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Interactive Learning Media in Fifth-Grade Indonesian Elementary School Subjects

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ABSTRAK

Media pembelajaran belum diterapkan secara inovatif dan bervariasi dalam penyampaian materi Bahasa Indonesia sehingga berdampak pada hasil belajar siswa kelas V SD. Penelitian ini bertujuan untuk menganalisis proses pengembangan, validitas dan efektivitas media pembelajaran interaktif pada hasil belajar mata pelajaran Bahasa Indonesia. Penelitian ini termasuk dalam penelitian pengembangan (Research & Development). Subjek uji coba dalam penelitian ini adalah 1 ahli materi, 1 ahli media, 1 ahli desain, dan 24 siswa kelas V SD. Metode pengumpulan data yang digunakan yaitu metode kuesioner dan tes. Dalam penelitian ini menggunakan 3 teknik analisis data, diantaranya teknik analisis deskriptif kualititatif, teknik analisis deskriptif kuantitatif, dan teknik statistik inferensial (uji-t). Hasil penelitian ini menunjukkan bahwa hasil validitas yang diperoleh ahli materi 96,36% (sangat baik), ahli desain 95% (sangat baik), ahli media 94,66% (sangat baik), serta respon dari peserta didik yakin uji coba perorangan 85,08% (baik), uji coba kelompok kecil 83,47% (baik), dan uji coba lapangan 80,20% (baik). Berdasarkan hasil pre-test sebesar 61,67 persen (kurang baik) dan hasil post-test sebesar 85,25 persen (baik) Hasil menunjukkan bahwa tingkat signifikansi kurang dari 0,05. (p>0,05). Berdasarkan hasil analisis tersebut, dapat disimpulkan bahwa media pembelajaran interaktif valid dan efektif digunakan dalam meningkatkan hasil belajar siswa kelas V SD.

ABSTRACT

Instructional media have yet to be applied innovatively and variedly in the delivery of Indonesian language material so that it impacts the learning outcomes of fifth-grade elementary school students. This study analyzes interactive learning media's development process, validity, and effectiveness on learning outcomes in Indonesian subjects. This research is included in research development (Research & Development). The test subjects in this study were one material expert, one media expert, one design expert, and 24 fifth-grade elementary school students. Data collection methods used are questionnaires and tests. This study used three data analysis techniques: qualitative descriptive analysis, quantitative descriptive analysis, and inferential statistical techniques (t-test). The results of this study indicate that the validity results obtained by material experts are 96.36% (very good), design experts are 95% (very good), media experts are 94.66% (very good), and responses from students are confident in individual trials 85 .08% (good), small group trials 83.47% (good), and field trials 80.20% (good). Based on the pre-test results of 61.67 percent (poor) and the post-test results of 85.25 percent (good). The results show that the significance level is less than 0.05. (p>0.05). Based on the results of this analysis, it can be concluded that interactive learning media is valid and effective in improving the learning outcomes of fifth-grade elementary school students.

1. INTRODUCTION

Education is defined as an effort to plan the learning process in developing the potential of students to have religious abilities, self-control, personality, intelligence, noble character, and skills needed in society, nation, and state. In the era of globalization, technological advances have expanded access to knowledge in various fields (Chang et al., 2021; Rasalingam et al., 2014; Teräs et al., 2020). students can use smartphones as interactive learning media in education. Elementary schools can use interactive learning media, one of which is interactive learning media for Indonesian language subjects (Ilmiani et al., 2020; Martriwati et al., 2018; Pratiwi et al., 2018). At the elementary school level, students usually only interact with teachers through lectures and books. Learning media is a tool to make facts, concepts, principles, and procedures appear more real or concrete (Hanifah et al., 2019; Nurrita, 2018; R. I. M. Pratiwi & Wiarta, 2021). Media pembelajaran juga sangat dibutuhkan dalam pembelajaran Bahasa Indonesia.

The Indonesian language has experienced rapid development due to advances in science, technology, and art. Its use is also increasingly widespread in various domains of usage, both orally and in

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writing (Disi & Hartati, 2018; Handika et al., 2019; Susmiati, 2020). Therefore, subjects related to Indonesian are required in primary schools according to the curriculum of the Indonesian education system. The aim of learning Indonesian first is to teach thinking and reasoning methods that lead to conclusions, such as through investigation, exploration, and experimentation activities that show similarities, differences, consistency, and inconsistencies (Martha & Andini, 2019; Nuryanto et al., 2018). Second, encouraging divergent, original, and inquisitive thinking, making predictions and conjectures, and carrying out simulations fosters creative activity involving intuition, intuition, and discovery (Joyo, 2018; Krismasari et al., 2019). Third, develop problem-solving skills. Fourth, develop the ability to explain concepts using oral speech, graphic notes, maps, and diagrams to convey information or ideas (Agustina, 2021; Paramita et al., 2022).

