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Ability Cognitive Children Age Early Between Methods Brain Gym and Methods Providing Duty

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Abstract

Children's cognitive abilities have not been appropriately achieved. This is due to the use of methods that are considered less effective in the learning process. The purpose of this study was to determine the reality of differences in cognitive abilities of early childhood with the Brain Gym method and the assignment method for Group B at RA Al-Wafi Panyileukan Bandung City. The research method used is Quasi Experiment with non-equivalent control group design research. The results showed that children's cognitive abilities using the Brain Gym method and those using the Giving Task method had significant differences. This was evidenced by the results of hypothesis testing, which showed the t value = 8.97 more effective than the t table value = 2.043 at a significance level of 5 %.
Keywords: *Brain Gym; Cognitive Abilities; Early Chidhood; Providing Duty,*

Introduction

Education is essential in human life, so education must be implemented, possible, and expected to get the desired results. States that education is the process of changing the attitudes and behavior of a person or group of people to mature humans through teaching and training efforts (Syah, 2014). In a broad sense, education can be defined as a process with specific methods to gain knowledge, understanding, and behave according to their needs. Therefore, education can be done as a necessity that every individual needs in his life. Philip H. Combs, as quoted by Aisah and Hidayat, distinguishes the form of education management into three parts. Namely, informal education, known as family education, non-formal education, often referred to as out-of-school education/courses, and formal education, namely when children enter school starting from Early Childhood Education (PAUD) to college (Aisyah & Hidayat, 2015).

The golden age is the most crucial period for forming the knowledge and behavior of children (Khuluqo, 2020). Therefore, early childhood is the most vital period for children's lives because what happens in the present will determine the subsequent development. Development is defined as changes experienced by an individual towards a level of maturity or maturity that takes place systematically, progressively, and continuously, both in terms of physical and psychological aspects (Wiyani, 2014). The elements of child development

include physical, cognitive, language, social-emotional, religious and moral values (Susanto, 2011). Reveal that in cognitive abilities, competencies, and expected learning outcomes for children, children can think critically, think critically, give reasons, solve problems, and find causal relationships to solve the issues at hand (Khadijah, 2016). It is thus hoped that future research will determine whether the field of brain training realizes its potential to revolutionize education and rehabilitation or is engulfed in controversy (Rabipour & Raz, 2012).

Meanwhile, based on the results of a preliminary study conducted at RA Al-Wafi Panyileukan, Bandung, several problems were found related to cognitive abilities, including (1) some children were still unable to say numbers well; (2) As well as sorting frequent numbers. Not according to the order, for example, numbers 1, 2, 3, 4, 5, 7, and so on. The child is still confused about using the number symbols to add up many objects. Some children still find it challenging to reduce the number of things that the teacher still has to help with. Children are still not independent in completing maze activities (Fauziddin & Mufarizuddin, 2018). The possibility of this is due to the use of less effective learning methods and fun and the use of learning methods applied in RA Al-Wafi to develop children's cognitive abilities, namely the assignment method only, so it is deemed less effective. Learning disability is commonly associated with a weak working memory function of a student that impacts his or her performance in school (Abduh & Tahar, 2018). This can be seen from the response of children who do not focus on learning activities. Some children do not want to complete their assignments. Some children prefer to disturb their friends rather than working on assignment sheets. Many children complain of being tired and bored, which has an impact on their cognitive abilities.

Efforts that can be made to improve cognitive abilities in early childhood are using appropriate, fun methods and channeling the physical activity of children's motoric movements. In this case, the author will apply the brain gym method (Made & Astuti, n.d.;);(Dennison & Dennison, 1986). Some studies have found strong, positive relationships between physical activity and cognitive outcomes (Fedewa & Ahn, 2011). The brain gym is a relaxation technique in teaching (indoor or outdoor) by doing healthy, natural, and simple movements to deal with tensions and challenges to yourself and others in delivering lesson messages to achieve the expected goals (Astuti, 2014). Based on some of the problems and facts above, appropriate learning methods are needed to support the achievement of early childhood cognitive abilities (Rahman, 2009).

