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THE 3rd INTERNATIONAL CONFERENCE OF HUMANITIES AND SOCIAL SCIENCE
Examining Socio-Cultural Problems, Language, Literature, and Art to Uplift
The Nation's Civilization

APPLICATION OF THE PROJECT BASED LEARNING MODEL IN IMPROVING NUMERIC LITERACY IN EARLY CHILDREN

Sri Widhiyanti[1], Rohyati[2], Isti Pujiati[3], Sholikatun Nurul[4], Santi Kurniasih[5]
{yanti.lgikeu@gmail.com[1], iiyrohyti13@gmail.com[2], istipujiati97@gmail.com[3],
nurulsholikhatun94@gmail.com[4], santikurniasih374@gmail.com[5]}

MPIAUD, UIN Prof KH Saifuddin Zuhri, Indonesia

Abstract. Each individual in early childhood has a different way of learning and as an educator it is very important to find the right teaching method. Apart from that, consistency in improving numerical literacy in early childhood is very important. Using a variety of teaching methods regularly and encouraging and praising children as they make progress can help improve children's numerical literacy significantly. The aim of this research is to determine the cultivation of numerical literacy in early childhood using a project based learning model through market day activities. This research uses a type of field research . From this research it was found that the project based learning method through market day activities can be applied to instill numerical literacy learning in early childhood because project based learning emphasizes the process of solving a problem. Apart from that, children gain something valuable from what they experience by actively participating in working on projects.

Keywords: Early Childhood, Project Based Learning, Numerical Literacy

INTRODUCTION

Learning models for early childhood require a special approach that is different compared to learning models for older children. This is because young children learn to build their knowledge voluntarily, in contrast to older children who build their knowledge out of self-awareness or out of necessity . The learning model that is suitable to be applied to early childhood is using the concept of play, meaning that the learning process for early childhood is carried out in a fun way, without coercion, but can optimize the development process in early childhood through the stimulation provided during the playing process. One of the important developments in early childhood that needs to be stimulated is cognitive development or thinking power. Various ways to develop cognitive abilities include numeracy which is based on two social and mathematical aspects. The social aspect aims to be used in society, while the mathematical aspect includes carrying out arithmetic operations, namely addition, subtraction, multiplication and division (Megawati, 2020). This numeracy literacy ability, which is also the ability to count, can be used to solve problems related to mathematics in everyday life.

Numeracy ability is not enough just to master mathematical calculations, because numeracy also includes a person's skills in applying mathematical concepts in real, everyday life. Sometimes we encounter problems found in everyday life that are not structured so that there are many ways to solve them or even no solutions at all and are related to non-mathematical factors (Kemendikbudristek, 2021). For example, a teacher wants to take 12 of his students on an excursion using a car, each car containing 9 children. If, using a mathematical approach, divide 12 by 9, you get the number 1.33 which is rounded down to just 1 car. This does not happen if we understand it through a numeracy approach, which means that the teacher must still use 2 cars to be able to take his students on excursions.

Numerical literacy is more inclined to a person's ability to understand, use and convey information related to numbers and mathematics which is implemented in everyday life. This numerical literacy becomes very important when someone makes decisions and solves problems . Numerical literacy is a person's ability to understand, use and interpret numbers and mathematical operations in everyday life. These abilities include the application of mathematical concepts such as addition, subtraction, multiplication, and division. Numerical literacy is important to help someone

make decisions related to numbers and data, such as purchases, investments, or other financial decisions (Wahyuni, 2022). Numerical literacy is very important to develop in the curriculum and learning activities in schools and other educational institutions. Apart from school, the role of parents is also no less important in increasing the numerical literacy of young children by familiarizing them with activities that contain elements of numbers and mathematics in daily life, for example by inviting them to count their pocket money, buy goods or organize their daily schedule. . By strengthening children's numerical literacy from an early age, it is hoped that they will be able to face challenges that require understanding and also numbers in their future (Kemendikbudristek, 2021).

There are various methods to stimulate the growth of numerical literacy in preschool children, involving interesting games and activities that focus on solving mathematical problems in everyday life. One effective way to increase numerical literacy in children is through learning activities through play, which can be done both at school and at home. According to research by Watini (2022), the giant snakes and ladders game which uses the ATIK (Observe, Imitate, Do) approach where children learn numeracy while playing, has been proven to improve the numerical literacy skills of preschool children. Apart from games, fun activities can also help the development of numerical literacy in preschool children. Ratnasari (2020) shows that outdoor learning activities have a significant impact on numerical literacy in preschool children, because the outdoor learning experience itself is interesting, creative, challenging and memorable throughout life. The impact of role playing on the introduction of literacy in preschool children was also studied by Yulianti (2019). Role playing in this research was carried out by selling fruit, each child played the role of seller or buyer and the children were challenged to imitate the behavior in that situation.

