The Effectiveness of Using Mathematics Books in Islamic Studies for Students of Tadris Mathematics Study Program

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Abstract. A good book is a book that serves as an effective learning tool. Potentials and problems indicate that the required references (valid, practical and effective) are still very limited so that students experience difficulties in the learning process. Therefore, it is necessary to investigate this problem further. This research method is R&D which is more focused on effectiveness by looking at the results of the pretest-posttest using t-test analysis. The research was conducted in the Tadris Mathematics Study Program with a total sample of 50 people.

Keywords: effectiveness · mathematics books · students of tadris mathematics study program

1 Introduction

Education is a process of changing one's behavior and abilities towards progress and improvement. Education can change a person's mindset to always innovate and improve in all aspects of life towards improving self-quality [1]. As in mathematics education, students are expected to have increased mathematical abilities after they go through the learning process in mastering mathematical material.

Mathematics has a great influence in human life, whether we realize it or not, in fact a person's life is always related to mathematics. But for most people think that mathematics is a very heavy and difficult subject [2]. Mathematical work is generally in the realm of ideas, therefore the object of mathematical work is abstract [3]. According to Ruseffendi Abstract mathematical objects include: Direct objects, namely facts which are numbers or symbols of numbers, skills, namely the ability to give correct and fast answers, concepts are extract ideas that allow us to group objects (objects) into examples, rules are objects the most abstract. While the indirect objects include: the ability to investigate, the ability to solve problems, the ability to learn and work independently, have a positive attitude towards mathematics.

In mathematics there is also the principle of honesty[3]. Where when we do the process in mathematics and it is not in accordance with the existing principles or theorems, of course our work will be wrong. And one can neither evade that nor argue on grounds other than mathematics to justify the erroneous work. On the other hand, one cannot blame a proven definition or theorem to achieve the goal of the calculation one wants. As an example:

If in mathematics it is agreed that $-2 \times 4 = -12$, Of course you can't justify $-2 \times 4 = 12$. Under any pretext one can't argue with that because the goal is to earn 12.

Based on the importance of inculcating Islamic values in mathematics, it is necessary to have textbooks or teaching related to mathematics and Islamic studies. Books are a source of teaching materials. Science, information, and entertainment, therefore, books are a mandatory component that must exist in educational institutions, both formal and non-formal educational institutions. A good book is a book that serves as an effective learning tool. that can help students learn. Textbooks have an important role for teachers and students apart from being a learning reference material and as a means to help students learn, textbooks also help students to understand the material they will learn by reading and understanding it.

Mathematics tadris study program is a study program that was established in 2016 which in its development this study program has characterization courses as its advantages, namely mathematics courses in Islamic studies. The material in this course includes discussing Muslim mathematical figures, letters and verses of the Koran which contain mathematical concepts and applications of mathematics in human life. However, in the course of this course, there are obstacles in finding complete source material so that students have problems in studying it. So this book was developed using the R & D research method using the design of Prof. Sugiyono [4] with the steps that must be followed to produce a product including the potential and problem stages, data collection, product design, design validation, product design revision, product testing, product revision, usage trials, product revisions, and mass production and effectiveness testing. The use of mathematics books in Islamic studies in the lecture process.

The use of mathematics books in Islamic studies is expected to provide benefits to students both cognitively, affectively and psychomotorly and can provide noble values to form a national character. The integration of mathematical concepts with Islamic values is very important to be applied as a way of forming national character. Thus, it is necessary to continuously develop the analysis of mathematical material by linking the verses contained in the Al-Quran which is the source of all sources of knowledge that can be taken by every human being through mathematics [3].

2 Method

This research method is R&D which is more focused on effectiveness by looking at the results of the pretest-posttest using t-test analysis. The research was conducted in the Tadris Mathematics Study Program with a total sample of 50 people.

The development of this book uses the development model according to Sugiyono [4], The research and development steps consist of 10 steps as follows: (1) Potential and problems, (2) Data collection, (3) Product design, (4) Design validation, (5) Design

revision, (6) Product trial, (7) Product revision, (8) Trial usage, (9) Product revision, and (10) Mass production.

The data obtained is data about the state of mathematics books in Islamic studies. This data was collected through expert validation, questionnaires distributed to students. The assessment instrument for validators and individual, small group and limited field trials is made in the form of a Likert scale that has been scored. Then the data were analyzed descriptively quantitatively, namely calculating the percentage of indicators for each category in the developed book.

Furthermore, the product effectiveness test was carried out on the population, namely students of the IAIN Bengkulu Mathematics Study Program. The instrument used is a test of learning outcomes in aspects of knowledge. Before being used in the learning outcomes test, the learning outcomes test instruments need to be tested first. For this reason, validity, reliability, difficulty index and discriminating power are carried out. Before testing the effectiveness, it is necessary to test for normality and test for homogeneity. Furthermore, hypothesis testing using a paired sample t test can be carried out because the data has met the normality prerequisite test. The criteria for hypothesis testing are carried out at a significance level of 0.05 with the help of the program SPSS 22 for Windows.

3   Result and Discussion

Based on data analysis to see the effectiveness of the development of mathematics books in Islamic studies, data analysis uses the test T paired. Before doing the test T paired then the normality test is first carried out in the Table 1 and homogeneity test on the Table 2.

