INCREASING LEARNING MOTIVATION AND LEARNING OUTCOMES IN MATHEMATICS USING MODULES FOR ELEMENTARY SCHOOL STUDENTS

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Abstract. This study aims to look at the use of modules to improve learning motivation and learning outcomes in mathematics for elementary schools. Modules are a source of learning in learning activities. Modules can be either manual or e-modules. The type of data used is secondary data. The method used in this research is the literature study method. The data obtained were compiled, analyzed, and concluded in to get conclusions about the literature study. Based on the research results of literature studies from several research results and books and journal articles, it shows that: (1) the use of modules can increase student motivation. (2) the use of modules can improve student learning outcomes.

Keywords: modules, mathematics, learning motivation and learning outcomes, elementary school

**1. Introduction**

The government's efforts to advance education can be seen through Law Number 20 of 2003 concerning the national education system. This law mandates significant reforms in the current education system. Given the importance of mastering mathematical competencies for students’ lives in SD, SMP, SMA, and SMK, the government has issued a Graduate Competency Standard (SKL) through Permendiknas no. 23 of 2006 as a continuation of Law Number 20 of 2003. With the existence of Permendiknas No.23 of 2006, it is hope that teachers in their learning in the classroom can use methods or strategies that can actively involve students where education is adjust to the developmental stage of student thinking. So, that learning mathematics will have a positive impact on student achievement.[15]

The main problem in learning mathematics for students in elementary schools in the use of conventional teaching materials. Conventional teaching materials are standard teaching materials and are limited to presenting only simple text and images [13]. Using tradisional teaching materials makes it difficult for students to understand teaching materials and lowers learning motivation. Other than that Mathematical literacy, which focuses on students' competencies and skills achieved from school and can be use in various everyday contexts, is also still not applied[16]. Based on the results of the literature review, the writer found the suitable alternative to overcome the low learning motivation of students in mathematics.

Usagemedia in learning can make students feel happier because the learning atmosphere will feel different from the normal day. Students who think happy learning mathematics say that their teachers often show how to solve math problems in learning, and they use computers more often and do it on their worksheets or books[8].

In line with this, Amanda et al. explained that module development expected can help teachers deliver mathematics learning so that learning is more active, practical, fun, and can increase student motivation. Book window or This module is believe to increase the motivation of students [2]. Lili Barlia explained that the uniqueness of the teacher's personality in teaching and the broad teacher support to students as needed seems to be effective in helping motivate students to learn in a meaningful way. [5]. According to Baidi, some children are more open to entertainment on social media, television, game, cell phones, and computers, significantly affect the life patterns of children. This is in line with the module concept used for children's learning at home to reduce social media tools [4].

Modules are books that are compiled with the aim that students can learn without teacher guidance, or independently, so that the module contains at least all the essential components of the teaching materials previously mentioned[11]. Module teaching materials are of the printed teaching materials that taechers easily develop by teachers is the module. The module serves as an independent, learning tool, so that students can learn not only at school but also learn independently at home [12].

Motivation is an encouragement that is needed by a person to convert self-energy into real activities to achieve a goal. [7]. OnbasicallyStudent learning motivation is divide into two, namely intrinsic motivation and extrinsic motivation. This motivation arises from an invitation, order, or coercion from another person so that eventually, he wants to do something or learn. [18].

Student learning outcomes are group into three domains, namely (1) cognitive, (2) effective, and (3) psychomotor. The cognitive domain of learning outcomes, according to Bloom, includes mastery of concepts, ideas, factual knowledge, and about intellectual skills. The affective domain in relation attitudes and values, which can be divide into five aspects, namely the acceptance of answers or responses, assessment, organization, and internalization. The psychomotor domain refers to 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 area also include social aspects such as communication skills and the ability to operating certain tools. [17].

Based on the background description and literature review, a suitable alternative to overcome the low learning motivation in school mathematics subjects essential is the use of a teaching materials module. It is hope that the use of this module teaching materials can increase the motivation to learn the mathematics of elementary school students, which is still low, and also improve student learning outcomes.

**2. Research Methods**

The research conducted was 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 the results of study by previous researchers. This data collection method uses the documentation method. The documentation method is a systematic data collection procedure for reviewing printed and electronic documents [6]. Documentation method is a data collection procedure to systematically review both printed and electronic documents. Data analysis in this study used bibliographic annotation analysis. Bibliography is defined as a list of sources on a topic, while annotations are simple conclusions from an article, book, journal, or some other written source. [3].

**3. Discussion**

The results showed that using module teaching materials can overcome the low learning motivation of elementary school students. This base on the data that researchers have collected. Such as the research results, which show that through Moudul teaching materials Life Skills can increase students' motivation to learn mathematics [14]. The results of other studies regarding module teaching materials, namely development of an Integrated Contextual-Based Mathematical Module in Islamic Sciences, also conveyed that it can increase the learning motivation of students [9].

Module teaching materials include interesting interactive teaching materials. Through the use of interactive teaching materials in learning mathematics can increase learning motivation for students [1]. So that with the developed module can direct students 'attention and encourage students' interest in learning mathematics[10].

