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Development of Learning Devices Mathematics Based on Spiritual Values for State Elementary School Students in Sumenep Regency

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Abstrak

Pengembangan perangkat pembelajaran ini merupakah salah satu upaya memperkuat kecerdasan peserta didik dalam segala aspek, terutama aspek spritual. Pengembangan pembelajaran matematika merupakan salah satu bagian dalam upaya membentuk kecerdasan spiritual di kalangan siswa yang pada kemudian dapat menjadi generasi macu dalam peradaban teknologi saat ini. Matematika tidak hanya diajarkan sebatas ilmu berhitung, tetapi juga menjadi ilmu agama yang sangat penting bagi peserta didik dalam membentuk karakternya.

Penelitian ini merupakan penelitian pengembangan perangkat pembelajaran matematika teologis, yang menggambarkan tentang validitas (perangkat pembelajaran), kepraktisan (keterlaksanaan pembelajaran), dan keefektifan (aktivitas siswa, respon siswa, ketuntasan hasil belajar siswa, serta kendala yang dihadapi selama proses pembelajaran). Penelitian ini dilaksanakan dengan beberapa tahapan. Pertama, tahap pengembangan perangkat pembelajaran terpadu yang dilaksanakan dengan mengadopsi model pengembangan pembelajaran 4-D, diantaranya *Define, Design, Develop,* dan *Dissiminate*. Kedua, tahap penelitian terhadap perangkat pembelajaran di SDN di kabupaten Sumenep.

Hasil penelitian menggambarkan tentang perangkat pembelajaran yang dilakukan pada penelitian ini, Pertama, validitas perangkat pembelajaran matematika teologis, RPP, BAS, LKS dan LP dinggap valid dan layak untuk digunakan. Kedua, kepraktisan perangkat pembelajaran diambil dari data pengamatan keterlaksanaan pembelajaran dalam setiap pertemuan. Ketiga, keefektifan dari perangkat pembelajaran yang dikembangkan dapat dilihat dari data aktivitas siswa, respon siswa, tes hasil belajar siswa, baik aktivitas siswa, respon siswa, hasil belajar siswa dapat dikatagorikan baik.

Kata Kunci :
Kata Kunci: **Pengembangan, Perangkat Pembelajaran, Matematika, Berbasis Karakter Spiritual**

Development of Learning Devices Mathematics Based on Spiritual Values for State Elementary School Students in Sumenep Regency

Abstract

The development of this learning tool is an effort to strengthen the intelligence of students in all aspects, especially the spiritual aspect. The development of mathematics learning is one part of the effort to form spiritual intelligence among students which in turn can become the prime generation in today's technological civilization. Mathematics is not only taught as arithmetic, but also becomes a very important religious knowledge for students in shaping their character. This research is a research on the development of theological mathematics learning tools, which describe validity (learning tools), practicality (learning implementation), and effectiveness (student activities, student responses, completeness of student learning outcomes, and obstacles encountered during the learning process). This research was carried out in several stages. First, the stage of developing integrated learning tools which is carried out by adopting the 4-D learning development model, including Define, Design, Develop, and Dissimilate. Second, the research stage is on learning tools at SDN in Sumenep district.

The results of the study describe the learning tools used in this study. First, the validity of the theological mathematics learning tools, RPP, BAS, LKS and LP are considered valid and feasible to use. Second, the practicality of learning tools is taken from observational data on the implementation of learning in each meeting. Third, the effectiveness of the developed learning tools can be seen from the data of student activities, student responses, student learning outcomes tests, both student activities, student responses, student learning outcomes can be categorized as good.

Keywords: Development, Learning Devices, Mathematics, Based on Spiritual Character

Introduction

Every nation has a target of creating a smart and educating life. With a smart society, one step to build a civilized life has been created. Building a society with holistic intelligence can be said as part of a series of efforts to become a quality nation. At least, this mission also inspired the founding fathers of this nation to fight hard for their first independence.

In the context of strengthening the mission to educate the life of the Indonesian people, then that spirit was included in the 1945 Constitution. Because one of the spirits in the law is to create an intelligent nation's life (Dewi, 2020: 1). Of course, the multiple intelligences that must be formed include intellectual intelligence and spiritual intelligence. Educational institutions are the most effective means of creating that intelligent life. A Busyro Karim (2015: 73) emphasized that progress will be made if it is supported by the quality of advanced human resources and human resources will develop rapidly, if it is supported by maximum education.

