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Increasing Learning Motivation and Learning Outcomes in Mathematics using Modules for Elementary School Students

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ABSTRACT

This study aims to confirm the use of the module to improve learning motivation and learning outcomes of mathematics in elementary schools. This module is a learning resource for learning activities. The module can be a manual module or an electronic module. The type of data used is secondary data. The method used in this research is the literature study method. The data obtained were collected, analyzed and concluded to draw conclusions about the literature study. Based on several research results and the results of library research from books and journal articles, the following are presented: (1) Modules can be used to motivate students to learn. (2) Modules can be used to improve student learning outcomes.

Keywords: Problems, Thematic Learning, Online Learning

INTRODUCTION

The government's efforts to advance education can be seen through Law No. 20 of 2003 concerning the national education system. This law mandates major reforms in the current education system. Given the importance of mastering mathematical competencies for the lives of students in elementary, junior high, high school, and vocational schools, the government has issued Graduate Competency Standards (SKL) through Permendiknas no. 23 of 2006 as a continuation of Law Number 20 of 2003. With the Minister of National Education Regulation No. 23 of 2006, it is expected that teachers in their classroom learning can use methods or strategies that are able to actively involve students where learning is adjusted to the stage of students' thinking development, so that learning mathematics will have a positive impact on student achievement [1].

Education is an effort made consciously and intentionally to change behavior both individually and in groups to mature humans through teaching and training efforts [2]. Therefore, education is very important for the provision of human life, so that it can support human life in a better direction and character [3]. One of the important subjects in education is mathematics. Mathematics is a basic science that has become a tool for studying other sciences [4]. This shows how important the role of mathematics in education and technology development is today. It is undeniable that mathematics is very useful for anyone who studies it. Therefore mastery of mathematics is absolutely necessary.

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However, the development of mathematics learning in Indonesia is still relatively low according to data from TIMSS (Trends in International Mathematics and Science Study) and PISA (Program for International Student Assessment). The latest TIMSS results in 2015 showed that Indonesia was ranked 36 out of 49 countries, while the PISA results showed Indonesia was ranked 69 out of 76 countries. This shows that mathematics skills in Indonesia need to be improved while the PISA results show Indonesia is ranked 69th out of 76 countries [9]. This shows that mathematics skills in Indonesia need to be improved. [9] while the PISA results show Indonesia is ranked 69th out of 76 countries.

The main problem in learning mathematics for students in elementary schools is the use of conventional teaching materials. Conventional teaching materials are teaching materials that are still standard and limited to only presenting simple text and image materials [7]. The problem of using conventional teaching materials makes it difficult for students to understand teaching materials and makes learning motivation low. Besides thatMathematical literacy which focuses on student competencies and skills achieved from school and can be used in various everyday contexts has not yet been applied [8]. Based on the results of the literature review, the authors found the right alternative to overcome the low motivation of students to learn mathematics.

User Media in learning can make students feel happier because the learning atmosphere will feel different from the usual day. Students who enjoy learning mathematics say that their teachers show them how to solve math problems more often and they use the computer more often and do it on their worksheets or books [9].

In line with this, Amanda et al. explained that the development of expected can help teachers in delivering mathematics learning so that learning is more active, effective, fun, and can increase students' learning motivation. Bookwindowor this module is believed to increase student motivation[10]. Lili Barlia explained that the uniqueness of the teacher's personality in teaching and the teacher's broad support to students as needed seemed to be effective in helping students' motivation to learn in a meaningful way [11].According to Baidi, children are more openwith entertainment on social media, television,game, cell phones, computers greatly affect the lifestyle of children. This is in line with the concept of a module used for children's learning at home to reduce the use of social media tools[12].

The module is a book written with the aim that students can learn independently without or with teacher guidance, so that the module contains at least all the basic components of the previously mentioned teaching materials [11]. Module teaching materials are:Printed teaching materials that are easily developed by teachers are modules. The module functions as an independent learning tool, so that students can learn not only at school but can also learn independently at home [13].

Motivation is a driving force that changes the energy within a person into the form of real activities to achieve certain goals [14]. Student learning motivation is divided into two, namely intrinsic motivation and extrinsic motivation. This motivation arises as a result of an invitation, order, or coercion from other people so that he finally wants to do something or learn [15].

Student learning outcomes are grouped into three domains, namely (1) cognitive, (2) affective, and (3) psychomotor. The cognitive domain of learning outcomes according to Bloom includes mastery of concepts, ideas, factual knowledge, and with regard to intellectual skills. The affective domain is related to attitudes and values, which are divided

into five aspects, namely acceptance of answers or responses, assessment, organization, and internalization. The psychomotor domain is concerned with learning outcomes that are expressed in the form of skills to complete manual tasks and physical movements or the ability to act. Learning outcomes in this domain also include social aspects such as communication skills and the ability to operate certain tools. [16].

