The Effect of Educational Block Games on Children's Fine Motor Skills at RA Al Rizky Padang Sidempuan

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Abstract
This study aims to determine the effect of educational block games on the improvement of fine motor skills in early childhood at RA Al Rizky Padang Sidempuan. The research uses a quantitative approach with a pre-experimental design of the One-Group Pretest-Posttest Design. The study subjects amounted to 14 children aged 5–6 years who were selected through saturated sampling techniques. Data collection was carried out through observation using observation sheet instruments, then analyzed with the Wilcoxon test using the help of SPSS software.The results showed that there was a significant difference between pretest and posttest scores after children participated in block play activities. The improvement can be seen in the aspects of grasping skills, arranging, eye and hand coordination, and children's concentration in completing tasks. These findings show that block games are able to provide positive stimulation to children's fine motor development. Therefore, the block educational game deserves to be used as one of the effective learning methods to be applied in early childhood educational institutions and in the family environment.

Keywords: Educational Block Games, Fine Motor Skills, Early Childhood, RA Al Rizky Padang Sidempuan, Pre-Experimental Design, One-Group Pretest-Posttest Design, Hand-Eye Coordination, Child Development Stimulation

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https://proceeding.pancabudi.ac.id/index.php/GIE

Introduction

One of the developmental aspects that needs to be considered is motor skills, especially fine motor skills. Fine motor development is one of the important aspects in early childhood growth and development. These skills include skills such as grasping, writing, drawing, and using tableware and stationery. The importance of fine motor stimulation at an early age has been recognized in various national education policies, including in the Regulation of the Minister of National Education of the Republic of Indonesia Number 58 of 2009 concerning Early Childhood Education Standards. Early Childhood Education is an education that is organized with the aim of facilitating the growth and development of children as a whole that emphasizes the development of all aspects of children's personalities (Syamsuddin et al., 2012) (Zannatunnisya et al., 2024).

Classically designed block games have an important role in supporting and improving the development of fine motor skills in children, especially at an early age. Fine motor skills themselves are the ability control small muscles in parts of the body, such as the hands and fingers, which are very influential in the child's daily activities. This skill is important because it is the basis for various tasks such as writing, drawing, buttoning, and using cutlery. At preschool age, stimulation of fine motor skills needs to be given optimally so that children can develop in a balanced manner and be ready to enter more complex learning stages in the future.

Block games are included in the category of educational games because they not only provide entertainment, but also stimulate various aspects of children's development, ranging from cognitive abilities, creativity, to social and emotional aspects. In block play activities, children carry out various activities such as picking, holding, arranging, and arranging blocks that have different shapes, sizes, and colors. These activities directly require children to coordinate hand and finger movements in a precise and controlled manner, so that they can train and strengthen their fine motor skills effectively.

The link between block play and fine motor development is very close, because in the process of arranging blocks, children must arrange their fingers and hands with precision so that the arrangement of blocks can stand firmly and according to the desired pattern. This process also requires eye and hand coordination, high concentration, and patience. Thus, playing blocks not only trains physically, but also helps children develop cognitive and emotional skills, such as problem-solving and perseverance.

Fine motor skills are abilities related to physical skills that involve small muscles and eye-hand coordination. These fine motor nerves can be trained and developed through regular continuous activities and stimuli. Such as, playing puzzles, arranging blocks, putting objects into holes according to their shape, making lines, folding paper and so on (Nofianti, 2020). There are four aspects of urgency of fine motor development in children, namely social aspects, academic aspects, vocational/work aspects, and psychological aspects. The social aspect includes daily activities such as eating, dressing, and cleaning oneself. (Nofianti et al., 2021)

However, not all children can develop fine motor skills optimally. There are several factors that can hinder children's fine motor development, such as lack of opportunities to explore the environment, overprotective parenting, and lack of learning stimuli (Munisa et al., 2021). Some of the factors that can affect this development include lack of proper stimulation, limited facilities and infrastructure, and lack of understanding of parents and educators regarding the importance of fine motor stimulation.

According to Saraswati and Utami (2023), children's fine motor development needs to be stimulated according to the needs and age of the child. One effective approach to stimulate fine motor development is through educational games, specifically block games. Block games allow children to perform activities such as composing, assembling, and building structures, which directly involve fine motor skills. Various studies have shown that the use of block play media can improve children's fine motor skills.

