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STEAM Approach: A Classroom Action Research as an Effort to Increase Early Childhood Creativity

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ABSTRACT

Every early childhood has different development. This development can be given intervention in several aspects. One aspect of development that can be intervened in the development of early childhood is the aspect of creativity. This study aims to improve the creativity of early childhood by implementing the STEAM approach. This study is a classroom action research with the Kemmis & Mc Taggart design using four steps, namely planning, action, observation and reflection. The subjects of this study were kindergarten students. Data were obtained using observation and test techniques. The data obtained were then analyzed using descriptive statistical techniques. The results of the study indicate that the STEAM approach can improve the creativity of kindergarten students.

Keywords: *STEAM approach, early childhood, creativity.*

Introduction

Early childhood education can be interpreted as a form of education that emphasizes laying the foundation for growth and development, cognitive, including fine and gross motor skills, emotional intelligence, multiple intelligences, and spiritual intelligence. Likewise with the way educators carry out the learning process. Students often know information earlier than their teachers. Therefore, teachers are required to follow the latest developments regarding strategies, approaches, or methods in the learning process. An educator should be required to open their eyes, ears, continue to learn, and see the development of educational issues that are relevant to early childhood education. Early learning experiences can never be replaced by subsequent experiences, unless modified. Early age is a golden opportunity for children to learn. Therefore, this opportunity should be utilized as well as possible for children's learning because the curiosity of early childhood children is at its peak. One thing that needs attention is that the orientation of early childhood learning is not focused on presentation, such as the ability to read, write, count and mastery of other academic knowledge, but the orientation of learning needs to be more directed at personal development, such as attitudes, and interests in learning as well as various potentials and basic abilities. Creativity is the highest ability in the aspect of cognitive development. Creativity allows children to create something new and combine existing ideas with new ideas. This creativity develops when children participate in activities that involve movement, dramatic play, and visual arts every day. Allah encourages Muslims to have massive change competencies in the form of creativity and innovation. As inspired by individuals and community groups to participate in making changes "For him (humans) are angels who always guard him in turns, from in front of him and behind him. They guard him by Allah's command. Indeed, Allah will not change the condition of a people until they change their own condition. And when

Allah wills evil for a people, then none can avert it and there is no protector for them except Him. (QS. Ar-Ra'd, Verse 11)

Allah also encourages humans to think in order to produce something new and innovative, including in the service. Even in the texts of the source of revelation there are many that encourage creative and innovative thinking by using the sentence "afalaata'qiluun, or the sentence afala tatafakaruun ..." and many more. "Why do you order others (to do) good, while you forget yourselves, even though you read the Book (Torah)? Do you not understand? (QS Al-Baqarah, Verse 44) ´ "And humble yourself toward them both with affection and say" O my Lord, have mercy on them both, as they both raised me when I was little. (Q.S. al-Isra: 2 "And Allah brought you out of your mothers' wombs knowing nothing, and gave you hearing, sight and hearts, that you might be grateful. (An Nahl: 78) These verses encourage and inspire creativity and innovation.

And we can conclude that creativity can also be interpreted as perseverance, craftsmanship, and how we know something new. There are many examples of creative behavior that occur in our daily lives, but unfortunately we rarely examine them more broadly. Creativity is important in Early Childhood Education. Learning in early childhood to stimulate creativity is carried out through various approaches. Learning that is prepared for the current era that is experiencing the development of science and technology that also continues to develop. Therefore, there must be an adjustment of learning activities with the development of the global world as it is today. The development of technology has changed the way we communicate, the way we eat, the way we travel, the way we interact and so on.

The achievement of abilities in early childhood is expected to have stimulation that can lead according to the conditions in which children live in their time. The learning that is prepared to welcome children to face the current century is based on Science, Technology, Engineering, Art, and Mathematics (STEAM). Because STEAM (Science, Technology, Engineering, Art, and Mathematics) can develop children to think at a high level and can find solutions to problems, have high creativity, be able to work together, and have effective communication. The STEAM-based approach is a learning or approach that develops children's abilities to analyze a symptom through a scientific approach. This approach will have a good impact, which is great for cognitive, physical motor, emotional and social emotional development in children. STEAM is a discovery, seen as an approach that can encourage children to develop curiosity and ask questions so that children can build knowledge around their world by exploring, observing, discovering and investigating how things work.