Based on the background description and literature review, suitable alternatives to overcome low learning motivation in school mathematics subjectsbaseis the use of teaching materialsmodule.It is hoped that the use of this module's teaching materials can increase the low motivation of elementary school students to learn mathematics and also improve student learning outcomes

MATERIAL AND METHODS

The research conducted is a literature review research. So that the data taken in this literature review research is secondary data. Secondary data is data taken not from direct observers but from the results of research by previous researchers. This data collection method uses the documentation method. The documentation method is a systematic data collection procedure for reviewing both printed and electronic documents [6]. The documentation method is a method of collecting data bylook foror dig up data from the literature related to what is meant in the formulation of the problem. The data analysis used in this research is bibliographic annotation analysis. Annotation means a simple conclusion from an article, book, journal, or some other written source, while a bibliography is defined as a list of sources on a topic [17].

RESULTS AND DISCUSSION

The results showed that through the use of teaching materials the module could overcome the low learning motivation of elementary school students. This is based on the data that the researchers collected. As the results of research which show that through life skills module teaching materials can increase students' motivation to learn mathematics [18]. Other research results regarding module teaching materials are: Development of Integrated Contextual-Based Mathematics Module in Islamic Sciences also delivered can increase students' learning motivation [5].

The CTL-based flat-shaped math module received assessments from material experts and media experts. The material expert assessment sheet consists of 4 aspects, namely the feasibility of the material/content, the appropriateness of the language, the feasibility of presentation and contextuality. The module assessment carried out by material experts scored 4.16 with good criteria. While the media expert assessment sheet consists of 2 aspects, namely construction and technical. The module assessment by media experts got a score of 4.2 with very good criteria.

Based on the assessment data of material experts and media experts above, the module developed is declared suitable for use. In terms of practicality, the learning devices developed were declared practical. Practical criteria obtained through student and teacher response questionnaires to the use of the module are 87, 5% with very good criteria for student responses and 36 with good criteria for teacher responses. In addition, the results of

the observation of learning implementation show very good criteria with an average percentage of learning implementation reaching 85%. In terms of effectiveness, the results of student achievement show the percentage of student completeness of 80.95% with very good criteria, so it can be declared effective because in the assessment table the results are in the very good category.

Based on the results of the assessment of the instrument, it can be concluded that the CTL-based flat shape mathematics module is declared feasible to be used to improve learning achievement [19]. The results of another study showed that a contextual-based mathematics module integrated with Islamic science on Linear Equation and Inequality Systems material showed a valid and practical module for use in SMA IT Azzuhra Islamic School [5]

In other studies, teaching materials are all forms of materials used to assist teachers/instructors in carrying out teaching and learning activities in the classroom. referred to can be in the form of written material or unwritten material. In other words, teaching materials are learning tools or facilities that contain materials, methods, limitations, and ways of evaluating that are designed systematically and attractively to achieve the expected competencies. Teaching materials will reduce the burden on the teacher in presenting the material (face to face), so that the teacher has more time to guide and assist students in the learning process [13].

The results of other studies have shown that the Life Skills-based Debit module is valid, practical, attractive, efficient, and can improve student achievement in Debit material. The results of material expert validation reached 87.5% and media expert validation results reached 96.8%. The average results of the practicality questionnaire reached a percentage of 88.35% and the student attractiveness questionnaire results reached a percentage of 94.1% in a small-scale trial. Meanwhile, for large-scale trials, the practicality level of the module reached 89.5%, the module attractiveness rate reached 92.5%, and the results of the student learning evaluation showed that 83.3% had completed learning or 31.3% higher than the pretest, which was 52%. Based on these results, the life skills-based module has been valid, practical, interesting, and effectively used in learning Mathematics for class VI [18].

Materials Module teaching materials include interesting interactive teaching materials. Through the use of interactive teaching materials in learningmathematicscan increase learning motivation for students [20]. So that the module developed can direct students' attention and encourage students' interest in learning mathematics [21].

CONCLUSION

Based on the background of the problem and the results of the literature study presented, the researcher concludes that through the use of teaching materials modules can be an alternative to overcome the low learning motivation of elementary school students in mathematics. The author hopes writing thiscan be an alternative study for teachers and related parties in overcoming resolve low learning motivation of elementary school students in mathematics. Several things can be used as suggestions from the research that has been done, namely the teaching materials of this module can be a reference for further researchers because there are still few teaching materials with mathematical literacy skills, it is necessary to develop further module teaching materials so that these module teaching

materials can be used and produced. It is necessary to update the content and design of the module teaching materials, so that they are always in accordance with the needs and the applicable curriculum.

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