

EFFECT OF USING E-BOOK BALANCING ECOSYSTEM BASED ON CHARACTER EDUCATION (RELIGIOUS VALUES) ON STUDENT LEARNING ACHIEVEMENT

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Abstract

This study aims to determine the effect of using e-book balancing ecosystem based on character education (religious values) on student achievement. This study used experimental research methods and the design used was a quasi-experimental design using post test only control design research. The sample to be used is 40 students of fifth grade Elementary School which are divided into two classes, namely the experimental class and the control class. The data collection techniques used were tests, documentation and observation. After conducting the research, it can be analyzed that the learning achievement scores of the two classes are higher in the experimental class than the control class. After testing the hypothesis (T-test), the results obtained are $T_{count} = 3,315 > T_{table} 1,686$ then H_0 is rejected and H_1 is accepted. Thus, it can be concluded that there is an effect of the application of a character education (religious values) -based ecosystem balance e-book on the learning achievement of fifth grade elementary school students. This can be proven from the posttest value obtained, from the results of statistical tests by obtaining $t_{count} (3,315) \geq t_{table} (1.686)$. Because $t_{count} \geq t_{table}$ then H_0 is rejected and H_1 is accepted. So that there is an effect of the application of the e-book balancing ecosystem based on character education (religious values) on the learning achievement of elementary school students.

Keywords: e-books, character education

INTRODUCTION

Indonesia is a Pancasila State which means that Indonesia has Pancasila in an effort to maintain the unity and integrity of the nation. The diversity that exists in Indonesia is the hallmark of the Indonesian nation. One of the values contained in Pancasila is the divine value. This shows that Indonesia is a religious country that always involves divine values in all aspects of life. Divinity is listed in the first sisal Pancasila which reads God Almighty.

Giving religious values is also one of the main things in learning. This is evident in the curriculum currently used in Indonesia, namely the 2013 curriculum (Fahmy, 2015:112) that religious values are the first Core Competencies for students to master. The material and information given to students are expected to always prioritize and integrate religious values.

The giving of religious values is also reflected in the character education given to students. The importance of character education in education is needed for the formation of a dignified character to become a better human being (Sukma, 2017: 184–198).

Recently, we have often encountered in national news that there are often problems related to character problems in children and adolescents (Snyder, 2013: 50-58). The provision of character education from an early age is expected to be able to shape better humans and be able to prepare themselves to socialize in society. Family is the smallest scope that can provide character education for children. After that character education is provided by schools and communities (Shoshani, 2019: 86-102).

Schools have an important role in shaping character education because children have many characters that teachers can develop (Rolina, 2014: 170-174) so that teachers must be creative in order to develop character in children. The provision of character education in schools can be implemented in teaching and learning activities. At the time of the Covid-19 pandemic, many children's learning activities were carried out at home. So that teachers must have creativity in using learning tools that students can use from home and can provide character education to children.

Information and communication technology that is so fast can make it easier for teachers to do learning (Waheed, 2017: 368–379) to carry out distance learning for students. On the other hand, the existence of increasingly advanced education has created new generations that are smart and promising for the future of the nation. One of the factors that influence students' understanding of the material presented is the availability of learning facilities. The learning facilities in question are books as teaching materials and learning media that can help students in learning in class. Student teaching materials also need to be the main focus of the teacher.

E-books are learning media that can be used by teachers in accordance with the development of information and communication technology. E-books are books that can only be opened via electronic media including by using a smartphone so that e-book storage is more flexible and more compact than printed books. With the e-book students will be more happy and motivated in learning (Lai, 2015: 57).

The use of e-books can make it easier for readers to learn something because by using e-books, readers will find what they want to learn (Korat & Or, 2010: 139–154.). E-books have several advantages that printed books do not have, including e-books that are not as easily damaged as printed books. Previous research has shown that the use of e-books in learning is well accepted by students and parents so that their existence can provide solutions for distance learning that is currently being implemented due to the Covid-19 pandemic.

E-books equipped with character education will be able to realize the ideals of education, namely to educate and shape / develop the character of students to become good human beings and ready to enter the community. In addition, with the e-book, students will better understand and be able to analyze existing material to be able to find the right solution in every life problem. With this character-based education, it is hoped that it can provide more achievements for children to develop knowledge and develop their character. Learning using e-book media can be done anywhere, both at home and at school. Because in this e-book the balance of the ecosystem based on character education (religious values) is accompanied by a worksheet that can activate the role of students in learning because learning is constructive.

