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Magazine Teaching Materials as an Effort to Increase Students' Interest in Learning

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ABSTRAK

Kurangnya variasi penggunaan bahan ajar dalam pembelajaran menimbulkan dampak pada minat dan hasil akademik siswa. Tujuan penelitian ini yaitu menciptakan bahan ajar majalah dapat meningkatkan minat belajar siswa. Jenis penelitian ini ialah penelitian pengembangan dengan model ADDIE. Subjek penelitian pengembangan ini adalah 1 ahli isi mata pelajaran; 1 ahli media pembelajaran; 1 ahli desain pembelajaran; 3 siswa uji coba perorangan; 6 siswa uji coba kelompok kecil. Pengambilan data dengan jalur observasi, studi dokumen, wawancara dan kuesioner. Instrument pengumpulan data yang dipakai yaitu berupa kuesioner. Analisis data yang digunakan adalah deskriptif kualitatif dan deskriptif kuantitatif. Hasil penelitian yaitu bahan ajar majalah dinyatakan valid dari hasil riview ahli isi mata pelajaran menunjukkan bahan ajar majalah berpredikat baik dengan hasil 80,00%. Hasil riview ahli desain pembelajaran menunjukkan bahan ajar majalah berpredikat sangat baik dengan hasil 91,00%. Hasil riview ahli media pembelajaran menunjukkan bahan ajar majalah berpredikat sangat baik dengan hasil 92,00%. Hasil riview uji coba perorangan berpredikat sangat baik dengan hasil 99,09%. Hasil rivew uji coba kelompok kecil berpredikat sangat baik dengan hasil 98,18%. Disimpulkan bahan ajar majalah pada mata pelajaran Matematika valid dan layak digunakan dalam proses pembelajaran. Implikasi penelitian ini diharapkan siswa terbiasa menghinggai bahan ajar majalah yang dapat digunakan secara mandiri.

ABSTRAK

The lack of variation in the use of teaching materials in learning impacts students' interests and academic results. The purpose of this study is to develop magazine teaching materials as well as present the results of validating magazine teaching materials in Mathematics subjects which have the potential to foster student interest in learning. This type of research is development research with the ADDIE model. The subjects of this development research were one subject matter expert; 1 learning media expert; 1 learning design expert; 3 individual trial students; 6 students in small group trials. Data was collected by observation, document study, interviews, and questionnaires. The data collection instrument used was a questionnaire. The data analysis used is descriptive qualitative and descriptive quantitative. The research results, magazine teaching materials, were declared valid from the subject content experts' review showing that magazine teaching materials had a good predicate with a result of 80.00%. The review results by learning design experts show that magazine teaching materials have a very good rating, with a result of 91.00%. The review results by learning media experts show that magazine teaching materials have a very good rating, 92.00%. The results of individual trial reviews have a very good rating, with a result of 99.09%. The results of the small group trial had a very good rating with a yield of 98.18%. It was concluded that magazine teaching materials in Mathematics are valid and appropriate for learning.

1. INTRODUCTION

Education is a very important need. Through education, the development of science will be more easily absorbed to create an intelligent society that will support the country's development from an economic, social, and cultural perspective to become a developed country. The world of education has entered the 21st century, also known as the era of knowledge. Education in the knowledge era faces very

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tough challenges, including having to be able to facilitate students to build competencies that are by what is needed in this century (Santyasa et al., 2019). Students will experience more difficult competition along with current developments and become an important problem in the future. Current technological developments that have a major influence on the field of education must, of course, be balanced with skilled resources to utilize these technologies (Antara et al., 2018; Jannah & Atmojo, 2022; Meida, 2022; Rahmawati et al., 2022). One effective way to increase the capacity of the nation's society is through increasing educational standards (Agustini et al., 2022). Therefore the school, the main institution in implementing education, holds the community's expectations regarding superior education. Superior schools, in theory, must have unique qualities, which can be the main criteria for assessing the benefits of education (Saufi et al., 2019). In other words, the ability of the school system and instructors to produce learning opportunities for every child is the definition of excellent education. This definition differs from performance standards, graduation, infrastructure, technology, and convenience. Because teachers as educators in schools play an important role in the smooth running of the learning process, society has increasing demands (I. B. M. Astawa, 2022; Gede Indra Widiada et al., 2018).

