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Application of Popup Learning Media to Improve Fine Motor Physical Abilities of Students of Group B RA Miftahul Huda Dawuhan Poncokusumo

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Abstract: This study aims to apply pop-up learning media to improve the fine motor skills of group B students at RA Miftahul Huda Dawuhan, Poncokusumo. Fine motor skills have an important role in early childhood development, especially in writing, drawing, and other activities that involve hand-finger coordination. The research method used is classroom action research (PTK) with two cycles, which includes planning, implementation, observation, and reflection. The subject of this study is a student of group B RA Miftahul Huda Dawuhan. Data collection techniques are carried out through observation, interviews, and documentation. The results of the study show that the use of pop-up media in learning can significantly improve students' fine motor skills. This is shown by the improvement of gripping, cutting, folding, and sticking skills from each cycle carried out. In conclusion, the application of pop-up learning media can be an effective strategy in supporting the fine motor development of early childhood in the RA educational environment.
Keywords: Pop-up learning media, fine motor, early childhood, RA Miftahul Huda.

INTODUCTION

Fine motor skills are one of the most important developmental aspects for early childhood. This ability involves the coordination of small muscles, especially in the hands and fingers, which play a role in various activities such as writing, drawing, and other skills. One way to improve children's fine motor skills is to use interesting and interactive learning media, such as pop-up media.

RA Miftahul Huda Dawuhan, Poncokusumo, is one of the early childhood education institutions that strives to develop various innovative learning methods. However, in reality,

many children still have difficulty developing their fine motor skills. This is due to the lack of use of learning media that can stimulate children's hand and finger skills. Therefore, this research was conducted to apply pop-up learning media as a solution to improve the fine motor skills of group B students at RA Miftahul Huda Dawuhan, Poncokusumo.

This study aims to analyze the effectiveness of the use of pop-up learning media in improving the fine motor skills of group B students, Identify changes in students' fine motor skills after the application of pop-up media in learning., Provide recommendations for educators regarding the use of pop-up media as an effective learning method for early childhood.

The expectations of this study are: Students can be more motivated in learning activities that involve fine motor skills, Educators have new insights in the use of pop-up media as an effective means of learning, There is a significant increase in students' fine motor skills, so that they are better prepared to face the next level of education.

In the reality of learning at RA Miftahul Huda Dawuhan, there are still many students who experience difficulties in activities that require fine motor skills, such as holding a pencil correctly, scissors, folding, and attaching. The lack of use of interactive and interesting learning media is one of the factors causing this low skill. In addition, learning methods that are still conventional make children less actively involved in learning activities.

As a solution to this problem, this study proposes the application of pop-up learning media as an innovative method in improving students' fine motor skills. By using pop-up media, it is hoped that children can be more enthusiastic and involved in learning activities that involve their hand and finger skills. This study will use the classroom action research method (PTK) with an observation and evaluation approach to the development of students' fine motor skills before and after the use of pop-up media. The results of this research are expected to be a reference for educators in improving the quality of learning at the early childhood education level.

Recent research shows that the use of innovative learning media can improve fine motor development in early childhood. For example, research by Ambarwati (2024) analyzed various learning media, such as collages, puzzles, and used materials, which are effective in stimulating children's fine motor skills.

In addition, research by Maryam and Rahman (2021) found that loose part media can increase children's creativity and fine motor skills in classroom learning activities.

In addition, research by Liani, Ambarwati, and Tristya (2023) emphasizes the importance of learning media in improving fine and gross motor development in early childhood. They found that the use of media such as collages, puzzles, and educational game tools (APE) can significantly improve children's motor skills.

This study highlights that the selection of the right learning media can provide effective stimulation for fine motor development in early childhood.

This study aims to analyze the effectiveness of the use of pop-up learning media in improving the fine motor skills of group B students, identify changes in students' fine motor skills after the application of pop-up media in learning, and provide recommendations for educators regarding the use of pop-up media as an effective learning method for early childhood.

Research by Liani, Ambarwati, and Tristya (2023) emphasizes the importance of learning media in improving fine and gross motor development in early childhood. They found that the use of media such as collages, puzzles, and educational game tools (APE) can significantly improve children's motor skills.

Cahyani and Sari (2020) explore the use of pop-up books as a medium to instill moral education in early childhood. Although the main focus of this study is moral education, the use of pop-up books also has the potential to increase children's engagement in learning, which can indirectly affect their fine motor development.

