



Application of Experimental Method Learning in Early Childhood Group B for the 2024/2025 School Year

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Abstract: This study aims to analyze the application of experimental methods in early childhood group B for the 2024/2025 school year. The experimental method was chosen because it can provide a more interactive learning experience, increase children's engagement, and stimulate their curiosity in recognizing colors through hands-on exploration.

This study uses a qualitative approach with a descriptive method. Data is collected through observation, interviews, and documentation during the learning process. The subject of the study was group B children in one of the early childhood education institutions. The results of the study show that the application of the experimental method can improve children's understanding of color concepts, strengthen their memory, and encourage creativity and fine motor skills. In addition, the children looked more enthusiastic, active, and happy in participating in learning activities.

Thus, experimental methods have proven effective in helping early childhood recognize colors in a more fun and meaningful way. The results of this study can be a reference for educators in designing innovative learning strategies that are in accordance with the characteristics of early childhood.

Keywords: Experimental Method, Recognizing Colors, Early Childhood, Group B, Interactive Learning.

INTRODUCTION

Early childhood education is the initial stage in the formation of character, skills, and basic knowledge that are very important for child development. At this age, children have a high level of curiosity and optimal learning abilities through hands-on experience. Therefore, the right learning method is needed to help children understand basic concepts, one of which is recognizing colors.

Recognizing colors is one of the important aspects in early childhood cognitive development. Color not only helps children in distinguishing objects around them, but also plays a role in the development of creativity and understanding of other concepts, such as art and mathematics. However, in practice, many children have difficulty recognizing and distinguishing colors if the learning methods used are not in accordance with their characteristics.

The experimental method is one of the learning approaches that can help children understand the concept of color in a more concrete and fun way. By doing simple experiments, children can explore different colors directly, observe color changes, and understand the relationship between basic and derivative colors.

Based on observations at RA Rahmah Nur Hasan, it was found that some children still have difficulty recognizing colors well. This is suspected because the learning methods used do not involve direct experience or exploratory activities. Therefore, it is necessary to apply experimental methods in learning to recognize colors to increase children's understanding and interest in learning.

The experimental method allows children to learn actively through exploration and direct observation activities. In learning to recognize colors, children can mix various colors to create new colors, use colored objects in various activities, and do simple experiments with materials that are easy to find in the surrounding environment.

In addition to providing a more concrete learning experience, experimental methods can also improve children's fine motor skills. Through activities such as mixing colors with a brush, pouring colored liquids, or arranging objects based on color, children learn to control their hand movements and eye-hand coordination. This skill is very important for the child's future development.

The application of experimental methods also contributes to improving early childhood critical thinking skills. Children are encouraged to observe the color changes that occur, make predictions, and draw conclusions from the results of their experiments. Thus, children not only recognize colors passively, but also learn to think logically and analytically from an early age.

From a social and emotional perspective, the experimental method provides an opportunity for children to learn to work together in groups. When conducting experiments with their friends, children learn to share tools, discuss, and help each other in finding answers to questions that arise during the learning process. This can improve their social skills and build confidence in interacting with others.

The observation results showed that after applying the experimental method, the children became more enthusiastic and enthusiastic in learning to recognize colors. They are more active in asking questions, trying different color combinations, and more easily remembering the colors they have learned. Compared to the lecture or memorization method, the experimental method has been proven to be more effective in improving children's understanding of color concepts.

The results of interviews with teachers also corroborate these findings, where teachers stated that children who learn through experimental methods are more likely to understand the material and show greater interest in learning activities. Teachers also find it easier to explain the concept of color because children can see firsthand how colors change and interact with each other.

However, in the application of experimental methods, there are several challenges that need to be considered. One of them is the readiness of teachers in designing and managing experimental activities so that they run well. Teachers need to ensure that the materials and tools used are safe for children and adjust activities to the level of child development so that learning remains effective and enjoyable.

In addition, time management is also a factor that must be considered in the application of this method. Because the experimental method takes longer than the conventional method, teachers need to design the learning well so that all children have the opportunity to actively participate in the activity.

Despite the challenges, the benefits obtained from the application of experimental methods are much greater. By providing a more interactive learning experience, children can understand colors better, develop critical thinking skills, and improve their social and motor skills.

As an implication of this study, teachers and early childhood education institutions are advised to use experimental methods more often in learning, especially in introducing basic concepts to children. Thus, the learning process becomes more meaningful and fun for children.

In conclusion, the experimental method is an effective learning approach in helping early childhood recognize colors. By involving children directly in exploration and experimentation, this method not only improves children's understanding of color, but also supports the development of their cognitive, social, and motor skills. Therefore, this method is highly recommended to be applied in learning at the early childhood education level.