In principle, teaching and learning activities are connections and involvement between teachers and students in learning activities (I. N. B. Astawa, 2022; Putu, 2019; Rositayani, 2019). Teachers must be able to create and use various tools, techniques, and tactics to prevent children from getting bored so that educational goals can be achieved properly. Therefore creating a fun and interesting learning process will be useful to help achieve learning goals. For children to be more interested in learning, teachers must also be able to provide them with innovative lessons (Ambarwati et al., 2022; Selviani & Anggraini, 2018). Innovation needs to be done so that the learning that is carried out is different from the same learning tools or seems monotonous (E D Masturah et al., 2018). It is intended to build a learning environment that is dynamic, original, imaginative, successful, useful, and fun (Lubis, 2018). One of the efforts practiced to achieve educational goals is to provide learning resources for students. Plus, accessing various learning resources can help students address their unique learning needs (Amelia et al., 2022). Teaching materials or learning aids are one of several dynamic elements in learning (Gede Indra Widiada et al., 2018; Khulsum et al., 2018). Teaching materials are items or a collection of items that have been carefully made by the teacher and used by students for learning. Instructional materials can be either printed, non-printed or visual-auditory, or one of these formats (M. Ningsih et al., 2018).

However, most of the school learning process still needs to be solved. One of them is to build a two-way connection between the teacher and students or fellow students, which is a challenge for the teacher. It is certainly contrary to the rules of teaching and learning. It is also the effect of the less-than-optimal educational goals achieved. In addition, these conditions are also influenced by the determination of strategies or procedures used in learning activities. In teaching and learning activities in the classroom, the teacher only uses the lecture or teacher-centered method with teaching materials that are often used, manuals or worksheets, and students listen more, causing students to get bored quickly and easily lose focus when participating in the learning process (Amelia et al., 2022; Elisa Diah Masturah et al., 2018; M. Ningsih et al., 2018; N. L. P. R. Ningsih et al., 2018). Based on the results of interviews with teachers at SD Muhammadiyah Singaraja. In the implementation of classroom learning, the use of teaching strategies that focus on one direction by the teacher to students is very commonly used, besides that the learning support media used only rely on thematic student books that are often used so that students quickly feel bored and lack interest in learning, this is indicated by the reduced focus of students listening to the teacher when explaining the material and the low response of students when asked questions. Boring learning procedures cause low student motivation (Widiana et al., 2021).

Another problem found is that the quality of students based on academic results could be more balanced with programs disseminated or efforts made to improve the quality of education. The trigger for this inequality is using learning models in the learning process (Tegeh et al., 2021). Students need more motivation in understanding the topic, and understanding students in accepting the material offered can be obstacles in learning activities (Wandini et al., 2021). Students' high or low learning interest in learning activities can directly influence students academic results. Interest is a person's interest in an activity. Then, he will pay attention and be willing to follow it without coercion (Rohim & Rahmawati, 2020). A high level of interest in learning usually gets a large level of academic value, and a low level of interest in learning usually produces a small academic value (Karina et al., 2017). In line with this, it was revealed that a decrease in learning enthusiasm could also decrease student learning achievement (M.Tholib, 2022). Making simple media of paper to support the learning process has been done. However, this is only done occasionally or rarely because it also adapts to the material being taught. It reveals that the learning resources used to support teaching and learning activities are less varied, so developing teaching materials needs to be innovative. Even though the current technological developments are very helpful for educators to make learning media or teaching materials (Tafonao, 2018). The lack of varied teaching

materials in the learning process is caused by the teacher having constraints, one of which is because the facilities available at school still need to be improved, so teachers have limitations in using them. At the same time, facilities that support the application of technology in teaching and learning activities are needed. Facilities for utilizing technology in educational institutions can facilitate the teaching and learning process and other non-academic activities, such as administration which will later improve the quality of learning (Surani, 2019). Another reason is that teachers need more free time and the ability to make media or teaching materials. With this problem, of course, a solution is needed. Based on the results of teacher interviews, it was revealed that teaching materials were needed, especially in Mathematics. Mathematics is a field of knowledge that trains the human mind to think logically and systematically in solving problems and making decisions (Hashim et al., 2021). Development is carried out in order to be able to make teaching materials or learning aids so that they can attract students' interest in learning. As a result, learning obstacles can be overcome, especially those related to the lack of teaching materials (Zinnurain & Gafur, 2015).