Project Based Learning is a learning approach that uses projects or activities as media. This approach has several characteristics, such as 1) guiding children to make decisions and structure children's work, 2) presenting problems or questions that need to be resolved, 3) guiding children in designing processes to achieve set goals, 4) giving responsibility to each child to collect and organize information to complete their projects, 5) encourage children to conduct ongoing evaluations, 6) encourage children to regularly reflect on their work, 7) the end goal is for children to produce a product and have its quality evaluated, and 8) the classroom environment must be supports change and does not make children feel afraid of making mistakes. This learning model does not only focus on the final result, but more on the process of how children can solve problems and ultimately produce new products. This approach gives children valuable experience by actively participating in project completion. This is clearly more challenging than just sitting and listening to the teacher's explanation or reading a book and then taking a quiz or test (Ningsih, 2022). In similar research conducted by Yulianti (2019), researchers used project based learning in the form of market days to improve numerical literacy skills in early childhood.

RESEARCH METHOD

The research method used uses a descriptive qualitative approach using field research. Descriptive qualitative methods were used to collect comprehensive data in line with the research questions, with the aim of characterizing market day activities that promote the development of numerical literacy in early childhood. Field research is a method used to collect comprehensive and detailed information, including direct quotations, relating to factual data found in the field. Field research refers to the systematic investigation of an object, condition, or event over a certain period of time by a person. This research uses the triangulation method as a data collection technique, which involves cross-checking data from various sources, using various methods, and at different points in time. This approach is widely recognized as a valuable way to increase the validity and reliability of research findings. This process involves re-evaluating data obtained from a particular source at a later date or cross-checking it with information originating from alternative sources.

RESULT AND ANALYSIS

The acquisition of numeracy literacy is widely considered to be a very important skill for students to achieve, as noted by Meliyanti et al. (2021). In order to effectively instill numeracy literacy in young children, an environment full of patience and positivity needs to be developed. One promising pedagogical approach in this regard is project-based learning. Khoiru Ummah PAUD applies a project-based learning approach through market day activities, which involve a series of stages, namely planning, implementation and evaluation. Implementing project-based learning through market day activities at PAUD Khoiru Ummah requires a comprehensive approach that involves students in all stages of the process, including preparation, implementation and completion. Engaging in these specific activities has been proven to have a beneficial effect on a child's holistic development, which includes various domains such as cognitive, socio-emotional, language, arts, physical motor skills, as well as religious and moral values. Before the event took place, educators and students collaborated to make decoration materials for the stands that would be used in the market day celebration. Next, the participants deliberated about the merchandise that would be offered for sale and provided guidance and clarification to the students regarding the protocol for carrying out the market day process. Educators invite students to make toy currency in the form of circular cutouts from recycled cardboard. The play money coins are then assigned the numbers 1, 5, and 10. Children are given the freedom to make an unlimited number of play money coins. These coins are then accumulated and counted by the children before being put into a container, which is then handed over to the instructor. Next, the teacher will notify the students' parents or guardians to provide the merchandise that has been determined for the market day event . At that time, parents and their children will work together to make and assemble goods to be marketed from their respective homes. It is noteworthy that educators, students and parents are involved in promotional efforts aimed at the local community to increase awareness of the market day event in the hope that community members will attend and purchase the goods and services offered.

Picture 1. Market Day Activities

On the appointed day, market day activities ran as expected. All students become sellers by selling at their respective sales stands. Visitors who want to buy merchandise at this market day activity are required to exchange their shopping money for play coins that the students have previously made. Coin exchange is labeled 1 for one thousand rupiah, 2 for 2 thousand rupiah, 5 for five thousand rupiah and 10 for 10 thousand rupiah. All products sold in this market day activity can only be purchased with these toy coins. Buyers at this market day activity include the local community, parents of students and also the students themselves. At the end of this market day activity , students will count the number of play money coins they have collected from selling, then these play money coins can be exchanged with their teacher for real money with the same value as when exchanged at the start of the activity.

In this market day activity , students are introduced to calculating the total price of the goods to be sold, then the number of all goods that have been sold, and calculating how much profit they will make. So learning numerical literacy is not only about learning the concept, but by practicing it directly through the project based learning method through market day activities.

CONCLUSION

In helping young children learn mathematics, it is important to pay attention to their needs and help them build a strong foundation in numerical literacy from an early age. In the learning process, don't forget to provide positive reinforcement and fun so that children feel involved and find it easier to understand mathematical concepts. Provide support and encouragement to acquire numerical literacy skills by providing time and patience in learning.

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