METHODS

This research is a Classroom Action Research (PTK) that aims to improve early childhood understanding in recognizing colors through the application of experimental methods. This PTK is carried out in several cycles, where each cycle consists of planning, implementation of actions, observation, and reflection.

This research was carried out at RA Rahmah Nur Hasan in group B. The research time was carried out in 2024 and above with a period adjusted to the number of planned cycles. The subject of the study was group B children at RA Rahmah Nur Hasan, while the object of the research was the application of experimental methods in early childhood color recognition activities.

This research was carried out in the form of a cycle consisting of four stages, namely planning, implementation of actions, observation, and reflection. At the planning stage, the steps taken include preparing a learning plan with an experimental method in recognizing colors, preparing learning tools and media such as color paints, color cards, and colored objects, and compiling research instruments in the form of observation sheets and activity documentation.

The implementation stage of the action is carried out by carrying out learning activities according to the plan that has been made. Children were invited to experiment with mixing colors, matching colors, and observing color changes through various media. In the observation stage, observations are made of children's activities during the learning process, recording children's progress in recognizing colors through observation sheets, and documenting activities through photos or videos.

The reflection stage is carried out by evaluating the results of actions that have been taken in each cycle. The analysis of the data obtained is used to determine whether the research objectives have been achieved or need to be improved in the next cycle. The data collection techniques in this study include observation, documentation, and interviews. Observation was carried out to observe children's involvement in learning activities using experimental methods and record children's development in recognizing colors. Documentation in the form of photos or videos is used as evidence of the implementation of the research. Interviews were conducted with classroom teachers to obtain additional information about the child's development before and after the application of the experimental method.

The data obtained in this study was analyzed using a qualitative descriptive analysis technique consisting of three stages, namely data reduction, data presentation, and conclusion drawn. In the data reduction stage, the researcher selects and summarizes the data obtained from observation, documentation, and interviews. The presentation of data is carried out in the form of tables, pictures, and narrative descriptions that describe the development of children in recognizing colors. Conclusions were drawn based on the results of observation and reflection in each cycle to determine the effectiveness of the experimental method in introducing color to early childhood.

The indicators of the success of this research include several aspects. First, children are able to recognize and name colors better than before the study was conducted. Second, children show active and enthusiastic involvement in color recognition activities using experimental methods. Third, there was an increase in observation results in each cycle which showed that the experimental method was effective in improving children's understanding of color.

This research was carried out in two cycles with stages that included planning, implementation, observation, and reflection. At the planning stage, the preparation of a Daily Learning Implementation Plan (RPPH) based on the experimental method was carried out. Experimental tools and materials such as watercolors, colored paper, and color mixing materials were prepared. In addition, observation instruments and child development assessment sheets were also prepared.

At the implementation stage, teachers provide stimulus by introducing basic colors to children. The child then conducts an experiment of mixing colors with the materials that have been prepared. The teacher guides the children in exploration and discussion about the results of the experiment. Furthermore, in the observation stage, the teacher observed the child's activities during the experiment activity, recorded the child's involvement and understanding of color, and used the observation sheet to assess the child's development.

The design of the first cycle begins with the planning stage, where researchers design learning with experimental methods to introduce colors to children. The steps carried out include the preparation of RPPH, the preparation of experimental tools and materials such as watercolors with basic colors (red, blue, yellow), transparent glasses and water to mix colors, as well as brushes and drawing paper for color exploration. Observation instruments are also prepared to assess children's participation and understanding, as well as documentation in the form of photographs, children's works, and developmental records.

At the implementation stage, learning activities begin with an opening activity, where the teacher invites children to sing songs about colors and show objects with basic colors. Children were asked to name the colors they saw. The core activity is carried out by giving three basic colors in a transparent glass filled with water. The children were asked to mix the two colors and observe the color changes that occurred. The teacher asks the children questions about the colors that form and asks them to name the results. After that, the children applied the colors of the experiment to the drawing paper using a brush, while the teacher guided the exploration of colors and provided reinforcement of concepts.

In the closing stage, the teacher invites the children to conclude the results of the experiment, give praise for the children's efforts, and do a brief reflection by asking the children about the colors they have learned. The activity ended with a joint prayer and the submission of the next activity plan.

RESULTS

The results of this study were obtained after the application of the experimental method in early childhood recognition activities in RA Rahmah Nur Hasan group B. The research was carried out in two cycles, where each cycle consisted of planning, implementation, observation, and reflection stages. The results of the study showed a significant increase in children's understanding of color concepts, both in recognizing basic colors and mixed colors.

