Cuisenaire Beam Media on Increasing Cognitive Ability of Preschool Age Children in Raudathul Atfhal Kindergarten Al-insyiroh, Kendari City

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Abstract. One form of measurement of early childhood growth and development (fine and gross motor coordination), intelligence (thinking power, creativity, emotional intelligence, spiritual intelligence), and socio-emotional children. Cognitive ability is one aspect of development related to the ability to think cognitively on activities or processes of acquiring knowledge. The method of playing in learning in Kindergarten is a technique of delivering information aimed at children through game tools. Media Cuisenaire blocks are blocks of ten levels from one to ten which are equipped with numbers one to ten and are equipped with different colors as a means of improving aspects of development related to thinking skills in children. This type of research is quantitative with the form of design used is pre-experimental with a one-group pre-test post-test design. The population in this study were 85 students of preschool age at Raudathul Atfhal Al-insyiroh Kindergarten, Kendari City, with a sampling technique using simple random sampling with a sample of 40 respondents. The test used is the Paired Sample t. The results showed that there were differences in the improvement of children's abilities before and after the Play Beam Cuisenaire media was carried out. In this study, the results of the paired sample-Test test obtained that the p value (0.000) > (0.05), and the t value (7.550). The conclusion is that there is an effect of Play Beam Cuisenaire media on improving the cognitive abilities of preschoolers in Raudathul Atfhal Al-insyiroh Kindergarten, Kendari City.

Keywords : Cognitive, Preschool Age Children, Kindergarten

INTRODUCTION

Age range 0-6 years. At that age children need educational efforts to optimize all aspects of development which include the development of moral and religious values, motoric, language, intellectual, social, emotional, and artistic. The development and maturity of early childhood, especially intellectual, social, moral, and emotional maturity runs very quickly, this must be accompanied by the fulfillment of developmental tasks so that children can grow optimally (Susanto, 2015).

Cognitive ability is one aspect of development that is related to the ability to think cognitively on activities or processes of acquiring knowledge (including awareness, feelings, etc.) or efforts to recognize through own experience. Early childhood has the expected for children to build knowledge so that the learning process. Developing children's cognitive abilities should pay attention to learning plans that are oriented to the needs of children, develop skills and independence from an early age oriented to developmental principles, implemented repeatedly and gradually, are concrete and stimulate integrated in an integrated manner.

The play method in learning in Kindergarten is a technique of delivering information aimed at children through games or activities that can provide comfort and pleasure to children. The play method is used to help children explore their world, develop competence in dealing with their world, and develop children's creativity. With the play method, children can choose the ability to understand concepts scientifically without being forced. This is intended so that the achievement of cognitive abilities is in accordance with what is expected and the child is able to fulfill his developmental tasks, especially in the cognitive aspect.
Cognitive abilities are in accordance with several cognitive aspects that need to be developed in early childhood as regulated in Ministerial Regulation Number 58 of 2009 concerning educational standards for cognitive abilities of children aged 4-5 years. The development of cognitive abilities in children using the play method can be facilitated with cuisenaire blocks as media. Activities experienced by children through a game using Cuisenaire blocks will have a positive impact on children’s cognitive development. Cuisenaire block media is one of the learning media that is able to bridge children in understanding the concept of color and shape in real terms. Cuisenaire blocks help children group objects by color and sort objects according to their height and low or vice versa.

According to Anggani Sudhono (2006) explains that the cuisenaire block is not only for developing mathematical concepts, but for language development and for improving children's skills. In line with this, Eliyawati (2005) cuisenaire blocks have a function to develop fine motor skills, train accuracy and develop children’s intelligence.

The purpose of this study was to determine the effect of Media Play Beam Cuisenaire on cognitive improvement of preschool age children at Raudatul Atfhal Al-Insyiroh Kindergarten, Kendari City.

RESEARCH METHODS

This type quantitative, with a pre-experimental research design. This study uses a one group pretest posttest design approach, which is done by observing the subject group before the intervention, then observing again after the intervention.

This research will be conducted at Raudatul Atfhal Al-Insyiroh Kindergarten, Kendari city, for 3 weeks from August to September 2021. The population in this study is preschool age children in Raudatul Atfhal Al-Insyiroh Kindergarten Kendari City as many as 85 students, with a sampling technique that is simple random sampling with a total sample of 40 respondents aged 4-6 years.

The analysis used is univariate analysis, namely data analysis conducted to determine the frequency distribution and presentation of each variable studied. Then a bivariate analysis was carried out to see the effect of the dependent variable on the independent variable with the test used, namely the Paired Sample t Test statistical test.

RESULT

Univariate Analysis

The results of the univariate analysis were based on the effect of Media Play Beam Cuisenaire on the cognitive improvement of preschoolers in Raudatul Atfhal Al-Insyiroh Kindergarten, Kendari City before and after the intervention. Based on the distribution of respondents by age group. Table 1 shows that among 40 research respondents aged 4 years there were 11 respondents (27.5%), aged 5 years there were 9 respondents (22.5%), aged 6 years there were 20 respondents (50%). Based on the distribution of respondents' gender groups, it can be seen in Table 1 that of the 40 research respondents, the number of male respondents was more than female, 22 respondents were male respondents (55%), while 18 respondents were female (45%).