The solution to help solve this problem is for researchers to develop and create good products to foster student interest in learning. The topics presented must be made as creative as possible and explained simply because students' interest in the topic can foster student learning motivation (Kusumawati et al., 2021). The products made are printed teaching materials in the form of magazines. Teachers or students use teaching materials to facilitate teaching and learning activities (Rukiyah et al., 2022; Sari et al., 2020). To meet expectations and be easily understood by students, it is important to make teaching materials according to their needs (Usta & Güntepe, 2017). The magazine is a two-dimensional developing media that is a printed mass communication tool, and it cannot be denied that it impacts its audience (Selviani & Anggraini, 2018). Magazines contain topics on printed sheets of paper assembled. The topics in the magazine are not handwritten. Magazines generally feature various writing topics aligned with the goals and themes of a particular publication. If it contains similar information, students are more interested in reading magazines than textbooks because the appearance of magazines can convey a relaxed atmosphere that stimulates the desire to learn (Najihah & Sanjaya, 2014). The advantages of magazines are that they can foster students' interest in reading, including visually appealing and encouraging students to read the entire magazine because the design is lighter than textbooks, easy to carry anywhere, and can be read at any time without being limited in time, even though it is shorter than textbooks, the information remains comprehensive (M. Ningsih et al., 2018). Students will enjoy learning to use children's magazines because they generally like reading with lots of colors and interesting. Magazines can potentially become a source of learning in teaching and learning activities in schools, which are expected to increase students' academic achievement (Sugiarto et al., 2018).

Previous findings also show that mathematics magazines are effectively used in learning, judging by the significant success rate on very strong qualifications (Wibowo & Pratiwi, 2018). Interactive multimedia-based mathematics magazines as learning resources are declared valid and suitable for learning (Sholikhah et al., 2019). Inspirational magazines on science subjects effectively improve student learning outcomes with significant differences in results (Antara et al., 2018). Magazine teaching materials using the Hannafin and Peck models in science subjects are proven to improve learning outcomes in terms of posttest scores which are better than pretest scores (M. Ningsih et al., 2018). Magazine teaching materials can be used to overcome the problem of learning activities. This study aims to create magazine teaching materials to increase students' interest in learning. The existence of magazine teaching materials made using the ADDIE model in the third grade of SD Muhammadiyan Singaraja was able to overcome learning problems and increase student interest in learning.

2. METHOD

This type of research includes development research. This research was carried out in third grade at Muhammadiyah Singaraja Elementary School to help solve problems in the learning process by making products in the form of magazines. This development study procedure was carried out based on the ADDIE development model, which stands for five stages, the analysis stage, the design stage, the development stage, the implementation stage, and the evaluation stage. Implementation of the analysis phase analyzed competency needs, student characteristics, and appropriate material. The design phase involves designing a storyboard, selecting software, and compiling an assessment instrument. The development stage is done by making the product according to the design. The implementation phase is carried out by testing the product's feasibility. In the evaluation stage, improvements are made from the review results after the feasibility test. Instructional designers and training developers widely use this model as a guide for creating components and infrastructure for training activities that are efficient, energetic, improve training performance, and are intended to achieve effective learning objectives and

determine designs. The product trial subjects in this study were one subject matter expert, one instructional media expert, one instructional design expert, three individual trial students, and six small group trial students. The chart of development research procedures can be described in Figure 1.