By conducting a normality test with the following hypothesis:

H_0: Data is normally distributed (p-Value > 0.05)
H_1: Data is not normally distributed (p-Value < 0.05)

In Table 1 it can be seen that the pre-test and post-test in the test Kolmogorov-Smirnov significant value (p-value) > 0.05, with each value sig pretest 0.149 and sig posttest as big as 0.2, which means we take the decision to accept Ho (Data is normally distributed). Then proceed with the homogeneity test by generating data analysis on the following hypothesis:

Table 1. Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre_Test	.113	50	.149	.896	50	.000
Post_Test	.099	50	.200[*]	.961	50	.096

Table 2. Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.205	.275	-4.318	98	.000	-10.140	2.348	-14.800	-5.480
Equal variances not assumed			-4.318	96.968	.000	-10.140	2.348	-14.801	-5.479

H_0: Homogeneous Data (p-Value > 0.05)
H_1: Data is not homogeneous (p-Value < 0.05)

Based on Table 2. that significant value (p-value) > 0.05, with value sig 0.275 which means we take the decision to accept Ho (Homogeneous Data) which means that there is a similarity of variance between groups or which means that the data is homogeneous. Next, proceed with the test T.

Research Hypothesis (Uji T Paired).

H_0: There is no difference in pre-test and post-test scores after learning by using math books with Islamic studies.
H_1: there is a difference in the value of pre-test and post-test after learning by using math books with Islamic studies.

With the results of data analysis as shown in Table 3.

Sig. (2-tailed): probability value/p value test T Paired: results = 0,000. Assuming that H_0 rejected and H_1 accepted. Meaning: there is a difference in value pre tes dan post tes after learning by using mathematics books with Islamic studies. Because: p value < 0,05 (95% trust).

Thus, it can also be said that mathematics books in Islamic studies have succeeded in making student achievement good. Karamouzian [5] which reveals that textbooks are a central point in learning because the quality of textbooks can function as a determining factor for the high and low quality of language learning. According to Priyanto [6] textbooks can support the realization of the program *student centered learning (SCL)*, where the learning paradigm in schools is directed more at students as learning subjects and teachers only act as facilitators.

Table. 3 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre_Test - Post_Test	-10.140	16.951	2.397	-14.95	-5.32	-4.23	49	.000

The results of this study are in line with research Kustiah [7] in his thesis on the development of textbooks and student activity sheets to teach class fraction material V SD shows the results that there is a significant difference in student learning outcomes between before learning to use textbooks and after learning using textbooks. The level of effectiveness of textbooks in improving learning outcomes is high, this means that students' learning outcomes increase after using textbooks.

Learning based on Islamic studies, will realize the importance of learning carried out by students or students [8]. The spirit of learning can be grown with the basic values of Islamic teachings, namely learning is worship. Education will be worth a prayer if it is carried out with sincerity because of Allah SWT. The more sincere the student in learning, the higher the value of the reward. Without these religious values, it is unlikely that students will be enthusiastic in learning which of course is also less than optimal in achieving complete learning.

Mathematics books in Islamic studies are also focused on mastering mathematical material based on the Qur'an. Mastery of concepts is very important to be implanted in students' understanding [9]. Understanding mathematical concepts is very important because mastery of concepts will facilitate students in learning mathematics. In each learning effort more emphasis is placed on mastering concepts so that students have a good basic foundation to achieve other basic abilities such as reasoning, communication, connection and problem solving. Mastery of concepts is the level of student learning outcomes so that they can define some learning materials using their own sentences. With the ability of students to explain or define, students have been able to understand the concept or principle of a course even though the explanation given has a sentence structure that is not the same as the concept of the material which has the same meaning.

In this mathematics textbook in Islamic studies, there are several goals for increasing the mathematical abilities possessed by students [8]. Mathematical abilities consist of: Mathematical reasoning, mathematical communication, mathematical problem solving, concept understanding, mathematical understanding, creative thinking and critical thinking.

Based on the results of this study, it can be stated that the use of mathematics books in Islamic studies can improve student learning outcomes. Apart from student achievement, it can also be seen from several sides, the importance of using mathematics books in Islamic studies, this is in line with Ma'arif [3] stated that stating that mathematics

learning needs to undergo changes in an effort to improve the quality of education so that it can improve mathematics learning outcomes to a better stage. Therefore, efforts continue to be made to realize an innovative learning in accordance with the times and technology. In addition, every teaching must provide benefits to students both cognitively (intelligence), affective (attitude) and psychomotor (practice) can provide good values to form a positive personality character in this life.

4   Conclusion

The book product of Mathematics in Islamic Studies developed meets the requirements and is suitable for use as a learning book, based on the assessment of material experts, learning design experts, learning media experts, student responses to individual trials, small group trials, and limited field trials of textbooks developed is included in the very good category so that it can be accepted and deserves to be used as a textbook. The use of Mathematics in Islamic Studies is more effective in improving learning outcomes, this is indicated by the learning outcomes of students who are taught using Mathematics in Islamic Studies have increased student learning outcomes by analysis using the Test T paired on pre tes dan post tes Sig. (2-tailed): Probability value/p value test T Paired: results = 0,000. Assuming that H0 rejected dan H1 accepted. It means: there is a difference in the pre-test and post-test scores after learning by using mathematics books with Islamic studies. because: p value < 0,05 (95% trust). Thus, it can also be said that mathematics books in Islamic studies have succeeded in making student learning achievements good.

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