Tabel 1. The distribution of respondents based on age gender

<table>
<thead>
<tr>
<th>Varibel Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 years old</td>
<td>11</td>
<td>27.5</td>
</tr>
<tr>
<td>5 years old</td>
<td>9</td>
<td>22.5</td>
</tr>
<tr>
<td>6 years old</td>
<td>20</td>
<td>50</td>
</tr>
</tbody>
</table>

Gender

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>45</td>
</tr>
</tbody>
</table>

Bivariate Analysis

Analyzing the intervention, the data was first tested for the normality of the intervention which was analyzed using the Kolmogorov-Smirnov test. The results of the normality test in table 2 show that the -value before being given Play Beam Cuisenaire was 0.433 (p-value > 0.05) and after being given Play Beam Cuisenaire, the p-value was
0.351 (p-value > 0.05) this value indicates a normal data distribution.

**Table 2. Normality Test**

<table>
<thead>
<tr>
<th>Cognitive Improvement</th>
<th>𝜌-value</th>
<th>α</th>
<th>Conclusio n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before given Play Beam Cuisenaire</td>
<td>0.433</td>
<td>0.05</td>
<td>Normal</td>
</tr>
<tr>
<td>After given Play Beam Cuisenaire</td>
<td>0.351</td>
<td>0.05</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Analysis of the influence of Media Play Beam Cuisenaire on cognitive improvement of preschool children in Raudatul Athfah Al-Insyiroh Kindergarten, Kendari City, the intervention analyzed by testing (Paired Sample t Test), as shown in table 3. The results of the analysis in table 3 show that in this study, respondents whose cognitive abilities did not improve before receiving the intervention (pre-test) were 32 respondents (80%), reduced to 3 respondents (7.5%) after receiving the intervention (post test). While the respondents whose cognitive increased before getting the intervention (pre-test) were 8 respondents (20%) and increased after getting the intervention (post test) as many as 37 respondents (92.5%). So it can be seen that there is a positive influence of Media Play Beam Cuisenaire on the cognitive improvement of preschoolers.

**Table 3. Cognitive Improvement before and after giving Media Play Beam Cuisenaire**

<table>
<thead>
<tr>
<th>Children's Cognitive Increase</th>
<th>Not Increase</th>
<th>Total</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Play Beam Cuisenaire</td>
<td>8</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>After Play Beam Cuisenaire</td>
<td>37</td>
<td>92.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3 shows that after the paired sample-test statistical test with a significant level set is < 0.05 on children's cognitive improvement before and after the Play Beam Cuisenaire media is obtained, = 0.000. increasing children's cognitive abilities before and after the Play Beam Cuisenaire media is carried out at Raudatul Athfal Al-Insyiroh Kindergarten, Kendari City.

Table 3 also shows the value of t = 7.550 which shows the difference between the average cognitive improvement of children before being given the Cuisenaire play beam and the average cognitive improvement of children after being given the Cuisenaire play beam (95% confidence interval of the difference lower and upper).

**DISCUSSION**

Cognitive ability is one aspect of development related to the ability to think. According to Latif, Mukhtar., et al (2013) cognitive is an activity or process of acquiring knowledge (including awareness, feelings, and so on) or an attempt to recognize something through one's own experience. Early childhood has the ability to build and create their own knowledge so it is important for children to be directly involved in the learning process.

In children aged 4-5 years, children experience stages of growth and development, therefore appropriate learning conditions are needed, especially in cognitive abilities which is one of the important aspects in early childhood. Cognitive development is the development of individual thinking abilities in acting or in all matters relating to the thinking process. Cognitive abilities that are meant in this study are: (1) the concept of numbers, symbols of numbers and letters. As an indicator that is recognizing the concept of numbers and letters. (2) the concept of shape, color, size, and pattern as an indicator, namely classifying objects based on shape, color, and size. Cuisenaire block media is one of the learning media that is able to bridge children in understanding the concept of color and shape in real terms. Cuisenaire blocks help children group objects based on color and sort objects according to their height and low or vice versa and this can improve children's cognitive abilities.

Eliyawati (2005) cuisenaire blocks have a function to develop fine motor skills,
train accuracy and develop children's intelligence. Respondents who have followed the Play Beam Cuisenaire media on increasing the cognitive abilities of preschool children in Raudatul Atfhal Al-Insyiroh Kendari City for 3 weeks experienced changes or increased abilities. This is evidenced by the results of studies that show differences in children's cognitive abilities before and after the Play Beam Cuisenaire media was carried out.

This is in line with the results of previous research conducted by Pratini and Christiana (2014) which states that the use of cuisenaire blocks can improve children's cognitive abilities in recognizing colors, sizes and numbers. This is in accordance with the theory according to Hamalik in Arsyad (2007), suggesting that the use of learning media in the teaching and learning process can generate new interests, can generate motivation and stimulation of learning activities, and even bring psychological effects on children.

Media Play Beam Cuisenaire is one strategy to improve the cognitive abilities of preschoolers that can be done by preschoolers. A person who behaves well will realize good practices and manifest an attitude so that it becomes an act or real action, supporting factors are needed including facilities, facilities and infrastructure and support from other parties. So the researchers suggest that Play Beam Cuisenaire media should be used by teachers of preschool children to improve children's cognitive abilities.

CONCLUSION

Based on the research that has been done by researchers, it can be concluded that there is an effect of Play Beam Cuisenaire media on increasing the cognitive abilities of preschoolers in Raudatul Atfhal Al-Insyiroh Kindergarten, Kendari City.

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