Based on the results of interviews with the fifth-grade teacher at SDN 02 Lenek Pesiraman, the Indonesian language subject was very important to be applied to students in everyday life, particularly in communicating between schoolmates and teachers. However, it is inversely proportional to the expectations of the fifth-grade teacher at SDN 02 Lenek pesiraman in applying to students to use Indonesian when communicating correctly, especially at school, so that students get used to it when outside school. It makes students understand what is read, especially in explanatory text material. From the results of interviews with the fifth-grade teacher at SDN 02, Lenek Pesiraman said that when the teacher explained the explanatory text material, the students still had difficulty understanding the meaning of the Indonesian word itself because students were not used to using Indonesian, but often used their regional language (sasak) especially without used to communicate.

Student constraints in learning due to a need for learning support tools, such as not implementing learning media (Hidayah et al., 2020; Paramita et al., 2022). Teachers need to make learning media and use lecture and book methods. When the learning process is online, the teacher also needs help teaching because he can only give assignments and even cable TV to assist students in learning. However, the teacher can only supervise students indirectly because of remote learning. In addition, the average parent works and needs to learn about online learning, so they cannot supervise their child while studying. Differences in students' understanding of the material when the teacher uses the lecture method with learning media that is, when the teacher teaches only explains, most students pay less attention to the teacher when explaining because they feel bored and sleepy. When using learning media, students are more active because delivering messages does not only use full text but can use learning videos, audiovisuals, game quizzes, and others (Halawa, 2021; M. T. Septiani & Hasanah, 2019; Yuanta, 2017).

Therefore, learning in the classroom needs to be updated to be used as motivation to work on writing, such as using picture media. All students are expected to participate in class activities as learning progresses actively. A story told in written form is a story about an event that is told consistently to have a meaning that can reflect the author's interpretation. Learning media flows learning material, moves the mind, and stimulates students' feelings, interests, and attention (Darmayanti & Abadi, 2021; Ulfah & Soenarto, 2017). Learning media is a supporting tool teachers use in learning (Amil et al., 2020; Daryanti et al., 2022). In this case, it is a process to stimulate students' thoughts, feelings, concerns, interests, and attention so that the learning process can be well established. Interactive learning media presents video-recorded content under computer control to students, who hear, see, and respond to content and provide active respondents (Ilmiani et al., 2020; Wibowo & Rahmayanti, 2020). Therefore, Android-based interactive learning media is very important to be applied in elementary schools as a tool for learning processes in and outside the classroom, especially online learning. So that learning is more effective and utilizing smartphones as learning and teaching aids by students and teachers (Alfawareh & Jusoh, 2014; Herbert et al., 2021).

The advantages of learning through multimedia are learning activities based on Microsoft PowerPoint multimedia or interactive CDs that can ease the teacher's task and stimulate learning enthusiasm (Gluzman et al., 2018; Putra et al., 2017). In addition, previous research findings also stated that multimedia allows teachers to easily control the material provided, while learning can repeat or review material that has yet to be understood (Rofiq et al., 2019; Suwiantini et al., 2021). In addition, other findings also state that teaching and learning activities become more efficient and effective so that the expected learning objectives can be achieved (Amelia & Harahap, 2021; Dinata, 2014; Lestari et al., 2020). The advantages of this research are that interactive learning media based on Android can be used anywhere and anytime, can be used repeatedly if students do not understand during the learning process, and can be used directly via a smartphone without being connected to the internet. Android-based interactive learning media can assist teachers in creating interesting learning media and can be liked by students when teaching

and learning to improve student learning outcomes. This study analyzes interactive learning media's development process, validity, and effectiveness on learning outcomes in Indonesian subjects.

2. METHOD

This study uses the ADDIE development model to create interactive teaching materials for fifth-grade students at SDN 2 Lenek Pesiraman. The ADDIE development model was chosen because it has clear, simple, structured, and systematic stages of product development. It goes hand in hand with affirmation (Basyar, 2020). The ADDIE model is a model that supports learning and helps develop effective and dynamic learning. The five stages of the ADDIE development model are analysis, design, development, implementation, and evaluation. The ADDIE model steps are presented in Table 1.