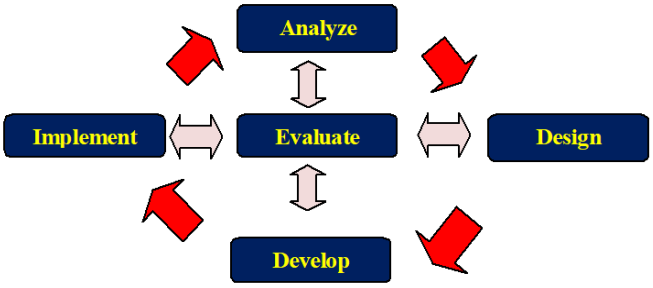

Figure 1. The Stages of the ADDIE Development Model

Data collection techniques applied in this study included field observations, interviews, documents, and questionnaires. This study used data collection instruments, and questionnaires, to obtain results in the form of reviews from subject matter experts, learning media experts, instructional design experts, individual trials, and small group trials. The instrument grids of subject matter experts, instructional media experts, instructional design experts, and trials on individuals and small groups are presented in Tables 1, 2, 3, and 4.

Table 1. Subject Content Expert Instruments

Aspect	Component	Total Item
Objectives/Curriculum	Learning Indicators Learning objectives	2
Material	Material Clarity The attractiveness of the presentation of the material Appropriateness of Material Presentation	11
Language	Grammatical appropriateness	4
Visual	Compatibility of images/videos to clarify content	2
Total		19

Table 2. Instruments for Learning Media Experts

Aspect	Component	Total Item
Objectives/Curriculum	Compatibility of Basic Competency with learning objectives Clarity of indicator formulation	2
Student	Presentation of material according to student characteristics	3
Process	Learning magazines can stimulate student activity Ease of use	2
Material contents	The attractiveness of magazines in motivating students The suitability of the material presented in the learning media The material in the magazine is packaged systematically.	11
Evaluation	The suitability of the exercise with the material/purpose	2
Total		20

Table 3. Instructional Design Expert Instruments

Aspect	Component	Total Item
Consistency	Consistency of magazine content Magazine consistency with learning objectives	2
Cover Design	Magazine display Reader motivation	5
Text Message Design	Font suitability Font size suitability Color compatibility	6

Aspect	Component	Total Item
Picture Message Design	Image positioning accuracy Appropriate use of images	5
Back Cover	Component fittings	2
	Total	20

Table 4. Instruments for Individual Trials and Small Group Trials

Aspect	Component	Number of Items
Magazine covers	Interesting cover Title clarity	4
Page	The attractiveness of the page view Color selection settings	4
Introduction	Clarity of title description The language used is easy to understand	4
Learning Activities	Clarity of content Motivation to learn	5
Evaluation	Clarity of instructions Easy-to-understand language	3
Back Cover	Background image compatibility Other component fittings	2
	Total	22

The data analysis technique applied to the study of the development of teaching materials for this magazine is a qualitative and quantitative descriptive analysis method. Qualitative descriptive analysis is one step of data analysis/management through the path of compiling in a structured way in the form of sentences/words, classification of an object (objects, symptoms, certain variables) until finally, a general decision is obtained (Agung, 2010). This method is used to process the data obtained after conducting product trials with content experts or subject matter teachers, learning media experts, and learning design experts in the form of input to improve the products made. At the same time, the quantitative descriptive analysis is a step of data management through the path of compiling in a structured way in the form of figures or presentations about the object under study until a general decision is obtained. This method was applied to manage the data obtained through questionnaires in the form of scores.

Table 5. Conversion of achievement level scale 5

Achievement level	Qualification	Description
90-100	Very good	No need to revise
75-89	Good	Slightly revised
65-74	Enough	Adequately revised
55-64	Not enough	Many things were revised
0-54	Less	Repeated making products

(Agung, 2017)