It can be concluded that educational block games have a real positive impact on the development of children's fine motor skills. As an effort to optimize this development, educators and parents need to provide adequate time and space for children to play blocks regularly and in a directed manner. In this way, children not only get a fun play experience, but also get essential developmental stimulation to support their overall motor skills.

For example, research by Azni and Sandi (2020) showed that the use of stacking block game media had a significant effect on the fine motor skills of grade I elementary school students, with a significance value of 0.000 which was smaller than 0.05, and an R square of 88.6%.

In addition, Fauziddin (2016) in his research also found that the application of learning through playing unit blocks can significantly improve fine motor development in early childhood, with a p-value of 0.000 which shows a strong positive influence

Similar research by Adawiyah and Windasari (2020) shows that the game of stacking textured blocks can improve children's fine motor skills group A at PAUD Al-Firdaus, with a percentage increase of 80.2% after two implementation cycles.

Although there is a lot of research that supports the effectiveness of block games in improving children's fine motor skills, there are still gaps in its implementation in various educational institutions, including at RA Al Rizky Padang Sidempuan. This can be due to various factors, such as limited resources, lack of training for educators, or lack of understanding of the importance of fine motor stimulation through educational play.

Therefore, this study is important to be conducted to explore and empirically measure the influence of educational block games on children's fine motor skills at RA Al Rizky Padang Sidempuan. The results of this study are expected to provide practical recommendations for educators and parents in supporting children's fine motor development through fun and effective educational games.

Research Methods

This type of research uses a quantitative research method with a type of pre-experimental research design, This experimental research is a process of collecting information about the consequences of an action or treatment. The research design used the "One-Group Pretest-Postest Design" which is a group of experiments that are measured for the free variables and then given treatment and re-measured variable dependent (post test) (Sugiyono, 2015). This research took place at RA Al Rizky Padang Sidempuan. The population in this study is all early childhood children in Group B aged 5-6 years. The sample in this study was 14 children.

The technique used is the sampling technique, which is saturated sampling with research procedures starting with a pretest as an effort to find out the initial state of the research then given treatment by applying block game activities to children and then re-measuring the dependent variables through the final test (postets). The instrument used is an observation instrument. Data analysis techniques in this study with observations carried out using Observation. Data processing is carried out using the SPSS application after the data is obtained and then the data is analyzed. Next, the researcher conducted a hypothesis test using the wicoxon test. This hypothesis test was carried out to find out if there was a significant difference in children's block playing skills before and after Learning using block games that children do before and after the activity is carried out.

Results and Discussion

3.1 Research Results

Based on the results of the research, it can be concluded that the use of educational block games has a significant influence on the improvement of fine motor skills in early childhood at RA Al Rizky Padang Sidempuan. This study uses a quantitative approach with a pre-

experimental design of the One-Group Pretest-Posttest Design, where one group of children is tested before and after being given treatment. One group of children was tested before and after the treatment. The subjects of the study were 14 children from group B aged 5–6 years, and the entire population was sampled through saturated sampling techniques due to the limited number of children.

At the beginning of the study, a preliminary measurement was carried out to determine the level of the child's fine motor ability before being given treatment. This measurement uses an observation sheet that includes several indicators such as the ability to arrange and group blocks, strength in grasping, and coordination of eye and hand movements. After that, the children were given treatment in the form of block play activities during several meetings. The activities carried out include arranging the blocks into various shapes, combining the colors and sizes of the blocks, and forming imaginative buildings that involve cooperation and concentration.

After all treatment sessions were completed, the child was again given a final measurement (posttest) with the same instrument. All pretest and posttest data were analyzed using the SPSS program with the Wilcoxon Signed Rank test technique. The results of the analysis showed that there was a significant difference between the pretest and posttest results, where the significance value obtained was below the threshold of 0.05. Ini indicates that there is a significant improvement in children's fine motor skills after participating in educational block play activities.

This improvement can be seen from the development of children's skills in terms of composing, grasping, and coordinating movements between hands and eyes. Children who initially had difficulties in these activities became more skilled, focused, and confident in arranging blocks. In addition to physical ability, the aspect of concentration and endurance of children in completing tasks also shows positive progress. Children look more diligent, do not give up quickly, and are able to solve more complex forms than before.