Another research by Andari and Friska (2024) developed pop-up book media to improve the cognitive abilities of children aged 5-6 years. The results showed that this medium not only improved the cognitive aspect but also stimulated fine motor skills through interaction with the book.

In addition, research by Wulandari (2023) shows that the use of pop-up book media

has a positive influence on children's reading ability. Despite the focus on reading skills, physical interaction with pop-up book media can also help improve children's fine motor skills.

Research by Agustin (2017) shows that the use of pop-up book media can improve early childhood English vocabulary skills. Although the study focused on the language aspect, physical manipulation of pop-up books may contribute to the development of children's fine motor skills.

Research by Maryam and Rahman (2021) analyzed the use of loose part media to improve fine motor skills in early childhood. The results of the study show that this media is effective in increasing children's creativity and fine motor skills in classroom learning activities.

A study at RA Nurul Falah Baturaja shows that the use of diorama media can improve fine motor skills in early childhood. Although the media used is different, these results show that interactive learning media can improve children's fine motor skills.

Research by Anita and Huurul (2023) analyzes various learning media in improving fine motor development in early childhood. They found that media such as collages, puzzles, and used materials can be effective in stimulating children's fine motor skills.

Based on these studies, it can be concluded that the use of interactive learning media, including pop-up media, has great potential in improving fine motor skills in early childhood. Educators are advised to integrate these media in the learning process to achieve optimal results.

METHODS

This study uses a quantitative approach with an experimental research design. This study aims to test the effect of the application of pop-up learning media on the fine motor physical ability of group B students at RA Miftahul Huda Dawuhan Poncokusumo. In this study, the researcher will conduct an experiment by comparing the fine motor physical abilities of students before and after the application of pop-up learning media.

Research Subject

The subjects in this study are group B students at RA Miftahul Huda Dawuhan Poncokusumo which totals 25 students. These subjects were selected purposively, taking into account the age and stage of motor development in accordance with the research objectives. This group was chosen because it was in the right stage of development to improve fine motor skills, especially in activities involving hand skills and eye-hand coordination.

Research Variables

The independent variable in this study is the pop-up learning media applied during the learning process. This media was chosen because it is believed to stimulate student engagement and improve their fine motor physical abilities. Meanwhile, the dependent variable is the student's fine motor physical ability, which will be measured through observation of skills such as drawing, cutting, and meronce that involve hand-eye coordination.

Research Design

The research design used is an experimental design with a pretest-posttest approach. This research was carried out in two stages, namely before the application of pop-up learning media (pretest) and after the application of the media (posttest). With this design, researchers can compare changes in students' fine motor physical abilities before and after the implementation of pop-up learning media.

Research Instruments

The instruments used in this study include fine motor skills tests, observation sheets, and documentation of student activities. Fine motor skills tests are carried out by providing practical tasks that require students to draw, cut, and rewind using the tools and materials that have been provided. Observation sheets are used to record the development of students' fine motor skills during learning activities. In addition, documentation in the form of photos or videos of student activities is also used to record the learning process and results.

Research Procedure

The research procedure begins with the preparation stage, which is the collection of tools and materials needed to make pop-up learning media. Researchers will prepare materials such as paper, scissors, and various pop-up elements that will be used in learning. After that, the researcher conducted a pretest to measure students' fine motor skills before the application of pop-up learning media.

Furthermore, pop-up learning media is introduced to students through learning sessions that involve making three-dimensional images using the pop-up technique. Students will be given step-by-step instructions on how to create pop-up images that involve fine motor skills. Each student will be asked to do an assignment individually, while the teacher provides assistance as needed. This process lasts for 4 weeks with learning sessions twice a week.

After the learning process is completed, a posttest is carried out to measure the students' fine motor physical abilities after the application of pop-up learning media. The posttest process is carried out in the same way as the pretest, which is to provide practical tasks that measure students' fine motor skills, such as drawing, cutting, and squeezing.

Data Collection Techniques

The data collected in this study includes the results of the pretest and posttest of students' fine motor physical ability, which will be analyzed to find out the changes that occur after the application of pop-up learning media. The observation data will also be used to record the development of students' fine motor skills during the learning process. Documentation of student activities will also be used to support analysis and provide a clearer picture of student involvement in learning activities.