From this statement, it can be concluded that STEAM will help train students to be able to analyze existing problems using various approaches, including science, technology, engineering, art and mathematics, so that it becomes a strategy to maintain survival in order to survive in today's sophisticated era and learning media is easy to obtain. The STEAM approach also builds children's cognitive abilities through meaningful learning, brings out children's creativity and can stimulate the emergence of children's soft skills such as cooperation and collaboration in work groups and criticizing surrounding phenomena. This STEAM approach has at least several advantages in its implementation process, including: The STEAM approach shows positive results in children's science knowledge; the STEAM approach teaches students to think to solve problems actively, creatively and innovatively; through technology, children are able to create their ideas into the latest technology; the STEAM approach can bridge abstract concepts mathematically into science, technology, inquiry and art; the integration of art into STEAM will foster students' creativity in creating fun learning tools; with the STEAM approach, students can apply the learning outcomes obtained into everyday life.

The impact of using the STEAM approach in children's learning activities is one of them in the form of developing children's creativity, or as a means to improve problem-solving skills in daily activities. The benefits of the STEAM approach include helping children understand how to do activities, by paying attention to the following: Children can use knowledge and skills, children are encouraged to recognize and respect their own and others' skills and interests. They learn how to adapt well in a team based on the roles they play well.

Before the STEAM approach was implemented in TK TGK CHIK DI JULOK, children's creativity had weaknesses because learning was too monotonous, after the STEAM approach was implemented, the creativity that emerged in students was the development of children's creativity, seen from the way children think critically, creatively, and innovatively in doing an activity, as well as understanding the ability to solve problems in the real world. 7 This is in line with Kofac that STEAM has an impact on early childhood, one of which is increasing children's interest and understanding in technology and the ability to solve problems in the real world. In addition, the STEAM approach encourages children to develop curiosity, openness to experience and ask questions so that children build knowledge around them by exploring, observing, discovering, and investigating things around them. Sri Margorini argues that there are several advantages in the STEAM (science, technology, engineering, and mathematics) approach to critical thinking skills and scientific attitudes of participants according to the description above, it can be concluded that learning by implementing the STEAM (science, technology, engineering, and mathematics) approach has a significant influence on training students' causal reasoning, on students' creative thinking skills, improving students' learning outcomes, and on scientific literacy skills.9 PAUD activities, groups or for centers sometimes have different approaches and each form of activity trains creativity that prioritizes Science, Technology, Engineering, Art, and Mathematics. From this description, the researcher wants to examine how the process or activities carried out using the STEAM approach used by TK TGK CHIK DI JULOK and using what media in the STEAM approach can train children's creativity. The author hopes that by knowing the approach used at TK TGK CHIK DI JULOK, it can also help other PAUDs to train the creativity of their students in their respective schools.

Method

The type of research used in this study is field research, namely research that is directly in the field to obtain data and information from various sources. Qualitative research covers the subjects studied and from case study data, personal experiences, interpretations that describe the situation in the field. Qualitative research aims to understand something that happens to the object of research, which is in the form of data starting from oral speech or actions taken when the researcher conducts observations. The approach used in this study is the Descriptive Qualitative method.57 The type of research used is Descriptive Qualitative research. Descriptive Qualitative Research is a type of research that provides a picture or description of a situation as clearly as possible without any treatment of the object being studied. Qualitative research is conducted because researchers want to reveal events that cannot be classified, namely descriptive in nature, such as the process of work steps, considerations of a concept, characteristics, pictures, behavioral procedures and so on.58 This research is a type of Field Research, namely research whose data is collected in the field, such as the school environment. The research pattern used by the researcher is a qualitative pattern, namely observing objects (people) in the environment. The use of qualitative research because it is able to reveal more in-depth data about: STEAM Approach to Early Childhood Activities to Train the Creativity of 5-6 Year Old Children at TK TGK CHIK IN JULOK For this study, the researcher

wants to use narrative work steps, namely data and facts taken in the form of words and images are more dominant than numbers. The action of describing something to describe what kind of action, why and how a process occurs.