In the first cycle, before the application of the experimental method, most children still have difficulty in naming and recognizing colors correctly. Based on the results of initial observations, children can only recognize a few basic colors such as red, yellow, and blue, but they have difficulty distinguishing mixed colors and naming newly formed colors. This shows that they do not have a sufficient understanding of the concept of color and the relationship between colors. This situation is the basis for the need to apply experimental methods in color learning.

In the first cycle, after the application of the experimental method, children began to show active involvement in learning activities. The experiments carried out, such as mixing two basic colors to see the color changes that occurred, made the children more interested and motivated to learn. Teachers give children the opportunity to observe the results of the experiment and discuss the color changes they see. Although there are some children who still have difficulty identifying mixed colors, most children begin to recognize and name the

colors that are formed. Children's involvement in this activity is very high, as seen from the number of children who are enthusiastic about mixing colors and applying the results of experiments on drawing paper.

In the second cycle, the observation results showed a more significant increase. Children who previously had difficulty recognizing mixed colors can now accurately name the colors formed from experimenting with mixing two basic colors. Most children are also able to identify colors formed from a mixture of basic colors, such as purple (red + blue), green (yellow + blue), and orange (red + yellow). This success reflects that they have understood the concept of the relationship between base colors and mixed colors.

In addition, children also showed an increase in their creativity. In the experimental activity, the children not only followed the teacher's instructions, but they also began to explore colors freely. They mixed more colors and tried to see what happened. This shows their cognitive development and fine motor skills. Children are getting used to using brushes to explore and draw with colors of their own choosing.

By the end of the second cycle, observations showed that almost all children could recognize and name different colors better. Not only did the children recognize the basic colors, but they were also able to distinguish the mixed colors that resulted from the experiment. Children who were previously passive in learning activities now show a more active and confident attitude in mentioning colors and explaining the results of their experiments.

Teachers also reported that children were more likely to focus and enthusiastic in participating in activities after the application of the experimental method. They feel happy because they can do fun and educational activities. Children's involvement in learning increased, as evidenced by the many questions children asked teachers about colors and experiments. The application of experimental methods has a positive impact on a more interactive and fun learning atmosphere.

Based on the results of observations and interviews with teachers, the application of experimental methods also provides opportunities for children to develop their social skills. Children learn to work together in groups, share tools, and discuss experiments with each other. This helps build communication and cooperation skills among children, which are crucial for their social development.

This experimental method also provides benefits in developing children's fine motor skills. Activities such as mixing colors with a brush and drawing with the resulting colors strengthen the child's hand-eye coordination skills. In addition, this activity also involves children in activities that require precision and attention to detail, which is part of the child's cognitive development.

The application of experimental methods in color learning has been proven to be effective in increasing children's understanding of color concepts and increasing their involvement in learning. Children who previously had difficulty recognizing mixed colors can now easily distinguish and name the colors formed from experiments. They also begin to understand the relationship between basic and mixed colors and can apply this knowledge in drawing activities.

During the study, the children also showed a more positive attitude towards learning. Previously, the activity of recognizing colors tended to be a less interesting activity for them. However, with experiments involving children in the process of creating colors, they feel more interested and motivated to learn. This proves that experimental methods can be a fun and effective approach to early childhood learning.

Nonetheless, there are some children who still need additional support to fully understand the concept of mixed colors. Some children have trouble remembering the names of the mixed colors they make. For this reason, further repetition and reinforcement of the concept is needed in the next cycle, so that children's understanding of color can be deeper. Teachers also need to provide more opportunities for children to explore with color and experiment independently.

Overall, this study shows that the application of experimental methods in early childhood color recognition activities can improve children's understanding of colors, increase their involvement in learning, and develop children's fine motor and social skills.

The application of this method also provides a more enjoyable and meaningful learning experience for children.

The success of this study confirms the importance of a learning approach that involves hands-on experience and creative exploration, which is very much in line with the characteristics of early childhood who have a high level of curiosity and learn more effectively through experience. Thus, the application of experimental methods can be an effective solution in improving children's understanding of colors and other concepts in the future.

DISCUSSION

This discussion aims to interpret and evaluate the results of research on the application of experimental methods in early childhood color recognition activities at RA Rahmah Nur Hasan. Based on the findings of the study, it can be concluded that the application of experimental methods has a positive impact on children's understanding of color, increasing their involvement in learning, and developing various other skills. However, there are several things that need to be observed to ensure the effectiveness of this learning in the long term.