Furthermore, physical fitness in children can improve learning and cognitive skills related to academic achievement (Abdelkarim et al., 2017). So, to determine the accuracy of the methods used to optimize cognitive abilities, researchers are interested in researching cognitive abilities of early childhood using the brain gym method and assigning tasks carried out in Group B at RA Al-Wafi Panyileukan, Bandung City. The goal is to determine the differences in early childhood cognitive abilities using the brain gym method and the assignment method in group B RA Al-Wafi Panyileukan Bandung City. Future research would

determine whether the field of brain training realizes its potential to revolutionize education and rehabilitation or withers away engulfed in controversy.

Research method

This study uses quantitative research with this type of research, namely quasi-experimental with non-equivalent control group design. In which the experimental and control classes were chosen randomly (Sugiyono, 2013). In this study, a pretest was given to the experimental and control style. The practical lesson was given treatment while the control class was not treated. After that, the post-test was carried out in the practical and management courses. Thus, the treatment results can be more accurate because they can compare the experimental and control classes. This design is explained in the table below:

Class	*Pretest*	*Treatment*	*Posttest*
Brain Gym	O_1	X_1	O_2
Giving Assigment	O_3		O_4

Information:

O1 & O3: Pretest

O2 & O4: Post-test

X1: Treated using the Brain Gym method

Treatment effects : (O2-O1) (O4 - O3) (Sugiyono, 2011)

This study used a population and samples of students in group B RA Al-Wafi Panyileukan, Bandung city, consisting of 3 classes with ten meetings on core learning activities and four meetings to conduct two pretest and two post-tests. By using comparative data analysis techniques with data collection using performance and documentation (Hayati, 2014).

Result

Differences in cognitive abilities, testing of the data obtained was carried out. Cognitive ability data is obtained from performance activities, from 2 indicators, namely mentioning numbers 1-10 and using number symbols to calculate, which are developed into six items. After giving treatment in the experimental class, the performance was carried out using the brain gym method and in the control class using the assignment method. Data on children's cognitive abilities in the experimental and control types can be seen in the table below:

Cognitive Ability Dates for the experimental class (*posttest*)

NO	NAME	SCORE
1	E1	79
2	E2	54
3	E3	92
4	E4	75
5	E5	83
6	E6	92
7	E7	79
8	E8	75
9	E9	92
10	E10	92
11	E11	83
12	E12	79
13	E13	71
14	E14	67
15	E15	79
16	E16	67
Amount		**1167**
Average Value		**78,65**

Based on the table, cognitive abilities in group B1 children as the experimental class at the post-test had the highest score of 92, the lowest score of 54 with a total value of 1167, and an average value of 78.65. So it can be interpreted that after applying the brain gym method, the average value of Cognitive abilities in class B1 as the experimental class is in a suitable category.

Control Class Cognitive Ability Date (*Posttest*)

NO	**NAME**	**SCORE**
1	K1	63
2	K2	67
3	K3	71
4	K4	75
5	K5	71
6	K6	79
7	K7	71
8	K8	63
9	K9	58
10	K10	75
11	K11	75
12	K12	67
13	K13	67
14	K14	67
15	K15	75

16	K16	58
17	K17	67
Amount		**1258**
Average Value		**68,63**

Based on the table, cognitive abilities in group B2 children as the control class at the post-test had a total value of 1258 with the highest score of 79, the lowest score of 58. With the average score of 68.63, it can be interpreted that the average value of cognitive ability in class B2 is as a class. Therefore, the controls are in enough category. The data obtained from the research on early childhood cognitive abilities in the experimental and control levels can be seen in the table.