METHODS

In this study, using a Quasi Experimental Design with this type of research is Post test Only Control Design. The population in this study were students of fifth grade total 76 students who were in four elementary schools. The sample to be used is 40 students of fifth grade Elementary School which are divided into two classes, namely the experimental class and the

control class. The sampling technique used is cluster random sampling. This study used two classes, namely the experimental class and the control class selected randomly or randomly. The data collection techniques used by researchers in this study were tests, documentation, and observations. In this study, two data analysis techniques were used in this research, namely the feasibility test of questions and data analysis. In the item feasibility test, there are 4 tests including the first, namely the question validity test, in the question validity test the researcher uses IBM SPSS 25 to help with calculations. The second is the reliability test, with the formula:

$$r_{11} = \left(\frac{k}{k-1} \right) \left(\frac{V_t - \sum pq}{V_t} \right)$$

The question is said to be reliable if r_{count} is greater than r_{table} with a significant level of 5%. The third is the difference power test, researchers use the IBM SPSS 25 to make it easier for researchers to calculate the difference power test. Criteria from the results of the difference power test are 0.00 - 0.02 "bad", 0.21 - 0.40 "enough", 0.41 - 0.70 "good", 0.71 - 1.00 "very good". The last is the difficulty level test, which is used to determine the level of difficulty of each question. The criteria of the difficulty level test are 0.00 - 0.30 "difficult", 0.31 - 0.70 "moderate", 0.71 - 1.00 "easy". After conducting a feasibility test, the researcher conducted a data analysis test consisting of a normality test, a homogeneity test and a hypothesis test. The first is the normality test using the Lilliefors method with a significance level of $\alpha = 0.05$. $L_{Table} > L_{maxs}$ then H_0 is accepted. Second, the homogeneity test, if $F_{count} < F_{table}$, then H_0 is rejected and H_a is accepted (price of homogeneous variant). And if $F_{count} > F_{table}$, then H_0 is accepted and H_a is rejected (price of heterogeneous variant). To find F_{table} , it can be searched with $(dk)_{n1-1}$ and $n2-1$ with a significance level of $\alpha = 0.05$. Finally, the hypothesis test is used to test data derived from students' post-test scores. If $T_{count} < T_{tabel}$ then H_1 is rejected and H_0 is accepted. $T_{count} > T_{table}$ then H_1 is accepted and H_0 is rejected.

RESULT AND DISCUSSION

The purpose of data analysis in this study is to test the hypothesis that has been stated, namely to prove the effect of the e-book balancing ecosystem based on character education (religious values) on learning outcomes of fifth grade elementary school students. To determine valid and invalid, it can be determined by comparing the r_{count} and r_{table} values, namely $r_{\text{count}} < r_{\text{table}}$ (invalid) and $r_{\text{count}} > r_{\text{table}}$ (valid). For more details, the results obtained from the validity test using the IBM SPSS 25 and getting the results of 20 questions were considered valid. After the researcher tested the validity, the next thing to do was to test the reliability. This reliability test was used by researchers to determine the consistency of the scores obtained when retested using the same questions. In the reliability test, researchers used IBM SPSS 25 with 20 students as respondents. The question is said to be reliable if r_{count} is greater than r_{table} with a significant level of 5%.

Based on the results of the reliability test, it can be seen that $r_{\text{count}} = 0.879$ and $r_{\text{table}} = 0.444$. From the instrument reliability value (r_{11}) $0.879 > 0.444$, the instrument is declared reliable. Furthermore, the difficulty level test, the difficulty level test is used to find out whether the question belongs to the easy, medium or difficult questions. In this test the researchers used the IBM SPSS 25. In the test of the difficulty level, the clarification of the difficulty level of the items, if the results of the calculation are $0.00 - 0.30 = \text{Difficult}$, $0.31 - 0.70 = \text{moderate}$, and $0.71 - 1, 00 = \text{Easy}$. Based on the results of the difficulty level test, it can be seen that the results of the 20 questions tested show that there are 19 questions that fall into the moderate difficulty level criteria, and 1 number are included in the criteria for the difficult difficulty level. The last one is the difference power test, to find out the results of the difference power using r_{count} on SPSS which is compared with the criteria $0.00 - 0.20 = \text{bad}$, $0.21 - 0.40 = \text{enough}$, $0.41 - 0.70 = \text{good}$, and $0.71 - 1.00 = \text{very good}$. Based on the results of the difference test, it

is known that the results of the 20 questions tested show that there are 19 questions that are categorized as good, and 1 question were categorized as very good.

