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Audio Visual Learning Media Based on Microsoft Powerpoint With Materials for Summary and Reduction of Class III Mathematics Courses

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ABSTRAK

Faktor yang menyebabkan siswa kesulitan dalam memahami materi pelajaran yaitu kurangnya media pembelajaran. Saat ini beberapa guru mengalami kesulitan dalam mengembangkan media pembelajaran berbasis teknologi. Hal ini berdampak pada siswa yang kesulitan dalam memahami materi pembelajaran sehingga hasil belajar matematika yang rendah. Tujuan penelitian ini yaitu untuk menciptakan media pembelajaran audio visual berbasis Microsoft PowerPoint materi penjumlahan dan pengurangan mata pelajaran matematika. Jenis penelitian ini yaitu pengembangan. Model yang digunakan dalam mengembangkan media yaitu Borg and Gall. Subjek uji coba diterapkan kepada 26 siswa. Pengumpulan data melalui lembar validasi ahli media, materi, dan respon siswa. Hasil dari penelitian ini yaitu validasi ahli materi memperoleh skor 90% (sangat layak). Hasil ahli media pembelajaran memperoleh skor 80% (sangat layak). Tingkat kelayakan media yang diperoleh melalui observasi melalui beberapa penilaian menunjukkan persentase semua aspek adalah 86% (sangat baik). Berdasarkan hasil perolehan dapat disimpulkan bahwa pengembangan media pembelajaran audio visual berbasis Microsoft Power Point sangat layak digunakan dalam proses pembelajaran. Penerapan media pembelajaran ini membantu siswa dalam mempelajari dan memahami materi pembelajaran dengan lebih baik.

ABSTRACT

The factor that causes students difficulty in understanding the subject matter is the lack of learning media. Currently, some teachers have difficulty in developing technology-based learning media. This impacts students who have difficulty understanding learning materials so that mathematics learning outcomes are low. This research aims to create an audio-visual learning media based on Microsoft PowerPoint for adding and subtracting math subjects. This type of research is development. The model used in developing the media is Borg and Gall. The test subjects were applied to 26 students—data collection through media expert validation sheets, materials, and student responses. The result of this research is that the validation of material experts gets a score of 90% (very feasible). The results of learning media experts get a score of 80% (very feasible). The level of media feasibility obtained through observation through several assessments shows the percentage of all aspects is 86% (perfect). Based on the results, it can be concluded that the development of Microsoft PowerPoint-based audio-visual learning media is feasible in the learning process. The application of this learning media helps students to learn and understand the learning material better..

1. PENDAHULUAN

Education is an effort made by humans to acquire knowledge to form attitudes, morals, and behavior to become a better person (Devi et al., 2020; Oyedotun, 2020). Education can be obtained through various environments, such as the family environment through parents, the community, and the school environment (Marhayani, 2016; Syauqi et al., 2020). With education, humans can gain broad knowledge and insight about the world that can be applied in their lives. It aims for humans to become creative individuals (Bilik et al., 2020; Gustiana & Puspita, 2020). Teachers as professionals must constantly make changes or adjustments in the paradigm of strategy, approach, or educational technology (Liebech-Lien, 2021; Shaalan, 2019). Teachers must be able to create learning conditions that have the potential to create an independent learning atmosphere. In this case, teachers need to motivate their students to improve the development of student learning activities by inviting them to participate (Ahad et al., 2021; Astuti et al., 2021). This needs to be done to overcome the problems of students who have difficulty understanding learning materials (Bdiwi et al., 2019; Chien & Hui, 2010).

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Several factors cause problems that often occur in the world of education. One of them is that the teacher uses an inappropriate learning model to feel bored in learning (Seika Ayuni et al., 2017; Sukmana & Suartama, 2019). Students who feel bored in learning cause students not to pay attention to the teacher when explaining the learning material. This will impact the ability of students who are lacking because students do not understand the material they are learning (Ayuni et al., 2017; Lestari et al., 2017). If students feel that they always have difficulty learning certain subjects, it will harm their interest in studying these subjects (Putra & Sujana, 2020; Santiasih et al., 2013). Students will be lazy to learn the material given by the teacher. Meanwhile, their interest in learning plays an essential role in achieving the success of the learning process (Arthaningsih & Diputra, 2018; Wau, 2017). In addition, the factor that causes students difficulty in understanding the subject matter is the lack of learning media. Some teachers have difficulty developing technology-based learning media (Priantini, 2020; Wisada et al., 2019). This causes students difficulty understanding the learning material explained by the teacher without the help of learning media. The lack of creative learning media will also make students feel bored because the learning process is monotonous (Megawati & Utami, 2020; Riwu et al., 2018).