3. RESULT AND DISCUSSION

Results

The design for the development of the magazine runs the ADDIE development model. There are five steps involving evaluation and revision which will be explained regularly according to the results obtained from each of the development stages that have been passed. The first stage is needs analysis. In this step, an analysis of student characteristics, competency needs, and appropriate materials, as well as learning facilities, is carried out. Through observation and interviews, the results were obtained that in the learning process, the teacher applied the lecture method more and only used supporting media in the form of textbooks which were quite thick and often used so that students often felt bored plus, most students thought that mathematics was quite difficult and resulted in students feeling less motivated in learning. Based on the suggestions from the subject teacher, the developer chose mathematics because the learning support media were less varied. For example, the material discussed in the magazine is Recognizing Simple Fractions. The basic competition is generalizing the idea of fractions as part of a whole with indicators, including correctly comparing two fractions with the same denominator and presenting the fraction as part of the whole. One of the supporting facilities in schools is the LCD projector, but

because there is only one, the teacher has limited use of this facility in the learning process in class. Based on the findings, the researcher developed a product in the form of magazine teaching materials using the ADDIE model to overcome problems in learning activities focused on Mathematics subjects.

The second stage is design. After carrying out the initial research activities and gathering information, the next step is to determine and confirm the application, design a storyboard to use as a guide when making all parts of the magazine by adjusting the order, determine the display design of the magazine, prepare lesson plans, compile magazine assessment instruments including, subject content expert test, content expert test learning design, content expert test learning media, small group trials, and individual trials. To develop a magazine, researchers need software or software. The software available today are Adobe Photoshop, CorelDraw, and Adobe Illustrator. Researchers chose CorelDraw X7 as software to develop products. Making storyboards is intended to share reviews about whatever is presented in the developed magazine teaching materials. For the magazine to attract students' interest, one thing that needs to be considered is to determine the display design of the magazine from the cover and the first page to the end. The determination of the magazine display design covers the display design, font type, font size, spacing, and coloring in the magazine so that the discussion of the material is also clear readability. Preparing lesson plans is to manage teaching and learning activities for students using magazine teaching materials so that the learning steps can be arranged systematically. They were making useful instruments to assess the validity of the products produced.

The third stage is development. This step is the stage of realizing the existence of a magazine teaching material product adapted to the previously designed design stages, such as storyboards and other supporting components, into products that are ready for use by students. The third stage of this activity is collecting materials or materials obtained from textbooks, collecting the required materials via the Internet, and making sketches of story characters. These sample images will be presented in the magazine, and background pages of the contents will be put together by arranging the components made according to the storyboard previously designed.

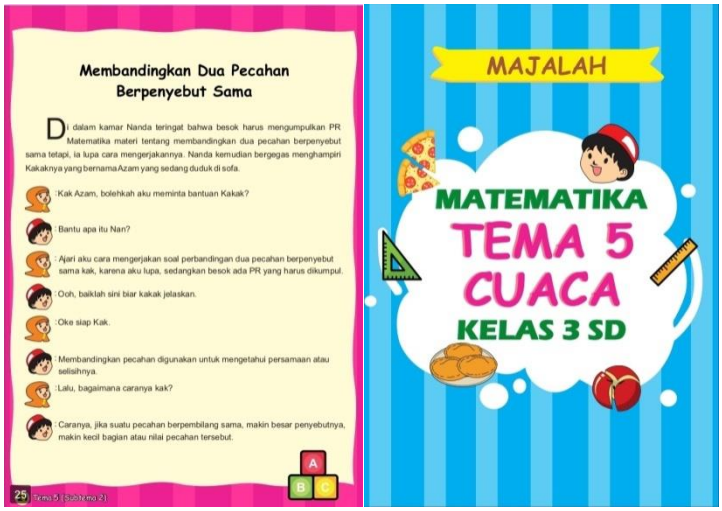

Figure 2. The Results of Developing Magazine Teaching Materials

The next stage is implementation. The step taken is to test the validity of the magazine teaching materials that have been developed. Before testing the students, several stages were passed to test the relevance and feasibility of the teaching materials being developed. The first stage is the test phase by subject content experts who test the suitability and accuracy of the material presented in the teaching materials. Second, the test phase was carried out by learning design experts who tested the design and appearance of the entire magazine. Third, the test stage was carried out by learning media experts who tested the feasibility of magazine teaching materials. Before testing the product on students, improvements were made according to input from the three experts. Based on the results of the product validity test of magazine teaching materials from content expert reviews, the results obtained as much as 80.00% included good qualifications. The learning design experts obtained results of 91.00%, including very good qualifications. Learning media experts obtained results of 92.00%, including very good qualifications. In individual trials, the results obtained were 99.09%, including very good qualifications. The results obtained in the small group trials were 98.18%, including very good qualifications. Obtaining valid results which show very good results, the resulting product is feasible to be applied in teaching and learning activities in class. Evaluation stage. After going through the first to fourth stages, the fifth stage is