Table 1. The ADDIE Model Steps

Stage	Steps
Analyze	Analyze performance Analyze needs Analyze the facility and environment
Design	Make storyboards and flowcharts of interactive learning media
development	Collection of material related to interactive learning media that will be developed Arranging all material into the form of interactive learning media Combining all the good elements in the form of images, text, and animation Review by experts
implementation	Application of interactive learning media that has been reviewed by experts and has been repaired/revised for teachers and students in the field
evaluation	Stages of testing the effectiveness of interactive learning media and media revision

Conducting expert tests such as subject content expert tests, learning design expert tests, and learning media expert tests are the subject of this research on the development of interactive learning media. Three students took the individual test consisted of one student with high learning achievement, one with moderate learning achievement, and one with low learning achievement. Six students who took part in the small group trial consisted of two students who had high learning achievement, two who had moderate learning achievement, two who had low learning achievement, and 24 fifth-grade elementary school students who took the effectiveness test. Questionnaires and test methods were used as data collection methods for this research—the questionnaire used in this research instrument. The grid of the research instruments is presented in Table 2, Table 3, Table 4, and Table 5.

Table 2. Learning Content Experts Instruments

No	Aspect	Indicator	Number of Items
1	Curriculum	1. The suitability of the material with learning indicators 2. The suitability of the material with the learning objectives 3. Compatibility of the material with multimedia	4
2	Method	1. Clarity of presentation of material, examples, pictures, and animations 2. Material completeness, examples, pictures, and animations	6
3	Language	1. Appropriate use of language 2. Clarity of sentences according to student communication 3. The accuracy of the sentence follows the student's communication	2
4	Evaluation	1. The difficulty level of the questions 2. The suitability of the questions with the learning objectives 3. The questions given are easy to understand	3

(Sudatha & Tegeh, 2015)

Table 3. Learning Design Experts Instruments

No	Aspect	Indicator	Number of Items
1	Learning Design	1. Clarity and suitability of the formulation of indicators 2. Clarity and suitability of indicators 3. Clarity and suitability of methods 4. Clarity and suitability of steps 5. Clarity and suitability of techniques 6. Clarity and suitability of assessment instruments 7. Ease in learning	8

(Sudatha & Tegeh, 2015)

Table 4. Learning Media Expert Instruments

No	Aspect	Indicator	Number of Items
1	Text	1. Clarity of the text (readability of the text) 2. Clarity of text presentation 3. Clarity of text size 4. Clarity of text type	4
2	Image	1. Image layout 2. Quality balance 3. Interesting colors and images	5
3	Animation	1. Quality animation with material 2. Interesting animation with material 3. Suitability of animation with the material	3
4	audios	1. Clarity on the use of music/sound and narrator 2. Appropriate use of sound and the narrator's voice	4
5	Packaging	1. The attractiveness of the CD cover with the contents of the material 2. Suitability of the CD cover with the contents of the material	2
6	Accessibility	1. Ease of access/use of learning multimedia 2. Smooth interactive links	2

(Sudatha & Tegeh, 2015)

Table 5. Individual Trial, Small Group Trial, and Field Trial

No	Aspect	Indicator	Number of Items
1	Media	1. Text 2. Image 3. Videos 4. Animation 5. Audios	5
2	Material	1. Using examples in the media to make it easier to understand the material 2. The material on the media is easy to understand 3. The material is presented according to what is learned at school	3
3	Strategy	1. Media can attract students' attention	1
4	Evaluation	1. Clarity of instructions for working on the problem 2. The questions presented follow the material being studied	2
5	Benefit	1. The use of multimedia facilitates the learning process	1

(Suartama, 2016)

This study used qualitative descriptive analysis, quantitative descriptive analysis, and inferential statistical analysis to analyze the data. Scores and input/suggestions are the data collected in this study. The results of the quantitative descriptive analysis of this study were used to test scores. Using a Likert scale, this method converts the data obtained from a questionnaire or questionnaire into a score for analysis. After that, proportional changes were made to the scores of each subject. The qualitative descriptive analysis method examined the inputs and suggestions obtained. To revise the learning media developed, qualitative data from responses, input, criticism, comments, and suggestions for improvement are grouped for this analysis. In contrast, the level of product effectiveness on student learning outcomes before and after using interactive learning media is determined through inferential statistical analysis. The pre-test and post-test on subjects were used to collect data for the test group.

The test set consisting of 30 multiple choice questions that have undergone a series of tests before is used to measure the effectiveness of interactive learning media developed through a pre-test and post-test. Among the tests are: (1) the validity test which shows that 20 questions can be used and ten questions are invalid; (2) test the reliability of the test, which shows that the test developed meets the criteria of high reliability (r11 = 0.93); (3) the different power test has a good ratio (D = 0.59); and 4) the difficulty level of the test which has a medium level of difficulty (Pp = 0.69).