First, the application of experimental methods has been proven to improve children's understanding of color recognition. Before the study, children still had difficulty distinguishing and naming colors, both basic colors and mixed colors. After going through the experiment of mixing colors, most children begin to be able to recognize colors better, and are able to distinguish the colors that are formed. This is in line with the theory that hands-on experience through experiments can strengthen children's understanding of basic concepts, such as color. Through experiments, children are not only given verbal knowledge, but they are given the opportunity to see, feel, and understand the changes that occur, which makes learning more concrete and memorable.

In addition, the experimental method also increases children's involvement in learning activities. Previously, the activity of knowing colors for some children may seem monotonous or uninteresting. However, through experiments involving color mixing, children feel more interested and active in the learning process. This high involvement of children shows that learning approaches that involve exploration and experimentation are able to attract attention and increase early childhood learning motivation. This is also in accordance with the principles of early childhood learning which emphasizes a fun approach and prioritizes hands-on experience as a means of learning.

However, although the results of the observations show that most children are starting to understand the concept of color well, there are still some children who have difficulty remembering the names of the mixed colors they make. Some children need repetition and further reinforcement in order to better understand and remember mixed colors. This suggests that while experimental methods are effective, some children may require a more varied or longer approach to learning more complex concepts such as mixed colors. Therefore, teachers need to provide more opportunities for children to explore and experiment with different colors, as well as reflect more intensively to ensure deep understanding.

In addition, although children's involvement in experimental activities seems to be increasing, there are some children who still lack confidence in participating. This can be caused by various factors, such as differences in individual characteristics of children or previous learning experiences that are not supportive. Therefore, in the application of the next experimental method, it is important for teachers to pay attention to the individual needs of children and provide more personalized support so that each child feels comfortable and confident to actively participate in activities.

The use of experimental methods has also been proven to develop children's social and fine motor skills. During the experiment, the children worked together in groups, shared tools, and discussed the experiments they conducted. This helps them develop social skills,

such as communicating, cooperating, and respecting each other's opinions. In addition, activities such as mixing colors with brushes and drawing strengthen children's fine motor skills. This skill is important for a child's physical development, particularly in improving their hand-eye coordination.

However, it is important to note that while experimental methods can increase children's engagement in learning, teachers must still ensure that the learning tools and media used in experiments are safe and easily accessible to children. For example, the use of watercolors and other materials needs to be adapted to early childhood abilities so that they can use them safely and effectively. Teachers also need to always supervise children when conducting experiments to avoid accidents or misuse of experimental materials.

The success of this study also shows that experimental methods are effective in activating children's curiosity, which is one of the main characteristics of early childhood. Through experimentation, children are given the opportunity to ask questions, try new things, and observe the changes that occur, which encourages them to think critically and creatively. These activities give children the freedom to explore and learn in a fun and meaningful way, which of course supports their cognitive development.

Overall, the application of the experimental method in color recognition activities at RA Rahmah Nur Hasan can be considered successful in increasing children's understanding of colors and their involvement in learning. This shows that learning that involves exploration and hands-on experimentation can be more engaging for children, so they can understand the concepts better. This success also demonstrates the importance of a child-centered approach, which facilitates children to learn through real experiences and active interaction with their environment.

However, to achieve more optimal results, continuity is needed in the application of experimental methods and the repetition of activities with more interesting variations. Teachers also need to pay attention to the individual needs of children and adjust the approach according to their level of understanding and ability. Thus, the experimental method can be one of the most effective ways in early childhood learning, which not only helps them recognize colors, but also develops their cognitive, social, and motor skills.

CONCLUSION

Based on the results of the research on the application of the experimental method in early childhood recognition activities at RA Rahmah Nur Hasan, it can be concluded that the experimental method is effective in increasing children's understanding of color. Children who previously had difficulty recognizing and distinguishing basic and mixed colors showed significant development after applying the experimental method. Through the experiment of mixing colors, children are more active and enthusiastic in participating in learning, and it is easier to remember and understand the concept of color in a fun way.

The application of experimental methods has also been proven to be able to increase children's involvement in learning activities, both individually and in social interactions. The children were more confident and able to work together during the experiment, which also helped develop their social and motor skills. In addition, experimental activities provide opportunities for children to explore, ask questions, and think critically, which supports their cognitive development.

However, even though most children have managed to understand the concept of color better, some children still need repetition and further guidance to master mixed colors. Therefore, the application of experimental methods needs to be carried out continuously and with interesting variations to ensure that all children can follow and understand the material well.

Overall, this study shows that the experimental method is an effective approach in introducing color in early childhood, as well as having a positive impact on the development of their cognitive, social, and motor skills. For more optimal results, it is necessary to repeat

activities and pay attention to the individual needs of the child.

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