carried out, the last stage. The evaluation phase is used as an improvement of the media after implementation. After product validation was carried out by experts such as subject matter experts, learning design experts, and learning media experts, the magazine's teaching materials were improved based on expert reviews which were carried out to improve the feasibility of this magazine's teaching materials.

Discussion

The magazine's teaching materials are completed according to the ADDIE model, which covers five development stages: analyzing, designing, developing, implementing, and evaluating. The rule is that the model completes each stage before moving on to the next stage. The magazine teaching materials are then subjected to a feasibility test with the acquisition of good and very good predicates from experts and product tests on third-grade students at Muhammadiyah Singaraja Elementary School. The study results show that teaching materials are suitable for teaching and learning activities. It can be seen from obtaining good eligibility qualifications with superior assessments on the availability of examples and illustrations that clarify the understanding of the material and the presentation of the material by student characteristics. Making teaching materials on the aspect of content needs to present examples that clarify the material and adjust to student characteristics. The characteristics of students are the uniqueness of each individual in their learning activities (Darmayasa et al., 2018; Tharmar & Kalidasan, 2019). Material tailored to students' uniqueness will accelerate their understanding of information (Nopiani et al., 2021; Wiratama & Margunyasa, 2021). The material presented must look at students' abilities because it affects how well they understand the material (Dewanti et al., 2018; Hidayat et al., 2021).

Mathematics teaching materials are feasible to use in terms of learning design, the acquisition of very good level qualification results with superior assessments on the suitability of the formulation of learning objectives with learning materials, and the delivery of various materials. The most important thing in media development is the suitability between the material and the goals to be achieved (Hutama, 2016; Magdalena et al., 2020). So that the learning course does not feel boring, the teacher should vary the delivery of the material. With this, it can be concluded that it is very important to adjust the formulation of objectives to the material described in the development of media in learning design. Besides that, to avoid boredom, students following learning to vary the material delivery can be done as a solution. Besides that, the cover design and images that motivate readers can attract students' interest. The cover contains the title material and supporting images describing the magazine's contents. The magazine cover raises curiosity about the contents of the entire magazine (Antara et al., 2018; Twigg & Yates, 2019). Appropriateness of the selection of images, typeface, font size, color, spacing, creative and attractive magazine presentation also attracts reader motivation. Based on this, it can be concluded that creating interesting and motivating media can be done by making the cover design as attractive as possible and selecting appropriate fonts, colors, and spacing.

This finding is reinforced by previous research, which states that mathematics magazines are effective in learning, judging from the significant success rate on very strong qualifications (Wibowo & Pratiwi, 2018). Interactive multimedia-based mathematics magazines as learning resources are declared valid and suitable for learning (Sholikhah et al., 2019). Inspirational magazines on science subjects effectively improve student learning outcomes with significant differences in results (Antara et al., 2018). Magazine teaching materials using the Hannafin and Peck models in science subjects are proven to improve learning outcomes in terms of posttest scores which are better than pretest scores (M. Ningsih et al., 2018). This research implies that students are expected to get used to magazine teaching materials that can be used independently. Learning activities are more fun. Students are more motivated because, in the magazine, there are interesting pictures as examples and explanations of learning material. This research can motivate teachers to accept more varied learning support media and hone teachers' ability when using technology to advance education. The limitations of this research have yet to be carried out to implement the product. So it is suggested that other researchers continue this research and make products for other subjects and can use this research as a reference.

4. CONCLUSION

Magazine teaching materials can increase students' interest in learning and are suitable for use in learning activities. This teaching material is by the characteristics of students and learning objectives. The quality of this teaching material is known from the assessment results given by experts and students as product users.

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