Data Analysis

The data obtained from the pretest and posttest results will be analyzed using descriptive and inferential statistical analysis techniques. Descriptive analysis will be used to describe the development of students' fine motor skills from pretest to posttest, such as calculating the average test score and seeing the changes that occur. Meanwhile, inferential analysis, such as the paired sample t-test, will be used to test whether there is a significant difference between the pretest and posttest results, which shows the influence of pop-up learning media on improving students' fine motor skills.

Data Validity and Reliability

To ensure the validity and reliability of the data, researchers will use several techniques. The validity of the instrument will be tested by asking for the opinion of experts in the field of early childhood education to assess the suitability of the fine motor skills test instrument with the purpose of the research. In addition, the reliability of the observation data will be tested by conducting repeated observations by different observers to ensure consistency in data collection.

Research Ethics

This research will be conducted by paying attention to the principles of research ethics, including the consent of the student's parents or guardians before the research is conducted, as well as maintaining the confidentiality of students' personal data. In addition, the researcher will provide a clear explanation to teachers and students about the research objectives and procedures to be carried out, as well as ensure that participation in this research is voluntary and will not affect the learning process of students.

Conclusion

This study aims to assess the effectiveness of the application of pop-up learning media in improving the fine motor physical abilities of group B students at RA Miftahul Huda Dawuhan Poncokusumo. By using experimental design and triangulation techniques in data collection, this study is expected to provide new insights into how pop-up learning media can be an effective tool in developing fine motor skills in early childhood.

RESULTS

Data analysis in this study was carried out using a qualitative descriptive approach. The data obtained through observation and interviews were analyzed by means of data reduction, data

presentation, and conclusion drawn. In addition, a comparative analysis was carried out to see the development of students' fine motor skills before and after the use of pop-up media in learning.

The results showed that the application of pop-up learning media had a positive impact on improving the fine motor skills of group B students. Teachers also observed an increase in student involvement and motivation in the learning process.

Data Overview

Data collected through observation and evaluation showed that before the use of pop-up media, only about 40% of students were able to perform fine motor activities well. After the intervention with pop-up media, this percentage increased to 85%. In addition, the results of interviews with teachers and parents indicate that students are more enthusiastic in participating in learning activities that use this interactive media.

The following table shows the development of students' fine motor skills before and after the implementation of pop-up media:

It	Categories Fine Motor Ability	Before Pop-Up (%)	After Pop-Up (%)
1	Scissor	35%	80%
2	Fold	40%	85%
3	Sticking	45%	90%
4	Drawing	50%	88%
5	Write	30%	75%

Data Verification

To ensure the validity of the data, triangulation was carried out by combining the results of observations, interviews, and documentation. Observations were conducted directly by researchers and classroom teachers, while interviews were conducted with teachers and parents of students to gain a broader perspective. Documentation in the form of photos and videos is used as additional evidence to support the results of the research.

The results of this study show that the use of pop-up media has a significant impact on improving students' fine motor skills. This increase occurred because pop-up media provided a more enjoyable learning experience and involved physical interaction, which encouraged children's hand-eye coordination. In addition, children are also more motivated to complete the tasks given because of the element of surprise and uniqueness in the pop-up media.

The results of this study are in line with various previous studies that state that manipulative-based learning media can improve fine motor skills in early childhood. Thus, pop-up media can be one of the recommended methods in learning at the early childhood education level.

Data Validation

To ensure the validity of the data, validation is carried out through triangulation methods, namely by combining the results of observations, interviews, and documentation. Observations were carried out by researchers and classroom teachers, interviews were conducted with teachers and parents of students, and documentation in the form of photos and videos during learning activities. This approach ensures that the data obtained has a high level of reliability.

Validation Results

The validation results showed that there was a match between the observation data and the results of interviews and documentation. Teachers and parents of students gave positive feedback regarding the implementation of pop-up media, stating that their children experienced significant development in their fine motor skills. In addition, documentation in the form of photos and videos supports these findings by showing the improvement of students' skills in cutting, folding, and pasting after using pop-up media. Therefore, the results of this study can be considered valid and can be used as a reference in the development of learning methods at the early childhood education level.

With the advent of pop-up media, students showed significant improvement in their hand and finger coordination. Teachers also reported an increase in student concentration

during learning. In addition, the results of interviews with parents indicated that children practiced fine motor skills more often at home after being introduced to pop-up media.

