



Development of Creative Game Models Through Natural Media

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The purpose of this study was to develop creative game models with natural media for early childhood. This research uses research and development methods to produce certain products, and test the effectiveness of these products. This research was conducted at the Teratai Kindergarten in Makassar City using a purposive sampling technique. The data collection techniques used were observation, interviews, questionnaires and documentation. The data analysis techniques used in the development of the product design (prototype) learning models were in the form of a descriptive picture and a description of practicality before testing the product. The results showed that the form of the creative game design with natural media for early childhood consists of two components. Namely, the philosophy component of the model, including the rationality of the model, objectives, teacher roles and system support, while the operational components of the model are detailed in all types of activities with various themes or sub-themes. All activities are packaged with the aim of developing children's creativity.

Keywords: *model development, creative games, natural materials, early childhood*



INTRODUCTION

Education essentially has goals and objectives to develop every potential possessed by humans, this is also inseparable from the educational process for children which basically cannot be separated from the environment in which children grow and develop. Education has a very important role in childhood, because the development of the personality, mental attitude, and intellectual is formed at an early age (Whitebread et al., 2011).

Early education is one of the keys to overcoming the nation's downturn, especially in preparing reliable human resources. Every child has unlimited abilities in learning and can think creatively and productively (Akman & Özgül, 2015). Therefore, children need educational programs that are able to unlock hidden potential through meaningful learning as early as possible. If the potential in the child has been lost, so too are important opportunities and momentum in their life.

Education in kindergarten generally aims to facilitate the growth and development of children optimally and comprehensively, according to the norms and values of their lives (Sarama & Clements, 2009). To implement this principle, the teacher should act as a facilitator and planner in every learning activity, and must be able to evoke a pleasant and meaningful atmosphere and learning environment in accordance with the needs according to the norms and values of the child's life.

The world of children is the world of play, every time there is an opportunity wherever and whenever playing. Some children lack socialisation with their environment, if in their environment, the community lives individually. In this case, children tend to be selfish, don't want to admit their mistakes, children want to win themselves, and do not want to be defeated by others. As a result, you can't socialise well.

According to Capelli (2011), talent is an ability that is something that is "inherent" in a person, taken from birth which is very determined by the environment. Many factors influence children's development and many can be done.

Playing for children is not just playing, but is one part of the learning process. In playing, children can receive a lot of stimulation, besides being able to make themselves happy can also increase children's knowledge. Play is a fun activity for the child to absorb the new information that he responds with a positive attitude and without coercion. So that in the process of playing, children learn more through their daily activities (Brown, S.L., 1995; Craft, 2010; Blaise, 2012).



Playing is an activity that is inherent in the world of children; playing is the nature of children. Broadhead, Howard and Wood (2010) say that play can be seen as a voluntary activity, spontaneous, focussing on the process of giving rewards intrinsically, pleasantly, and flexibly. It can be explained that playing is done on the basis of one's own desires, occurs without prior planning and is unconsciously a positive reinforcement.

Playing is an activity carried out repeatedly for pleasure and without goals or objectives to be achieved (Broström, 2005). Thus, a child who is playing, means that the child is doing an activity that is fun for him. He is free to express his ideas, imagination, and feelings which are sometimes not in harmony with the actual reality.

Gauntlett, Ackermann, Whitebread, Wolbers, and Wekstrom (2010) suggest that the game is something that is used to play, goods or something that is mocked, or actions that are not taken seriously. It means that the value of playing in a child's life is so great that the use of playing activities in the implementation of children's activities is an absolute requirement that cannot be ignored because learning for children is playing and playing is learning. Playing is also a demand and a need for various dimensions of child development (Hyson, 1982; Nilsson, 2018; Cannella, 1997; Elango, 2015; Yilmaz, 2016).

Games are situations or certain conditions when a person seeks pleasure or satisfaction through an activity called play (Jarvis, 2010; Utomo, 2017; Kang, 2018; Bassey, 2015). By playing, it provides an opportunity for children to manipulate, repeat, find themselves, explore, practice and get innumerable concepts and understandings.

A joyful learning environment can be realised in various forms of games and creative activities (Adachi, P. J., & Willoughby, T, 2013; Regenstein, 2018; Trevarthen, 2016; Udvari, 2017). It can present a conducive atmosphere to move children's familiarity with the surrounding environment. In this case, the use of natural media as a tool or game material is very suitable and is expected to provide an opportunity for children to explore the natural surroundings and be more attractive.

The environment around children is one of the learning resources that can be optimised for the achievement of quality learning processes and outcomes for early childhood because children are faced with actual events and conditions. The introduction of the surrounding environment is education as a whole, which in principle, is to form awareness in early childhood that is made aware of positive relationships between individuals and the surrounding natural environment (Fuller, R. A., & Irvine, K. N., 2010; Hedefalk, 2015; McClintic, 2015; Güven, 2017).