In this study, researchers conducted research on the experimental class and the control class. The following is the experimental class and the control class. In the experimental class, researchers used e-book balancing ecosystem based on character education (religious values) to determine whether or not there is an effect of e-book balancing ecosystem based on character education (religious values) on learning achievement. Meanwhile, for the control class, the researcher did not use the e-book on ecosystem balance based on character education. At the end of the study, the researcher conducted a posttest to get the value of cognitive learning achievement from the experimental class and the control class. The data presented in this study were data on student scores at the end of learning from cognitive, affective and psychomotor learning outcomes, which then the value data researchers would use to test the research hypothesis. The following is data on student cognitive, affective and psychomotor learning outcomes from the experimental class and the control class.

Table 1. Comparison of the Average Value of Learning Outcomes in the Experiment Class and the Control Class

Value Interval	Average Value Frequency	
	Experiment Class	Control Class
61 – 70	0	1
71 – 80	3	9
81 – 90	11	5
91 – 100	6	5
Total	20	20

The conclusion from the learning outcome data of the experimental class and the control class above regarding the average value of cognitive, affective, and psychomotor learning outcomes can be seen that there are differences in the scores obtained by students between the experimental class and the control class.

The next step taken by researchers is to conduct a prerequisite test. The prerequisite test includes normality test, homogeneity test, and hypothesis test. The first is to test for normality using the Liliefors method, with a significance level of $\alpha = 5\% = 0.05$. From the analysis of the normality test, in the experimental class $L_{count} (0, 131) < L_{table} (0.190)$ then H_0 is accepted, for the control class $L_{count} (0.116) < L_{table} (0.190)$ then H_0 is accepted. Thus the data obtained from the experimental class and the control class came from populations that were normally distributed. The second is to do the homogeneity test. In this study, the homogeneity test used the F test formula with a significance level of $\alpha = 0.05$, then the F table was obtained 2.17. If $F_{count} < F_{table}$ then H_0 is rejected and H_a is accepted (price of homogeneous variant). And if $F_{count} > F_{table}$ then H_0 is accepted and H_a is rejected (price of heterogeneous variant). From the calculation of the homogeneity test the final results are obtained as in the following table. Based on the results of the homogeneity test in the experimental and control class, the largest variance was in the control class, namely 61.40 and the smallest variance was in the experimental class, namely 39.29. So it can be concluded that $F_{count} (0, 625) < F_{table} (2.17)$ then H_0 is rejected (Homogeneous).

The hypothesis in this study was calculated using the t-test (t-test) with a significance level of $\alpha = 0.05$. The testing criteria for H_0 are rejected or H_1 is accepted, if $t_{count} > t_{table}$, $H_1 =$ Implementation of the e-book balancing ecosystem based on character education (religious values) on the learning achievement of elementary school students. The results of the hypothesis test can be seen in the following table. Normality and homogeneity tests were carried out as prerequisite tests before the t-test was performed. The result of the prerequisite test is that the data in this study are normally distributed and homogeneous. The hypothesis in this study was calculated using the t-test (t-test) with a significance level of $\alpha = 0.05$. The testing criteria for H_0 are rejected or H_1 is accepted, if $t_{count} > t_{table}$, $H_1 =$ the application of the e-book of ecosystem balance based on character education on the learning achievement of elementary

school students. The results of the hypothesis test can be seen in the table 3. From the t-test analysis, it is obtained that $T_{count} = 3,315 > T_{table} 1,686$, so the decision to test H_0 is rejected or H_1 is accepted. Thus, the application of a character education-based ecosystem balance e-book on the learning achievement of fifth grade elementary school students.

Table 3. Summary of Hypothesis Test Result

S1²	S2²	dk	T_{count}	T_{table}	Decision
39,29	61,40	38	3,315	1,686	H ₁ accepted

Learning using a character education-based ecosystem balance e-book has an influence on the learning achievement of fifth grade elementary school students. By learning using e-books, the learning achievement value is better than learning not using e-books. So that the use of e-books is now increasingly popular among the public (Jones, 2011: 5–22). In addition, learning to use e-books can increase the speed in understanding a text compared to reading printed books (Huang & Liang, 2015: 864–876). One of the factors that can affect the speed of understanding of reading is because students feel happy in learning to use e-books (Lai, 2015: 57).

CONCLUSION

Based on data analysis and discussion of research results, it can be concluded that there is an effect of the application of a character education-based ecosystem balance e-book on the learning achievement of fifth grade elementary school students. This can be proven from the posttest value obtained, from the results of statistical tests by obtaining $t_{count} (3,315) \geq t_{table} (1.686)$. Because $t_{count} \geq t_{table}$ then H_0 is rejected and H_1 is accepted. So that there is an effect of the application of the e-book balancing ecosystem based on character education (religious values) on the learning achievement of elementary school students.

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