Posttest Data Normality Test
Brain Gym Methods and Assignment Methods

The Price You Are Looking For	***Brain Gym***	**Assignment**
Average (X)	78,65	68,63
Standard deviation (SD)	9,63	6,68
X^2_{hitung}	1,72	3,72
Degrees of Freedom (DK)	4	4
X^2_{tabel}	9,488	9,488
Significance level	5%	5%
Information	Berdistribusi normal	Berdistribusi normal

From the post-test results of the experimental class and control class, the following data were obtained:

Results Uji Homogenitas

Class		**F_{hitung}**	**Dk**	**F_{tabel}**	**Ket.**
Brain Gym	Assignment	1,51	31	2,35	Homogen
Vb	Vb				
51,76	48,31				

Based on the table, it is obtained that f_count = 1.51 is more minor than table = 2.35 so that it can be interpreted that the two data have homogeneous variants. Therefore, the working hypothesis of H_a in this study is that "there are differences in cognitive abilities in early childhood between the brain gym method and the assignment method. It is based on the data analysis technique in CHAPTER III, testing this hypothesis using the t-test formula and obtaining the t-test value of 8.97.

Test Two Mean Posttest Data for Brain Gym Class and Assignment

Data	**t_{hitung}**	**t_{tabel}**	**Db**	**Information**
Posstest class *brain gym* and Assigment	8,97.	2,043	31	Ho rejected, Ha accepted

Discussion

This study aims to determine differences in cognitive abilities between the brain gym method and the assignment method. This research uses quasi-experimental design research. Based on this type of research, there is one group that becomes the experimental group using the brain gym method and one control group using the assignment method. The description of the use of the brain gym method in the practical class. The assignment method in the control class and the differences in children's cognitive abilities between the brain gym method and the assignment method(Jakni, 2016).

Description of Cognitive Abilities of Early Childhood Experiment Class Using the Brain Gym Method. Report of cognitive abilities in the experimental class in group B1 RA Al-Wafi aims to determine the cognitive abilities of early childhood through performance activities. The indicators of cognitive skills in this study include mentioning the numbers 1-10 and using the symbol number to calculate, which are developed into six items that have been tested for validity and reliability(S, 2017).

In the results of the pretest research, the data were normally distributed with an average score of cognitive ability of 51.82. This value was on a scale of less interpretation. It means that the reality of cognitive skills before being given the brain gym method in the experimental class was less qualified. However, when there was brain treatment gym for five days, the post-test research results have standard distribution data with an average score of 78.65, which can be interpreted as cognitive ability using the brain gym method in group B1 RA Al-Wafi Panyileukan Bandung City with suitable qualification.

Description of Cognitive Abilities of Early Childhood Control Class Using Assignment Methods Description of cognitive abilities in the control class group B2 RA Al-Wafi, aims to determine the cognitive abilities of early childhood through performance activities. The indicators of cognitive skills in this study include the symbols of numbers 1-10 and using the number symbols to calculate, which are developed into six items that have been tested for validity and reliability.

In the pretest research results, the data were normally distributed with an average value of 64.22. Thus, the matter was on a sufficiently interpreted scale. On the other hand, the products of post-test research data are typically distributed with an average value of 68.63, which means that the reality of cognitive abilities in the control class group B2 using the assignment method in RA Al-Wafi Panyileukan Bandung City is qualified enough.

There were differences in early childhood cognitive abilities between the Brain Gym method and the assignment method. Based on the calculation of hypothesis testing on six items of performance activities for cognitive skills in the experimental class using the brain gym method and the control class using the assignment method in group B RA Al-Wafi Panyileukan Bandung City. It has a significant difference. This is evidenced by testing the hypothesis using the t-test formula, which results in count = 8.97. It is known that t-table with a significance level of 5% is 2.043, then tcount = 8.97> t-table and can be interpreted as an alternative hypothesis (Ha) is accepted. The null hypothesis (Ho) was rejected. Therefore,

there is a significant difference between the cognitive abilities of early childhood who learn to use the brain gym method and children who learn to use the assignment method.

Conclusion

Research on cognitive abilities in early childhood carried out in group B Ra Al-Wafi Panyileukan Bandung can be concluded that the power of children to use the brain gym method has very significant. Furthermore, development from the time before the research or pretest to after the study or post-test was conducted on the control and experimental groups. Therefore, the cognitive abilities carried out by the brain gym method and those using the assignment method have significant differences. This is evidenced by the results of hypothesis testing, which show the value of t = 8.97 greater than t table at a significance level of 5% of 2,043 so that it is expected to be used as reference material for further research in the use of the brain gym method in children.

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