RESEARCH METHODS

This study uses the research and development method. Griliches (1992) defines that the research and development method is the research method used to produce a particular product and test the effectiveness of the product. This method is a needs analysis and to test the effectiveness of products that are longitudinal (gradual). The design model used in this study is according to (Branch, 2009) ADDIE learning (Analysis, Design, Development, Implementation and Evaluation), which is a procedural model that is simple and easy to produce teaching materials. The research process with the ADDIE design model generally consists of five steps: analysis, design, development, implementation and evaluation (Branch, 2009; Pribadi, 2016; Slamet & Kuswandi, 2017).

This research was conducted at the Teratai Kindergarten in Makassar City. The determination of subjects in this study was conducted using the purposive sampling technique. Zhi (2014) stated that purposive sampling is the selection of a group of subjects based on certain characteristics that have characteristics that have been previously known and used to achieve certain goals. The research subjects and data sources or informants in this study were the management of PAUD or head of kindergarten and educators or teachers. All data sources that have been selected are those who are believed to be capable and are trusted sources in providing information related to the issue of children's creative play, which is the main focus of this research.

The data collection techniques used in this study include observations; this activity is aimed at students and educators who carry out creative learning games with natural media for early childhood. Observations were carried out with one teacher and 15 students in Group B. Observation for teachers aims to identify the learning process and teacher activities, while for students, it aims to observe and monitor every development of children's creativity. The observations made observe all the processes in creative game learning and their achievements in increasing the creativity of students.

Furthermore, interviews are used as data collection techniques in conducting preliminary studies to find the problems studied and gather detail from the respondents. In carrying out this research, interviews were conducted in a question and answer format to the teacher to capture information and assessment from the research subject (child) regarding the content of learning about creative play with natural material media. In addition, this technique is also aimed at teachers, especially those who are subject to product testing in order to gather detailed information about creative game learning with natural media. Subsequently, the questionnaire is used to obtain information about the teacher's response.



RESULTS AND DISCUSSION

a. Description of Creative Games with Natural Media for Early Childhood at the Teratai Kindergarten in Makassar City

The initial step taken by researchers to obtain a picture of the creative game with natural media for early childhood at the Teratai Kindergarten in Makassar City was to conduct a preliminary study in the form of direct observation. Based on the information and the results of observations conducted by the researchers, an overview of the creative game with the media of natural ingredients in the Teratai Kindergarten of Makassar City was obtained. In this game, children are said to have less creativity as presented in the following Table 1:

Based on Table 1 above, it shows that the ability of children to play with bubbles from a mixture of water, soap, salt, sugar, and colouring was three children (42.85 per cent), the ability of children to assemble mango leaves using a stick into a crown shape was two children (28.57 per cent), and the ability of children to play with wet sand was two children (28.57 per cent).

The presentation and description of the children's learning activities at the Teratai Kindergarten in Makassar City directs the teacher and manager in the school to pay attention and strive to develop children's creativity, even though there are still many limitations and shortcomings in its implementation. Despite, at this age, children also have unique creativity.

Children have different talents and speeds and creativity. Therefore, parents and kindergarten teachers can appreciate the personal uniqueness of each. Parents, teachers, and people close to children should not force children to do the same. Likewise, do not force children to produce the same product, or even force children to have the same interests. So that children's talents and creativity can grow and develop, parents, teachers, and people closest to children must help children to find their talents and creativity.

In a follow up of the children's learning outcomes above, the teacher and the manager take concrete steps in improving the existing conditions by first conducting a curriculum analysis. This analysis refers to the 2013 curriculum that applies at the Teratai Kindergarten in Makassar City, including an analysis of learning for early childhood Group B, aged 5–6 years. From this analysis, we obtained data about the material given to children, both related to the themes and sub themes of learning, and the objectives and indicators of learning to be achieved, especially in presenting creative game models with natural media for children.

Based on the curriculum analysis of learning devices in the lotus kindergarten in Makassar City, both semester programs (Prosem), Weekly Learning Plans (RPPM), and Daily Learning



Implementation Plans (RPPH), factors were obtained that become the basic reference in conducting game activities in developing children's creativity. The factors in question include the themes and sub-themes of learning, learning objectives and learning indicators. The chosen learning themes are "Needs", "Plants" and "Recreation", with diverse sub-themes and conditioned by weekly learning implementation plans.

The learning objectives are to be achieved in the implementation of a variety of games and are to develop children's creativity, while the main activities to be achieved are based on indicators according to the 2013 curriculum content standards in the implementation of creative game models with natural material media. Namely, showing explorative activities, making works, and conducting exploration with various media and activities on sand playing activities.