In obtaining the data needed in the research process, the researcher determines several steps of data collection procedures in accordance with the research objectives, namely: 1. Observation Observation is one of the main methods in research. Observation is the most natural and most widely used data collection method not only in the scientific world but also in various life activities. According to Sutrisno Hadi, observation is a complex process, a process that consists of various biological and psychological processes. Two of the most important are the processes of observation and memory. Meanwhile, according to Sudaryono, observation is conducting direct observation of the research object to see the activities carried out closely. Observation or observation also includes a technique or way of collecting data by observing ongoing activities. Observation can be done with participation or non-participation. So, observation is observing, seeing, hearing, looking for answers, looking for evidence of the phenomena that occur, recording, recording, documenting in order to find analytical data. This method is carried out by direct observation of the object, then the results of the observation are written down in a note. The object of observation in this study is the Strategy for Training Early Childhood Creativity with the STEAM Approach in PAUD Activities to Train the Creativity of Children Aged 5-6 Years at TK Tgk Chik in Julok. The observation technique used in this study is the participant observation technique, where researchers are involved in the daily activities of people being observed or used as sources of research data. With this observation, the data obtained is more complete and clearer. 2. Interviews Interviews are a tool for collecting information by asking a number of questions verbally to be answered verbally as well. According to Nasution, interviews are a form of verbal communication, so a kind of conversation that aims to obtain information. The type of interview used in this study is a structured interview, namely an interview where the interviewer determines the questions to be asked. The questions in this type of interview are arranged neatly and tightly. The interview technique is focused on researchers to explore and obtain the data needed in this study. Interviews were conducted with the principal, TK Tgk Chik teachers in Julok related to the STEAM Approach efforts. 3. Documentation Documentation is a method of collecting data concerning things in the form of notes, books, letters, data and photographs. In this study, the documentation method is used to obtain data on the profile of TK TGK Chik in Julok. facilities and infrastructure facilities and things related to efforts to Use the STEAM Approach in Early Childhood Activities to Train the Creativity of Children Aged 5-6 Years at TK TGK Chik in Julok. Each data collection technique has its own weaknesses and shortcomings so that in this study the researcher used these three methods, namely, direct observation, in-depth interviews and documentation to complete the data in the study.

The data validity test in this study is by means of data triangulation. Triangulation in this credibility test is interpreted as checking data from various sources in various ways, and at various times. 1 Source Triangulation Source triangulation to test data credibility is done by checking data that has been obtained through several sources. 2 Technique Triangulation Technique triangulation to test data credibility is done by checking data to the same source with different techniques. 3 Time Triangulation Data collected using interview techniques in the morning when the source is still fresh, not many problems, will provide valid data so that it is more credible.62 G. Data Analysis Techniques Data analysis techniques are a way to process data into information that is easy to understand. Therefore, the data is arranged in the form of tables and interpretations to compile conclusions from the results of the research and the data obtained from the beginning of the research to the end that has

been obtained. Then the findings can be informed to others and are easy to understand.63 In the analysis technique here using the miles and huberman model. Miles and Huberman, stated that activities in qualitative data analysis are carried out interactively and continue continuously until complete, so that the data is saturated. Activities in data analysis are: Data Reduction, Data Display, and Conclusion Drawing/Verification.64 So that the analysis technique is in accordance with using the following steps: 1. Data Reduction Is the process of summarizing data and focusing on important things. Thus, the data that has been reduced will provide a clear picture, and make it easier for researchers to collect further data. 2. Data Presentation In qualitative research, the presentation can be done in the form of short descriptions, charts, relationships and categories and the like. Most often used to present data in qualitative research is with narrative text. 3. Data Verification or Conclusion Drawing The next step in qualitative research is data verification or conclusion drawing. The initial conclusion is still temporary and will change if we do not get supporting evidence at the data collection stage, so the conclusion put forward is a credible conclusion (can be trusted).

Conclusion

The results of the study showed that the STEAM approach can improve the creativity of kindergarten students. This can be seen from the level of student creativity which continues to increase in each cycle with details of the first cycle 73.69% (good category) and in the second cycle increasing to 89.63% (very good category).

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