Sato (in Hobri, 2020: 4) emphasized that schools are learning communities, where students and teachers as education experts learn and develop from each other, and parents and the community also support and are involved in school reform by learning and developing from each other. . Furthermore, the school as a learning community is to realize the school's public mission, namely "realizing the right to learn for everyone and improving the quality of learning" and preparing a democratic society.

With spiritual intelligence that is awakened in students, it will definitely have an impact on stronger self-abilities in living life. Tough and tenacious are the characteristics of a person with a strong religious character. Every person who has a religious character, he will be a person who always has the intelligence to solve every problem he faces. Therefore, mathematics is also a means for learning to solve problems, so learning mathematics, automatically learns to be thorough in solving the problems encountered. As written by Husna, 2013 (in Yustianingsih, et al, 2017) that problem solving ability is one of the abilities that is still a concern in learning mathematics.

In that context, the learning process, which is an important segment in education, has a big contribution to shaping the character of every student in all respects, including religious (spiritual) character which is urgently needed to be prioritized. Without a strong religious character, every student will only be a generation that is dry, lacks and does not have a strong hold on divine values as the main basis for living their lives as religious individuals.

In an effort to create an interesting and innovative learning process, especially in learning mathematics, which has been overly stigmatized as material that is frightening so that it is less liked by students. To anticipate this, certain learning strategies are needed so that students can take part in mathematics learning activities as best they can.

The learning process, which is the most urgent part of education, has a major role in shaping the character of each student in all aspects, one of which is the aspect of religious (spiritual) character which is urgent to prioritize. Because without a strong religious character, it will affect the identity of students.

In this connection, learning mathematics actually contains religious character values that are quite meaningful, so that it can be used as a means of forming religious character. Spiritual intelligence with all indicators possessed, so that it can form a complete human identity.. The process of learning mathematics has a role which is important in forming students with religious character with all possible

approaches. The content of religious meaning contained in mathematical material.

In general, in this study the problem can be raised as a problem formulation, namely "how is the relevance of validity, practicality and effectiveness of this spiritual values-based mathematics learning tool in the development of students' spiritual intelligence at SDN Talang 1 Saronggi, Sumenep Regency?

Method

This research is a type of development research that emphasizes the development of learning tools in theological mathematics learning in the context of developing the spiritual intelligence of elementary school students. In learning theological mathematics, it is focused on the subject of integers, fractions and prime numbers. While the learning tools used include lesson plans, BAS (Student Teaching Materials), LKS (Student Worksheets) and assessment sheets (LP). The application of learning tools was carried out using the research design The One Group Pretest-Postest Design. This was done because in this study only used one group, without other groups as a comparison. The following is a table of The One Group Pretest-Posttest Group research design

Table 1:
One-Group Pretest-Posttest Design
Pretest Treatment Posttest Design

O_1	X	O_2 Arikunto, (2010: 124)

Information:

O_1	= Initial test (Pretest), to determine students' initial abilities before treatment. = Final test (Posttest), to determine mastery of the material after treatment. = Treatment using an integrated learning model of the nested type
O_2	
X	

The data collection technique used in this study consisted of 3 techniques, namely observation, tests and questionnaires. Technical analysis of data using several instruments (1) analysis of the validity of learning tools, (2) analysis of the implementation of learning, (3) analysis of student activities, (4) analysis of student responses, (5) analysis of student learning outcomes tests.

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Results and Discussion

In general, the results of developing learning tools and their implementation, both in pretest and posttest activities, are quite realistic and relevant. The research was conducted as an effort to find out the development of mathematics learning tools to develop the spiritual intelligence of elementary school students, covering several things, namely the development of theological mathematics learning tools, the implementation of learning activities, student activities, student responses, student learning completeness. All of this can be explained in detail as follows:

- **Learning Device Validation**

Learning device validation was first carried out by the author before the research activities were carried out. The learning tools that were validated consisted of RPP, Student Textbooks (BAS), Student Activity Sheets (LKS), Assessment Sheets (LP), student activity observation sheets, lesson plans implementation sheets, and student response questionnaire sheets. Validation is carried out by experts who have competence in their fields, with the aim that the designed learning tools can be used in this research. The results of the validation of the RPP developed in this research activity, based on the results of the validation, obtained a score of 3.64, in the good category and slightly revised. These results can be explained that the RPP that has been formulated by researchers is already relevant to the learning indicators that will be achieved by students, so that the RPP becomes valid and feasible to be used as a learning tool. Meanwhile, the Student Teaching Materials (BAS) used as material in this study also received an average score of 3.36 in the good

category and slightly revised. With this score, the Student Teaching Material (BAS) that has been made is declared valid and suitable for use as a learning tool. With the formulated device, it can be an indicator to determine whether or not learning objectives are achieved. Moreover, good learning tools will determine the quality of the learning carried out (Dewi, 2017: 367-368). Then, related to the Student Activity Sheet (LKS) based on existing data it has been declared valid, with an achievement score of 3.46, so it is categorized as good. The results can be illustrated that the Student Activity Sheet (LKS) that has been formulated is suitable use as a learning instrument. Likewise with the validation of the student's Assessment Sheet (LP), that the validation score of the assessment sheet (LP) reached 3.42 in a good category with

- **Implementation of Learning Activities**

Based on the observational data on the adequacy of the theological mathematics learning activities, it was observed that they were categorized as good. This is based on an analysis of the results of observations of student activity obtained in pretest activities, showing that the average frequency of student activity ranges from 1.5% to 27.8%, in learning I, in learning II it ranges from 3.6% to 25, 8%, and in learning III ranged from 2.0% to 27.5%.

- **Student Activities in the Learning Process**

From the results of observations on student activities it can be described that student activities while participating in learning activities were quite active, both during meeting 1, meeting 2 and meeting 3. Based on the results of an analysis of existing data, it is described that if the average for preliminary meeting I achieved score 4, meeting II achieved score 4, and meeting III achieved score 4. Meanwhile, the problem of time management at meeting I was 4, at meeting II was 4, and meeting III was 4. Finally, the class atmosphere at meeting I achieved, at meeting II reached 4, and meeting III amounted to 4.

- **Response to the Learning Process**

Student responses to aspects of the learning process on average responded positively, for example it can be explained that on average students who feel happy about the learning carried out at the first meeting, students who feel happy, reach a score of 92%, while students who feel unhappy only reached 7%. In meeting II, the average number of students who were happy reached 100%, and students who were not happy only reached 0%. Likewise with meeting III, the average number of students who were happy reached 100%, and students who were not happy only reached 0%.

- **Mastery Learning Outcomes**

Completeness of learning outcomes in this study was carried out by referring to several aspects, namely. First, completeness of knowledge learning outcomes (cognitive). The main purpose of the test (assessment sheet) conducted is to find out about the level of achievement of learning objectives. In this study, several tests were carried out, namely the pretest (initial exam) and posttest (final exam). The results of the pretest and posttest conducted in this study experienced a fairly positive increase.

Based on existing data, it shows that the learning process carried out has been well received by students. This is illustrated by the learning outcomes that fall into the high category, because it can achieve scores ranging from 0.7 to 1.0. This achievement was produced because the learning process had been carried out well and optimally. Students' knowledge and understanding of the posttest score shows a number with a fairly high increase compared to the pretest score. Knowledge learning outcomes test (cognitive in the form of an assessment sheet (LP) is a test that measures aspects of knowledge (C1), understanding (C2), application (C3), analysis (C4), synthesis (C5), and assessment (C6). Both , mastery skills assessment (psychomotor). Based on the results of the analysis of the student's (psychomotor) skill assessment, it was stated that the student's skill level ranged from 71-100. Third, the completeness of the attitude assessment (affective).

The results of the analysis of the attitude (affective) assessment show that in each aspect that is measured partly increases at each meeting, because the average value obtained is on aspects of spiritual values, both aspects of siddig, amanah, tabligh, istiqomah and fathonah with all indicators of each aspect, with an average level of achievement with a value of 2 (two)

Conclusion

Based on the research that has been carried out, the learning tools used in this study are, first, the validity of the math learning tools,
lesson plans, BAS, LKS and LP are considered valid and feasible to use.

Second, the practicality of learning tools is taken from observational data on the implementation of learning in each meeting. The implementation of learning with the mathematics learning model went well and there was an increase in the management of learning
carried out by the teacher at each learning implementation meeting both at meetings 1, 2 and 3. Third, the effectiveness of the learning tools developed can be seen from student activity data, student responses student learning outcomes tests, both student activities, student responses, student learning outcomes can be
categorized as good. For this reason, mathematics learning tools based on spiritual character values are declared feasible based on several indicators (learning implementation, student activities, student responses, and learning achievement tests).

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