Following the final results, after the researchers conducted observations and reviews of the curriculum in the Teratai Kindergarten in Makassar City, the researchers designed a game activity in order to provide experience and stimulate children to develop personal satisfaction, help children explore and understand the various dimensions of play and interaction roles, and help children describe self-awareness in reality. Before further designing the game model, the researcher traced and outlined the views of experts on the importance of creativity for early childhood, with the simplest possible discussion.

b. Overview of the Results of the Literature Study on the Role of Creative Games with Natural Media for Early Childhood

After conducting a study and review of the literature regarding creative play with natural material media and theories about creativity, the researchers chose game activities to be developed in the hope that creativity in early childhood could develop. The results of the study of creative games, especially in child development, can be described separately.

According to Edwards and Brooker (2010), the game is a self-chosen activity and takes place unconsciously. Moyles, Adams and Musgrove (2002) added that the game is a self-chosen activity without coercion, without being pressured by a sense of responsibility. Edwards and Brooker (2010) define games as something that is exciting and fun. The game has no extrinsic goals, subjective children's motivation or practical purpose. The game is spontaneous and voluntary, freely chosen by players. The player includes the active involvement of the player.

Based on the definition of the creative game above, the collaboration of the word creative game with natural material media is very supportive in its implementation. Both lead to increased aspects of child development. Creative games are a solution to overcome children's learning



saturation. Students' learning saturation results in low children's learning achievement and children's talents who have high creativity will go down and be hidden. Children feel learning as something unpleasant. Children prefer playing rather than learning. Creative games make children feel unaware that they are learning. They think this is a game, not learning.

c. The Level of Need for the Development of Creative Games with Natural Media for Early Childhood at the Teratai Kindergarten in Makassar City

The results of the observation of learning activities and the study of the concept of creative games are important matters in supporting the ability of children to be creative. Therefore, the researchers consider it necessary to examine and describe the extent of the need for the development of children's creativity through the game model. The next step that the researchers undertake is to analyse what are the needs of the teachers and children in relation to creative game models. To find out, the researchers identified the initial conditions of teachers and children in the Teratai Kindergarten of Makassar City in learning creative game models with natural media.

A needs analysis of creative game models with natural material media can be elaborated as an analysis of teacher needs. Based on the data collection techniques that the researchers use, natural media as a material for creative game activities is an important material for children because every child has unique creativity and shares little in common with others in this regard. Therefore, the teacher needs to provide an initial understanding of the basic concepts of creative play with natural material media. Furthermore, the teacher wants learning activities in creative game models with natural material media that were previously taught to children and can better develop children's understanding and creativity than before.

The philosophy components of the creative game models with natural material media in the development of early childhood creativity in the Lotus Kindergarten of Makassar City, namely use rationality. In Guilford (1950), creativity means creativity. Creativity is the ability to create or create something new. Creativity involves the process of thinking rationally, feeling, sensing and realising. There are several views in understanding creativity, namely: creativity is seen as a quality or personal trait; creativity is seen as a result that is new or different; and creativity as a process is an act of producing ideas or objects in the shape of a newly generated circuit.

A creative child will have a high imagination. A game will enable children to be creative thinking, acting, and having imagination that will help the child's creativity process. The existence of imagination training will provide children's creativity sensitivity. The purpose of creative games in learning has a purpose as the basis for choosing this method. According to



Budd Rowe (1986), teaching with the game of creativity can create a good, interesting and quality teaching system so that student learning motivation increases. Creative games aim to provide personal satisfaction and can help children explore and understand various dimensions and roles of interaction and help children draw self-awareness in reality.

The presentation of the game model, as an effort to develop the creativity of early childhood, is expected to provide important benefits for achieving the goal of implementing creative game models with natural material media that the researchers carry out and includes, among others: training children's concentration, teaching faster, overcoming time constraints, overcoming space limitations, overcoming language limitations, arousing human emotions, increasing understanding, increasing children's memories, and increasing teaching freshness. Furthermore, the role of the teacher in game model learning and in the development of children's creativity in its presentation requires that the teacher chooses and determines the game tool so that it can be said, it is 'easy to difficult'.

The aspect that must be considered by the teacher in choosing and determining the game tool is that the teacher must first be clever to choose, be selective and consider the stages of the child's overall development, to ensure the right tools and materials for playing activities so that the use can be both effective and efficient. The teacher needs to think about the varied game tools that can be used inside or outside the room and use them in various ways so that the child's ability develops optimally, as it can encourage children to channel their ideas.

