



The Effectiveness of Busy Book Media on Fine Motor Skills of 4-5 Year Old Children at KB Ainul Husna, Padang Panjang City

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Abstract

This research is motivated by the importance of using interesting and interactive educational media to support the development of early childhood skills, especially fine motor skills. Busy Book is a learning media designed to create a fun learning atmosphere and increase children's motivation and enthusiasm in classroom activities. The purpose of this study was to test the effectiveness of using Busy Book on improving children's fine motor skills at KB Ainul Husna, Padang Panjang City. The study used a quantitative approach with a quasi-experimental design. The study population included 45 children, with a purposive sample of 24 children from grades B1 and B2. Data analysis was carried out through prerequisite tests, independent sample t-tests, and effect size calculations using SPSS 26.0 for Windows. The results showed that the experimental group using Busy Book experienced an increase in average scores from 32.08 to 45.33, while the control group using the collage method increased from 32.58 to 40.58. The t-test produced a significance value of 0.000, indicating a significant difference between the two groups. The effect size value of $d = 2.22$ indicates a very strong effect. Thus, the use of Busy Book media has proven effective in improving the fine motor skills of early childhood children at KB Ainul Husna in Padang Panjang City. The results of this study imply that Busy Book can be used as an effective and engaging alternative learning medium to stimulate fine motor skills in early childhood education activities.

INTRODUCTION

Early Childhood Education (PAUD) has a strong legal basis in Indonesia, as regulated in Law No. 20 of 2003 concerning the National Education System, Minister of Education and Culture Regulation No. 137 of 2014 concerning National PAUD Standards, and Minister of Education and Culture Regulation No. 146 of 2014 concerning the 2013 PAUD Curriculum. PAUD plays a vital role in establishing the foundation for holistic child development, encompassing cognitive, social, emotional, and physical aspects. Early childhood is known as *golden age*, where appropriate stimulation determines a child's potential in the future.

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Research shows that investing in early childhood education (ECE) positively impacts learning outcomes, social development, and character development (Heckman, 2022; Mursid, 2015; Hartinah et al., 2018). From an Islamic perspective, educating children is the responsibility of parents, teachers, and the educational environment. This is emphasized in Surah Al-'Alaq, verses 1–5, and the hadith of the Prophet Muhammad (peace be upon him) on the importance of moral education.

One crucial aspect of early childhood education (PAUD) is fine motor development, which involves using the small muscles of the hands and fingers for activities such as writing, drawing, buttoning clothes, or holding small objects. Fine motor skills influence a child's academic readiness, independence, and social skills (Santrock, 2020; Sumantri, 2019; Khadijah & Amelia, 2020). However, many children still face obstacles in developing these skills, either due to a lack of stimulation at school or excessive exposure to gadgets at home.

In the context of learning, educational media is an important tool for stimulating fine motor skills. One medium that has proven effective is the Busy Book, a flannel-based book containing interactive activities such as buttoning, tying, pinning, and arranging shapes (Nilmayani et al., 2017; Safitri et al., 2019). Busy Books train hand-eye coordination, concentration, patience, and exploration skills (Ulfah, 2017; Wibirani, 2018). Its advantage lies in its flexible design, which can be adapted to learning needs, both at home and at school (Sari, 2016; Husna, 2019; Suwatra et al., 2019).

Several studies (Firdaus, 2021; Prasko & Husna, 2019; Huang & Chen, 2023) have shown that Busy Books not only significantly improve fine motor skills but also motivate children to learn actively and independently. Therefore, Busy Books are an innovative, creative, and effective learning medium for supporting early childhood development

METHODS

This research uses a quantitative approach with a quasi-experimental method. The goal is to reveal the causal relationship between variables through controlled treatment. According to Siregar (2013), experiments test the relationship between variables; Suryani & Hendryadi (2015) emphasize the search for the influence of certain variables on other variables; Sugiyono (2018) emphasizes that experiments are used to determine the influence of independent variables on dependent variables.

The design used was a non-equivalent design, similar to a pretest-posttest group design, but the groups were not selected completely randomly. The researchers identified two classes: one as the experimental class, which received the treatment, and one as the control class, which received no treatment. Both classes were given a pretest before the treatment and a posttest after the treatment to determine differences in outcomes.

The study population was all 45 children of KB Ainul Husna in Padang Panjang City. The study sample consisted of 24 children from classes B1 and B2. The sampling technique used purposive sampling, taking into account equality of age, initial abilities, and learning conditions in both classes. Class B1, consisting of 12 children, was designated as the experimental group, while class B2, consisting of 12 children, was designated as the control group.

RESULT AND DISCUSSION

A. Instrument Test

1. Validity Test

Butir item	Rhitung	Rtabel 5 %	Keterangan
1	0,855	0,576	Valid
2	0,915	0,576	Valid
3	0,586	0,576	Valid
4	0,915	0,576	Valid
5	0,756	0,576	Valid
6	0,946	0,576	Valid
7	0,791	0,576	Valid
8	0,915	0,576	Valid
9	0,855	0,576	Valid
10	0,637	0,576	Valid
11	0,855	0,576	Valid
12	0,743	0,576	Valid
13	0,862	0,576	Valid
14	0,683	0,576	Valid
15	0,915	0,576	Valid

Based on the results of the validity test above, it can be concluded that the calculated r table from items 1 to 15, so that all question items are valid with a significance level of 5%, so they are suitable for use.

2. Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.960	15

From the calculation results above, the calculation is obtained *Cronbach's Alpha coefficientis* 0.960 > 0.6, thus it can be concluded that all statement items from both independent and dependent variables are reliable.

B. Data analysis

1. Classical Assumption Test

a. Normality Test

Tests of Normality				
	Kelas	Kolmogorov-Smirnov ^a		
		Statistic	Df	Sig.
Hasil	Pre-Test Eksperimen	.160	12	.200*
	Post Test Eksperimen	.149	12	.200*
	Pre-Test Kontrol	.164	12	.200*
	Post Test Kontrol	.185	12	.200*

Based on the results of the normality test above, it was obtained in the column *Kolmogorov-Smirnov(a)* sig value in the experimental class is *pre-test* 0.200 and *post-test* 0.200 while in the control class the sig value is *pre-test* 0.200 and *post-test* 0.200.

Based on the decision-making criteria for the normality test, it can be stated that the sig value for each data group is > 0.05 , so it can be concluded that the research data is normally distributed.

b. Homogeneity Test

Test of Homogeneity of Variances			
Hasil			
Levene Statistic	df1	df2	Sig.
.600	3	44	.618

Based on the results of the homogeneity test above, a sig value of 0.618 was obtained. In accordance with the homogeneity test decision-making criteria, it is concluded that the research data comes from homogeneous data variants.

2. Hypothesis Testing (*Independent Sample Test*)

Levene's Test for Equality of Variances	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
Equal variances assumed	0.622	0.439	5.455	22	0.000	5.250	0.962	3.254 – 7.246
Equal variances not assumed			5.455	21.846	0.000	5.250	0.962	3.253 – 7.247

Based on the results *independent sample test* The sig value obtained above in the experimental class was 0.000 and the control class was 0.000. Based on the decision-making criteria *independent sample test* The value of $0.000 < 0.05$, so it is stated that there is a significant difference in the average. If we look at the comparison of the increase in data scores from the descriptive statistical test, it can be seen that *gain score* experimental class is higher than *gain score* control class. The data shows that *treatment* in the experimental class has a greater influence when compared to *treatment* in the control class to develop children's fine motor skills.

3. Effect Size Test (Effectiveness Test)

Descriptive Statistics			
	Sum	Mean	Std. Deviation
Selisih Kelas Eksperimen	159	13.25	2.454
Selisih Kelas Kontrol	96	8.00	2.256
Valid N (listwise)			

To determine the magnitude of the influence of the use of Busy Book media on the fine motor skills of children aged 4–5 years at KB Ainul Husna Padang Panjang City, an effect size calculation (Cohen's d) was carried out. The first step was to calculate the Spooled (Sgab) value. Based on the research data, the Sgab value was obtained = 2.36. Next, the Cohen's d value was calculated using the average score of the experimental class (45.33) and the control class (40.58). The calculation results show:

$$d = \frac{45,33 - 40,58}{2,36} = 2,22$$

The d value of 2.22 is considered very strong. This indicates that the use of Busy Book media has a significant impact on improving children's fine motor skills. Thus, the results of the effect size analysis confirm the findings of the t -test, which showed a significant difference between the experimental and control classes. Busy Book has been proven not only to be statistically effective but also to have a strong practical impact in supporting the fine motor development of early childhood.

This study aims to test the effectiveness of Busy Book media in improving fine motor skills in children aged 4–5 years at KB Ainul Husna in Padang Panjang City. Using a quasi-experimental design, the study compared the experimental group receiving Busy Book treatment with a control group using conventional learning methods.

The results showed a significant improvement in the experimental group. The average pre-test score of 32.08 increased to 45.33 in the post-test, with an average difference of 13.25 points per child. In contrast, the control group only experienced an increase from 32.58 to 40.58, with an average difference of 8.00 points per child. The lower standard deviation in the experimental group (2.774 compared to 3.579) indicates more consistent and equitable results.

Theoretically, these findings align with Piaget's emphasis on concrete activities in the preoperational stage, and Montessori's emphasis on sensory exploration and hands-on activities. Vygotsky emphasized the role of learning aids such as Busy Books as mediators of cognitive and social development. Additional support comes from Papalia, Santrock, Huang & Chen, and Yuliani & Sari, who emphasize the importance of environmental stimulation rich in manipulative activities to improve fine motor coordination.

From a practical perspective, Busy Books serve not only as a learning tool but also as a motivational tool that encourages children to be active, independent, and confident. This tool allows for differentiated learning, allowing each child to learn at their own pace and ability.

CONCLUSION

The results showed that children's fine motor skills improved in both the experimental and control classes. However, the improvement in the experimental class using Busy Book was higher (an average of 13.25 points) than in the control class (an average of 8.00 points). The normality test ($\text{sig} = 0.200 > 0.05$) proved that the data were normally distributed, while the homogeneity test ($\text{sig} = 0.618 > 0.05$) indicated homogeneous variance. The t -test ($\text{sig} = 0.000 < 0.05$) confirmed a significant difference between the two groups. The effect size value $d = 2.22$ is categorized as very strong, so it can be concluded that the use of Busy Book is effective in improving the fine motor skills of children aged 4–5 years at KB Ainul Husna, Padang Panjang City. This study has limitations in the relatively small number of samples and only involved one PAUD institution, so the results cannot be generalized widely. In addition, the study only focused on the fine motor aspect within a limited research period. Therefore, further research is recommended to involve larger and more diverse samples and examine the influence of Busy Book on other aspects of child development to obtain more comprehensive results.

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