The results obtained are in line with several previous studies. Findings from Azni and Sandi (2020) show that the use of stacking block media has a significant positive impact on the fine motor skills of elementary school students. Meanwhile, Fauziddin (2016) also found that unit block play activities are very influential in encouraging the development of early childhood motor skills. The research by Adawiyah and Windasari (2020) found that textured block games were able to dramatically improve children's fine motor skills after two cycles of implementation.

Block games give children the opportunity to practice controlling the small muscles needed in daily activities such as writing, drawing, or using cutlery. In addition, this game encourages children to think creatively, make decisions in arranging shapes, and practice solving problems independently. Fun play activities also trigger children to be more emotionally and socially involved, as they often work together and discuss with their peers when playing blocks in groups.

Discussion

Teachers have an important role to play in the success of this process. In this study, teachers play the role of companions who not only supervise play activities, but also provide direct guidance and support. Varied activity designs and supportive learning environments contribute to the optimization of children's learning processes. The active involvement of teachers has a positive influence on the achievement of maximum learning outcomes.

However, there are some limitations in this study. The absence of a comparison (control) group meant that researchers could not be completely sure that the improvement occurred solely as a result of treatment. In addition, the relatively small number of subjects also limits the generalization of results. Therefore, it is recommended that further research use

experimental designs with two groups and involve more participants, as well as compare block games with other forms of educational play such as origami or puzzles.

Even so, the findings of this study still make a significant contribution to early childhood education practices. Educational block games have proven to be an effective and fun medium in improving children's fine motor skills. Early childhood education institutions should make this kind of game part of their regular learning activities. In addition, parents can also play a role in stimulating children's motor skills at home by providing appropriate games and supporting their growth and development optimally.

4.1 Improvement of fine motor skills through block play

A child's fine motor skills are related to the skills of using small muscles, especially the hands and fingers, which are necessary in activities such as grasping, composing, writing, and drawing. In this study, block play was used as a stimulation medium that demanded direct and active involvement of fine movements.

The results of the posttest showed an improvement in children's skills in structuring blocks precisely, coordinating hand and eye movements, and maintaining focus in completing tasks. Children who were previously bored quickly or had difficulty grasping blocks now become more skilled, diligent, and confident when doing activities.

4.2 Educational Function of Block Games

Block games are not only recreational, but also educational. Children are trained to:

1. Grouping the shape and color of the beams,
2. Designing imaginative building structures,
3. Developing spatial logic and problem-solving,
4. Practice concentration and cooperation when playing in groups. These activities stimulate cognitive development as well as practice physical coordination, making block games an effective holistic approach in supporting early childhood growth and development.

4.3 The Role of Teachers and the Learning Environment

In the process of implementing the block game, teachers play the role of active facilitators. Teachers not only provide game media, but also provide clear instruction, individualized guidance, and motivation that support children in trying and exploring.

A safe, fun, and open learning environment is also a supporting factor for the success of fine motor stimulation. Children are given the freedom to express themselves without fear of being wrong, which ultimately increases their confidence in trying out different forms of block arrays.

Research Limitations and Implications

Although the results showed a significant impact, there were some limitations, such as the absence of a control group and a limited number of subjects. Therefore, generalization of results needs to be done carefully.

Nevertheless, this research makes an important contribution to early childhood education practice. Block games can be used as part of a fun and effective learning strategy, both at school and at home. The involvement of parents and teachers in accompanying children to play blocks can significantly improve the quality of motor development stimulation.

Conclusion

The application of the block educational game has a real effect on improving fine motor skills in early childhood at RA Al Rizky Padang Sidempuan. Children showed significant

development after participating in a series of block play activities, especially in the aspects of grasping, arranging, and coordinating movements between eyes and hands. In addition to physical skills, improvements are also seen in the child's ability to concentrate, persevere in completing tasks, and show confidence during the play process.

This study supports previous findings that educational games, especially block games, are effective in stimulating aspects of children's motor development. This activity is not only recreative, but also provides educational benefits that can support the child's overall learning process. Therefore, block games need to be part of the learning strategy in PAUD institutions, and can also be applied at home as a form of assistance for children's development that is fun and useful.

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