Aiding the development of creativity in early childhood at the Teratai Kindergarten in Makassar, the game model developed is a game model using natural media and children are involved as executors of the game. This model will stimulate children's creativity by using their own ideas. The next activity is to design creative game models with natural material media by compiling the achievement indicators used. The model of the game carried out consists of various types of games which include: playing bubbles from a mixture of water, soap, sugar, salt and food colouring; making crown shapes from mango and stick leaves; and playing with sand.

The mastery stage of the learning activities material with the game model is carried out by an exercise process based on the syntax or stages of implementation. In each activity, observations are carried out and at the end of the activity, measurements are made to determine the changes achieved from each activity given to the child. Based on a series of activities carried out in learning with game models, the purpose of all these activities is to develop the creativity of early childhood. The indicators of achievement in the implementation of the creative game models are the same for each activity. Similarly, the method and time used in each activity are the same; namely, the method of performance with a duration of 35 minutes and presented at the core



activities as contained in the learning plan. The things that differentiate in each activity are themes and sub-themes. The scenario of learning activities is a description of the syntax or stages of the game model implementation.

The following is an operational description or implementation of game model learning in developing children's creativity. The first one plays bubbles from a mixture of water, soap, sugar, salt and food colouring. The learning theme chosen in this game is the theme of the need with the water subtema. In this activity, the level of achievement to develop children's creativity through cognitive aspects is to complete a simple experiment. The indicator shows activities that are exploratory and probing (such as, what happens when water is spilled).

The way to learn in 'playing bubbles' is: showing and mentioning the tools and materials prepared by the teacher; mentioning the names of tools and materials; mentioning and explaining the games to be performed; providing examples of ways of playing bubbles by blowing, namely: (a) distributing plastic cups and dish soap, (b) mixing water, sugar, salt, and food colouring, (c) distributing the blower, and (d) the circle of stalks being gently blown.

d. Level of Content Validity and Practicality of Creative Games with Natural Material Media in the Development of Early Childhood Creativity at Teratai Kindergarten in Makassar City

To obtain the results of the creative game models that have been designed, it requires testing the content validity and practicality of the creative game models in order to develop early childhood creativity. Before being used in learning activities, they must have valid qualifications. Ideally, a learning developer with a game model needs to do a re-examination of experts (validators) regarding the accuracy of the content, learning material, conformity with learning objectives, physical design, etc., to obtain a good evaluation by the validator. The validation process is expected to provide a valid or very valid assessment of the creative game model design with natural material media so that it can be used for the learning process in the nuances of play. If learning a creative game model with natural material media is not yet valid, then validation will continue until a valid assessment is obtained.

The process of the validation series in this study was carried out simultaneously with the validator who had recommendations and was able to provide input and suggestions to improve the design of the creative game models with prepared natural media. Suggestions from the validator will be used as material to revise the creative game model with natural material media that is being developed.



Validators, in this case, provide an assessment to determine whether the creative game development model with the developed natural media and the existing learning tools is said to be valid, so that it can be used as a learning model oriented to the development of children's creativity.

This validation activity also produces an assessment of the practicality of the development model of creative games with natural material media which aims to determine whether this creative game model is used practically for learning. Creative game models with natural material media are said to be practical if the validator states that the model is feasible to use without revisions or slight revisions. The revision of the design of the creative game development model with natural material media is based on the suggestions given by the validator when validation is carried out, so it can produce creative game models with appropriate natural material media in the learning process. The experiments of the creative game models with natural material media that have been carried out by the researchers obtained data about the teacher responses to children's creativity development learning through game models and data in the form of child learning developments that have been carried out by Group B children at the Teratai Kindergarten in Makassar City.

CONCLUSION

Based on the various approaches in the development of this model, it can be concluded that the form of creative game design with natural media for early childhood consists of two components. Namely, the model philosophy component, including the rationality of the model, objectives, teacher roles and system support, while the operational components of the model are detailed in all types of activities with various themes or sub-themes. All the activities are packaged with the aim of developing children's creativity.

The level of content validity and practicality of creative games with natural material media for early childhood at Teratai Kindergarten in Makassar City shows that the validator ratings of all devices presented can be declared valid for use, and that game models with natural media in developing children's creativity have met the practical criteria. The next researcher is expected to be able to conduct research not only to examine aspects of the development of creativity, but also to conduct research on other aspects of development, such as social and emotional development and this research can be followed up because it has not arrived at the evaluation stage of the development results.



Table 1. Creativity of Group B in Creative Games with Natural Media at the Makassar Lotus Kindergarten

No	Indicator	Number of children	Percentage (%)
1.	Play bubbles from a mixture of water, soap, salt, sugar, and colouring	3	42.85%
2.	Arranging mango leaves using a stick becomes a crown shape	2	28.57%
3.	Playing wet sand	2	28.57%
Total		7	100%

Source: Results of the study, 2018.



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