Based on these problems, the solution offered to support learning objectives is to develop innovative technology-based learning media. *Learning media* is a tool that can distribute learning information quickly to students (Fauzi et al., 2017; Gunawan et al., 2017). Attractive learning media will make it easier for teachers to teach (Maloney et al., 2016; Yulando et al., 2019). This is because the media can stimulate and motivate students in learning (Alnajdi, 2018; Nugraha et al., 2016). Technology-based learning media that teachers can use are audio-visual media based on Microsoft PowerPoint. Audiovisual media is a learning medium that can channel learning materials to students in audio and visual ways (Fauzi et al., 2017; Setiawan & Ari Oka, 2020). Audio-visual learning media contains audio and visual elements to facilitate students who have these learning styles (Pratama et al., 2018; Wiastuti et al., 2014).

Audiovisual media are modern learning media that keep up with the times (along with advances in science and technology), including media that can be seen and heard (Wang et al., 2020; Zeptyani & Wiarta, 2020). Audiovisual media is also a form of cheap and affordable learning media. The use of this audiovisual media can provide convenience for teachers in delivering material to increase student interest in learning and student achievement in summary and reduction materials (Michelsanti et al., 2019; Xu & Wu, 2021). The advantage of audiovisual learning media is that it can attract the attention of students. In addition, it can save time, and recordings can be played repeatedly (Pattemore & Muñoz, 2020; Wang et al., 2020). Previous research findings stated that audio-visual media could increase students' enthusiasm for learning (Xu & Wu, 2021; Zeptyani & Wiarta, 2020). Other research findings also state that audio-visual media can make it easier for students to understand learning material so that it has an impact on increasing student learning outcomes (Michelsanti et al., 2019; Pradilasari et al., 2019; Puspitasari & Murda, 2018). It can be concluded that audio-visual media will help students in learning. There has been no study on the development of learning videos using PowerPoint in mathematics. The advantages of audio-visual media using PowerPoint that will be developed are videos presenting learning materials and examples and animations to understand mathematical material easily. The purpose of this research is to develop audio-visual media using PowerPoint. It is expected that learning video media using PowerPoint can facilitate students in learning, especially in mathematics.

2. METODE

The research method used in this research is the research and development method which is a method that is used to produce a particular product and to test the effectiveness of the developed product. Research and Development are understood as the power of research that begins with Research and continues with Development. Research activities are carried out to obtain information about user needs. While Development is carried out to produce learning media. In the process of this research, the researcher uses the Borg and Gall development model in the development media. In this research, the researcher researched the selected object. The preliminary research stage that the researcher did were to make observations, test the instrument using a validation sheet, and a student response questionnaire sheet, which was used as a scale in measuring research variables. The research and development method uses quantitative data analysis and qualitative data analysis. The level of validity and practicality of the product is calculated using the percentage formula. The results of the study are used to measure the level of validity and feasibility of the developed-product based on the following percentage criteria. Based on these assessment criteria, mathematics learning media on summary and reduction material through Microsoft PowerPoint-based audio-visual media can be said to be highly feasible if it meets the criteria percentage > 60% of all aspects. Therefore, it can be tested on students, and if the results of student responses shows > 60% then the developed product can be said to be highly feasible.

Table 1. Percentage Range and Eligibility Criteria

Indeks	Feasibility
76%- 100%	Highly Feasible
51%- 75%	Feasible
26%- 50%	Less Feasible
0%- 25%	Not Feasible

3. HASIL DAN PEMBAHASAN

Results

The result of this development research is a Microsoft Powerpoint-based audiovisual learning media on summary and reduction material, which can be used as a teaching media for the third grade of elementary school students. The material that is taught to the students with this media includes summary and reduction, determining place values up to thousands, addition counting operations by saving, adding counting operations without saving, borrowing subtraction arithmetic operations, and subtraction counting operations without borrowing. This media validation is conducted by media experts to determine the feasibility of Microsoft PowerPoint-based audio-visual media. In this instrument, there are 6 aspects of media feasibility. Based on the results of data analysis, it can be said that the audio-visual media based on Microsoft PowerPoint can be said to be very feasible to obtain a percentage score of 80%. Meet the percentage score > 60% to be categorized as a very feasible medium. Material validation is used by a learning-material experts to determine the feasibility of the material contained in Microsoft PowerPoint-based audio visuals. In this instrument, there are some aspects of the feasibility that is used to measure feasibility of the material. Based on the results of data analysis, the material from audio-visual media based on Microsoft PowerPoint can be said to be highly feasible because it has an average percentage score of 90%.

