data information through informants. That way, the data information obtained can be accurate and directly sourced.

Design validation is used to assess products that have been designed whether the media of the oxygen is valid or suitable for use in research. In this case the validator consists of 2 educational experts accompanied by predetermined qualifications. Validator 1 (V1) is a lecturer in Jember University who is an expert in the field of education and validator 2 (V2) is a class A1 teacher at ABA 1 Kindergarten Kaliwates Jember.

The questionnaire serves to find out accurate information obtained from data sources based on a set of questions and written statements to the informant to be given a response that is in line with user requests.

RESULT AND DISCUSSION

In this research, the product developed is a media of hand puppets based on multiple intelligences with 4 kinds of human forms including one family member consisting of: Father, Mother, Brother, and Sister. This research was conducted at ABA 1 Kindergarten Kaliwates Jember. The subjects of this study were 20 children in group A. The trial use was carried out in class A1 with the method of research and development (RnD) using kataligen media. The purpose of this study is to produce a learning medium for developing multiple intelligences of children.

The feasibility of the kataligen media was obtained from the results of the assessment by the media experts and the results of the interviews with the group A1 teacher. The steps in this research include: 1) the stage of potential and problems; 2) the

stage of gathering information; 3) the product design stage; 4) design validation stage; 5) design improvement phase; 6) product trial phase; 7) product revision stage; 8) trial phase of usage; 9) product revision stage; 10) the stage of making mass products. Potentials and problems occur based on observations while at the institution. Problems caused arise from children when learning takes place in the classroom. Children who experience a lack of focus in learning have the potential to not pay attention to the teacher in conveying the concepts of the material being taught. This will have an impact on the continuity of future understanding. The source of the problem is learning media. The kataligen media solution can assist teachers in conveying the concepts of material taught universally and innovatively to develop multiple intelligences of children.

Information gathering that has been done with the teacher discusses the development of multiple intelligences that children have. From the results of extracting the information obtained that is, the teacher already knows the meaning of the plural intelligence of children. In general the teacher also knows what are the characteristics of intelligence possessed by a child. However, this is not in detail. In the aspect of child development, the teacher has mastered every child development, because every day the teacher does the assessment documentation of several children every day. With the existence of a kataligen media for monitoring the nine children's multiple intelligences can be channeled by the teacher and the child can be stimulated to the development of multiple intelligences on what they have.

Based on the research activities of the students' readiness learning instrument and the development of the kataligen media, the data were analyzed and recapitulated based on the determination of the previous criteria. The instrument of student learning readiness and individual learning programs has been fulfilled for valid, effective and practical categories. Overall criteria and assessment results are presented in Table 1.

Table 1. Recap of Validation Results

No.	Data	The Results	Criteria
1.	Media Validation Score	4,2	Valid
2.	Teacher Activity Observation Score	97%	Practical
3.	Child Ability Checklist Score	91,94%	Effective
	Teacher Response Scores to Learning	85%	

From table 1. it can be concluded that, the validation score of the children's learning media instrument, kataligen can be categorized as valid, so it can be continued with field trials. Kataligen learning media instrument is categorized as practical. This data was obtained from teacher activity data that was observed through an observation sheet. In addition, the indicator instrument of kataligen learning media is categorized effective based on the criteria, namely: 1) The activeness of the child is minimally active, 2) More than 90% of children are complete, and 3) The response of children is positive.

The design of the hand puppet product contains several design improvements to the results described in the validation results. Revisions to the cataligen media can be the based for further development for hand puppets. Where hand puppets based on multiple intelligences already have a decent classification to be mass produced in the future. The results of this design improvement become a reference in the development of multiple intelligences contained in the kataligen media. So that indicators in achieving the development of children in the ninth intelligence can be implemented optimally and multiple intelligences in children experience comprehensive

development. Validation data analysis by the first validator namely Mrs. Luh Putu Indah Budyawati, S.Pd., M.Pd as a media expert in her field. The provision of suggestions and input on the catalytic media should be further refined for further trials. In the second validator, namely: Mrs. Dwi Mas'amatul Mukminah, S.Pd., the kataligen media has improved the design on the durability points (strong and durable) on the element of the number tree found on the kataligen stage. The repairs were carried out because during the trial the fruit tree experienced a slight damage caused when students played it. Therefore the product must be more refined in terms of its durability. So, based on the results of the validation by the media experts the overall validation average score of the two validators is 63, the media gets a decent rating, with an average of 4,2. The results are then consulted in the product eligibility test criteria table, then included in the valid category, because it is in a range of 4≤Va <5 scores and can be tested.

Product trials were carried out, namely 2 large group development tests. The initial step is the first meeting using a small group test first, a sample of 5 children to be tested on indicators of children's activity on the nine multiple intelligences. In this small group test the total score is 32,6 with a percentage of 89.28%. From these results it can proceed to the large group test at the next meeting.

Practical data analysis on the first large group test was obtained from the recapitulation of observations of teacher activities at the second meeting. In this test an average of 4,8 with a percentage of 96%. Based on the results of practicality test data on the use of kataligen media in group A1, in the recapitulation table the observations of teacher activities were declared practical, because they received an average value of 4,85 on a range of scores of 4≤Va<5. The developed product shows that it is worthy of further testing in the effectiveness of the product in group A1.

The results of observations of children's activities some of the presentations have a stable value and some have even experienced an improvement in indicators in multiple intelligences. The effectiveness test is carried out by a checklist method through recapitulation of the results of observations of the child's activity on indicators of developmental achievement in multiple intelligences of children. Based on the results of the calculation of scores on the effectiveness of the results of observations of the activities of children in group A1 with the number of the first large group test scores amounted to 90.55% and 93.33% for the second large group trial. So from the two days it can be stated the overall percentage of observations of children's activities ie 91.94%. Based on the calculation results it can be concluded, that the effectiveness of the first day and second day in the A1 group experienced a development of 2.78% in multiple intelligences of children.

CONCLUSION

Based on the results of research on development that has been carried out, the following conclusions are obtained: (1) learning by using the media of learning as a valid kataligen based on the validator's assessment, (2) based on learning using a kataligen media is categorized as practical because teaching activities are observed through observation sheets, and then (3) learning with kataligen media is categorized as effective because based on the results of the observation checklist of abilities, the results of children's activities, and also the results of children's responses. Media has a positive impact on classroom learning. Besides being able to develop multiple

intelligences of children, the media can also help children concentrate more on accepting the concept of material from the teacher in the classroom. Suggestions from the development of the research that have been carried out include: (1) The media for learning the kataligen needs to be tested in other schools; and (2) This research has gone through 2 stages, namely development research. Where to find out the effectiveness of the application of kataligen media, then proceed with the development of the resulting product.

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