**4. Conclusion**

Based on the background of the problem and the research results of the literature study presented, the researcher concludes that through the use of module teaching materials it can be an alternative to overcome the low learning motivation of elementary school students in mathematics. The author hopes writing this can be an alternative study for teachers and related parties to resolve low motivation to learn elementary school students in mathematics. Several things can be used as suggestions for research that has been done, namely this module teaching materials can be a reference for future researchers because there are still few teaching materials with mathematical literacy skills, there is a need for further development of module teaching materials so that the teaching materials for this module can be use and produced. En masse, it is necessary to update the content and design of the module teaching materials, so that they are always folllowing the needs and the applicable curriculum.

**Reference:**

1. **Journal article:** Abadi, M. K., Pujiastuti, H., & Assaat, L. D. (2017, February). *Development of Teaching Materials Based Interactive Scientific Approach Towards the Concept of Social Arithmetic for Junior High School Student*. In Journal of Physics: Conference Series (Vol. 812, No. 1, p. 012015). IOP Publishing.
2. **Journal article:** Amanda N. dkk (2019) Pengembangan Media Budel (Buku Berjendela) pada Tema Keluargaku. Jurnal Penelitian dan Pengembangan Pendidikan. Vol. 3 (2) pp. 97-104.
3. **Journal article:** Arsyillah, B. T., & Muhid, A. (2020). Pendidikan Multikultural Dalam Membentuk Karakter Pemuda di Perguruan Tinggi. Al-Fikr: Jurnal Pendidikan Islam, 6(1), 17-26.
4. **Journal article:** Baidi (2019). The Role of Parents’ Interests and Attitudes in Motivating Them to Homeschool Their Children. Journal of Social Studies Education Research. Vol. 10 (1), 156-177
5. **Journal article:** Barlia, L. (2010). Elementary School Teachers’ Personality In Students’ Learning Motivation To Understand Concept Of Science. Cakrawala Pendidikan. Vol. 29 (1) 14-26
6. **Journal article:** Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. Qualitative research journal.
7. **Book Chapter**: Djamarah, Syaiful Bahri dan Aswan Zain. 2010. Strategi Belajar Mengajar. Jakarta: Rineka Cipta.
8. **Journal article:** Ibrahim, D. S, Suardiman , S. P( 2014). Pengaruh Penggunaan E-Learning Terhadap Motivasi Dan Prestasi Belajar Matematika Siswa Sd Negeri Tahunan Yogyakarta. jurnal Prima Edukasia, Volume 2 - Nomor 1, 2014
9. **Journal article:** Kurniati, A (2016) . Pengembangan Modul Matematika Berbasis Kontekstual Terintegrasi Ilmu Keislaman.Al-Khwarizmi : Jurnal Pendidikan Matematika dan Ilmu Pengetahuan Alam, p-ISSN: [2337-7666](http://issn.pdii.lipi.go.id/issn.cgi?daftar&1360081658&1&&) and e-ISSN: [2541-6499](http://issn.pdii.lipi.go.id/issn.cgi?daftar&1476865856&1&&)
10. **Journal article:** Kwartolo, Y. (2010). Teknologi informasi dan komunikasi dalam proses pembelajaran. Jurnal Pendidikan Penabur, 14(Juni), 15–43
11. **Journal article:** Nahdliyah, N, Mutala’liah (2018) Pengembangan Bahan Ajar Modul Ilmu Pengetahuan Alam bagi Siswa Kelas Iv Sekolah Dasar.
12. **Journal article:** Prayogo, G. R. (2021). Pengembangan Modul Matematika Bangun Datar Berbasis Contextual Teaching and Learning untuk Meningkatkan Prestasi Belajar Matematika. Kognisi : Jurnal Penelitian Pendidikan Sekolah Dasar, 1(1), 8–14
13. **Journal article:** Prihantana, M. A. S., Santyasa, I. W., & Warpala, I. W. S. (2014). Pengembangan Bahan Ajar Interaktif Berbasis Pendidikan Karakter Pada Mata Pelajaran Animasi Stop Motion untuk Siswa SMK. Jurnal Teknologi Pembelajaran Indonesia, 4(1).
14. **Journal article:** Rulyansah, A, Sholihati, M (2018). Pengembangan Modul Berbasis Kecakapan Hidup Pada Pelajaran Matematika Sekolah Dasar. MUST: Journal of Mathematics Education, Science and Technology Vol 3, No. 2, Desember 2018 Hal 194 – 211
15. **Journal article:** Somayasa, W dkk (2013). Pengembangan Modul Matematika Realistik Disertai Asesmen Otentik Untuk Meningkatkan Hasil Belajar Matematika Peserta Didik Kelas X Di Smk Negeri 3 Singarajae-Journal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi Penelitian dan Evaluasi Pendidikan (Volume 3 Tahun 2013)
16. **Journal article:** Stacey, K. (2012). The international assessment of mathematical literacy: PISA 2012 Framework and items. Selected Regular Lectures from the 12th International Congress on Mathematical Education, pp. 771–790. <https://doi.org/10.1007/978-3-319-17187-6_43>
17. **Journal article:** Syahrowiyah, Titin. Pengaruh Metode Pembelajaran Praktik Terhadap Motivasi Dan Hasil Belajar Pendidikan Agama Islam Siswa Kelas Iv Sekolah Dasar. Studia Didaktika, [S.L.], V. 10, N. 02, P. 1 - 18, Dec. 2016. Issn 1978-8169. Available At:
18. **Journal article :** Usman, uzer.2010.Menjadi Guru Profesional. Bandung.CV Wacana Putra