Figure 2. Microsoft Power Point-based Audio Visual Learning Video

The feasibility of a learning media can be seen from the student response when it is applied in the learning process. It also can be seen from the results of the participant's assessment questionnaire. A Learning media is considered feasible if it meets the minimum requirement of media feasibility that have been determined. The feasibility rate of the media that is obtained through observation through some assessment in class III B shows the percentage of all aspects is 86%. Based on the results of this research, students stated that the power point learning media was a fairly complete learning media. Moreover, the media testing shows that the media is highly feasible to be used in helping students, especially in mathematics' summary and reduction material. The media is proven to be effective and highly feasible to use.

Discussion

The developed audio-visual media is suitable for use in the learning process due to several factors. First, audio-visual media using PowerPoint is feasible because it gets perfect validity. The feasibility of the audio-visual media that has been developed is because the development of the media has been based on the theory of learning video development. In addition, the suitability of the material presented in audio-visual learning media also affects the validity of the product (Darihastining et al., 2020; Karisma et al., 2019). The development of this media uses a PowerPoint application. PowerPoint applications also make it easier for teachers to develop exciting learning media for students (Masyithah et al., 2015; Yulisari, 2013). This is in line with previous research, which stated that the PowerPoint application would make it easier for teachers to develop exciting learning media for students (Bajrami & Ismaili, 2016; Santra et al., 2018). Second, audio-visual media using PowerPoint is feasible because it can

facilitate students ' learning. Audio-visual media using this decent PowerPoint was developed according to the learning material. This makes it easier for students to understand the material presented on audio-visual media. The suitability of learning media with learning materials will make it easier for students to understand learning materials (Llopis-Albert et al., 2021; Noviyanto et al., 2015). In addition, the media also explains the material accompanied by real examples that will make students understand the material better. The presentation of learning materials accompanied by actual examples will make it easier for students to understand the subject matter (Rose et al., 2016; Tse et al., 2019). In addition, learning media in audio-visual developed are presented concisely and clearly to learn more efficiently. The clarity of the presentation of video information will make it easier for students to learn (Kawka et al., 2021; Teng, 2019).

Third, audio-visual media using PowerPoint is feasible because it increases students' enthusiasm for learning. The attractiveness of audio-visual media using powerpoint makes students feel enthusiastic in learning. This is in line with previous research which states that the attractiveness of learning media can increase students' enthusiasm for learning (Michelsanti et al., 2019; Sulfemi & Mayasari, 2019). In addition, this learning media presents examples using animation so that students are motivated to learn. The use of animation in learning will increase students' enthusiasm and interest in learning (H. Lin & Chen, 2016; L. Lin & Li, 2018). Attractive learning media will increase students' enthusiasm for learning so that it will impact student learning outcomes (Kamelia, 2019; Megawati & Utami, 2020; Yusuf & Widyaningsih, 2020). The findings of previous research stated that learning videos would make it easier for students to learn (Andel et al., 2020; Priantini, 2020). Other research findings also state that audio-visual media will increase students' enthusiasm and motivation in learning (Fauzi et al., 2017; Setiawan & Ari Oka, 2020). It can be concluded that audio-visual learning media can facilitate students in learning. The advantages of audio-visual media using powerpoint that will be developed are videos presenting learning materials along with examples and equipped with animations so that students can easily understand mathematical material. The implication of this research is that the developed audio-visual media can be applied by teachers in learning. The use of this media will have an impact on increasing students' mathematics learning outcomes.

4. SIMPULAN

Media pembelajaran audio visual yang dikembangkan mendapatkan tingkat validitas yang sangat tinggi. sehingga dapat disimpulkan bahwa media pembelajaran audio visual berbasis powerpoint layak digunakan dalam pembelajaran. Penerapan media pembelajaran ini membantu siswa dalam mempelajari dan memahami materi pembelajaran dengan lebih baik.

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