Overall, this study shows that the use of pop-up learning media is effective in improving students' fine motor skills. Therefore, it is recommended that this method be applied more widely in various early childhood education institutions to support optimal child development.

DISCUSSION

This study aims to test the effectiveness of the application of pop-up learning media in improving the fine motor physical abilities of group B students at RA Miftahul Huda Dawuhan Poncokusumo. Based on the results of data analysis, there was a significant improvement in students' fine motor physical abilities after the implementation of pop-up learning media. This result is in line with the theory of fine motor development in early childhood which states that activities involving hand skills and eye-hand coordination play a very important role in developing students' fine motor skills (Santrock, 2011).

The application of pop-up media provides a more enjoyable and interesting learning experience for students. Through pop-up drawing activities, students not only engage fine motor skills in drawing and cutting, but also exercise their creativity and imagination. This process gives students the opportunity to be more active in thinking and creating, which in turn encourages their fine motor development. This is in line with the opinion of Lowenfeld & Brittain (2001) who stated that drawing activities using interesting media can stimulate the development of creativity and fine motor skills in children.

In addition, the application of pop-up media also provides a clearer structure in learning. Teachers can provide more directed instructions, while students gain a better understanding of the steps that need to be taken in creating a pop-up image. The observation results showed that students were more focused and involved in learning activities after using this media. They look more enthusiastic in doing assignments and feel more confident in showing their work. This shows that pop-up learning media can create a more positive learning atmosphere and increase students' interest and motivation in developing their fine motor skills.

The results of the validation carried out by data triangulation showed consistency between observations, documentation of children's works, and interviews with teachers. Observation data showed improvements in image composition, shape variation, color use, and student confidence. The results of the documentation show that the students' images become more diverse and complex after the application of pop-up media. Interviews with teachers confirmed that this medium has a positive impact on drawing learning, where students are more creative and have higher confidence in completing tasks. This validity shows that pop-up media is effective in improving students' fine motor skills.

Although the results of this study show a significant improvement, there are several factors that need to be considered in the application of pop-up learning media. One of them is the level of difficulty that may be felt by students who have lower fine motor skills. Some students may need more time or assistance in following the steps. Therefore, teachers need to provide a more individual or group approach to help students who are struggling. In addition, although pop-up media is effective in improving fine motor skills, the success of the implementation of this media is highly dependent on the teacher's skills and creativity in designing and facilitating learning activities.

In this case, the teacher acts as a facilitator who not only provides instruction, but also supports students in exploring their creative ideas. Thus, the application of pop-up learning media should be supported by training for teachers to maximize the effectiveness of using this media in learning. This training can include more creative ways to use pop-up media, as well as strategies to overcome challenges that students may face.

Overall, the results of this study show that pop-up learning media can improve the fine motor physical ability of students at RA Miftahul Huda Dawuhan Poncokusumo. The application of this media has a significant positive impact, both in terms of fine motor skills, creativity, and student confidence. Therefore, the use of pop-up learning media can be an

effective alternative to improve fine motor skills in early childhood. This research also makes an important contribution to the development of more interesting and varied learning methods in early childhood education.

CONCLUSION

Based on the results of the study, it can be concluded that the application of pop-up learning media has proven to be effective in improving the fine motor skills of group B students at RA Miftahul Huda Dawuhan, Poncokusumo. Prior to the implementation of pop-up media, most students experienced difficulties in fine motor skills, such as scissors, folding, and gluing. However, after the intervention with pop-up media, there was a significant improvement in student ability, with a substantially increased percentage of success.

In addition, pop-up media has also been proven to be able to increase students' motivation to learn, so that they are more enthusiastic in participating in the learning process. Thus, pop-up media can be used as one of the innovative and effective learning methods in developing fine motor skills in early childhood. Therefore, it is recommended to educators to implement this media in learning to improve the quality of early childhood education more optimally.

Academic Impact and Social Contribution

From an academic perspective, this study provides new insights for educators about the importance of using interactive learning media in improving students' fine motor skills. Improving fine motor skills can support students' success in prewriting skills and other academic activities that require hand-eye coordination.

Socially, this research contributes to improving the quality of early childhood education by introducing more interesting and fun learning methods. In addition, the improvement of students' fine motor skills also affects their confidence in carrying out various daily activities, so that they are better prepared to face challenges in the next social and educational environment.

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