3. RESULT AND DISCUSSION

Result

This study presents three main points, (1) the process of developing interactive learning media, (2) the results of the validity of developing interactive learning media, and (3) the effectiveness of interactive learning media. Developing interactive learning media using the ADDIE model consists of 5 stages. The analysis is the first step. The analysis phase requires extensive observation of learning resources, learning media, student challenges during the learning process, learning materials that are difficult to understand, and school facilities and infrastructure. Development research needs analysis results: (1) student characteristics and learning problems analysis. Based on the results of interviews with fifth-grade teachers at SD Negeri 2 Lenek Pesiraman, fifth-grade students found difficulties learning Indonesian subjects. When the teacher explained the explanatory text material, students still needed help understanding the meaning of the word Indonesian itself because they needed to be used to using Indonesian. But often use their local language (Sasak), especially without getting used to it when communicating. Student constraints in learning due to a lack of learning support tools, such as not implementing learning media. Because teachers are less able to make learning media and only use lecture and book methods, (2) analysis of facilities and environment. Based on the results of observations made at SDN 02 Lenek Pesiramanan regarding the facilities and their environment, they have used supporting learning media in the form of LCDs and have programmed one class one laptop. However, not all are available. Only four laptops are used in rotation and during online learning at SDN 02 Lenek. Pesiraman uses video lessons via cable TV, which requires tiring planning and process, and the teachers enjoy it. In addition, interviews with fifth-grade teachers at SD Negeri 2 Lenek Pesiraman found that teachers have basic computer and laptop skills, including using Microsoft Word to make assignments and reports and Microsoft PowerPoint to make media presentations straightforwardly, and (3) analytical skills. In making interactive learning media, competency analysis is used to identify skills that students must have after completing the learning process.

Design (planning) is the second stage. After the data was collected during the observation and interview stages of the analysis phase, solutions were found for learning problems by creating interactive learning media that combines text, video, images, animation, and games. The design phase is the next necessary step. The actions must be taken at this stage: 1) Create an interactive learning media flowchart. Making a flowchart to help provide an overview of the workflow for developing interactive learning media programs on each menu from the start of the program's opening to the end of the program's closing is the first step that must be taken at the design stage. After creating a flowchart, the next step is to create a storyboard. Before moving on to making interactive learning media products, the use of storyboards is very helpful in making interactive learning media. The question grid used as a reference when making questions is compiled. Later, these questions were used to evaluate the efficacy of the media. Indonesian language content experts then validated the 30 questions that were made. None of the 30 questions that were made and tested were invalid. (4) Make a lesson plan. It allows the learning steps to be arranged systematically to achieve the learning objectives optimally. Design (planning) is the second stage. After the data was collected during the observation and interview stages of the analysis phase, solutions were found for learning problems by creating interactive learning media that combines text, video, images, animation, and games. The design phase is the next necessary step. The actions must be taken at this stage: 1) Create an

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Development is the third stage. The flowchart and storyboard designs created during the design phase will now be realized in the development stage, where they will be turned into real products ready to be used in the learning process. At this stage, the initial activities consist of collecting teaching materials, text, images, audio, video, and animation, which will be packaged into interactive learning media. Another activity is gathering materials. The next stage of designing interactive learning media is carried out after collecting all the necessary components. The Powerpoint Ispring Suite 10 application, which functions as the main interactive learning media program to be developed, will process the components that have been collected, such as material, text, images, audio, video, and animation.

Implementation is the fourth stage. The implementation phase comes after the analysis, design, and development stages. Several stages of implementation must be carried out to assess the attractiveness and feasibility of the product: 1) Test the validity of the product, which is carried out expertly. Some experts are learning design experts, learning media experts, and fifth-grade Indonesian material experts. 2) Product trials include a) individual trials with three fifth-grade elementary school students, b) small group trials with six fifth-graders, and c) field trials with 24 fifth-graders in elementary school. Product trials were conducted to determine the suitability of interactive learning media with the characteristics of students and learning and the attractiveness of previously developed interactive learning media to determine whether interactive learning media can be used in the learning process. Evaluation is the fifth stage. The final development stage of the ADDIE model is the evaluation stage. At this stage, the authenticity of the interactive learning media products that have been made will be evaluated. The purpose of testing, testing product validity, is to determine the feasibility of the product. Formative evaluation is the type of evaluation used at this stage. Formative evaluation is carried out to determine whether or not the developed interactive learning media products are utilized in the learning process. The results of expert test product validity tests, individual trials, small group tests, and field tests all contribute to whether making interactive learning media products is possible. By distributing questionnaires to experts and students, product validity was assessed. Before entering the product into class instructions, this validity test aims to ensure whether or not the product is feasible. The product validity test results are presented in detail in Table 7.

Table 7. Product Development Validity Results

No	Trial Subjects	Validity Results (%)	Description
1	Learning Content Expert Test	96,36%	Very good
2	Learning Design Expert Test	95%	Very good
3	Learning Media Expert Test	94,66%	Very good
4	Individual Trial	85,08%	Good
5	Small Group Trial	83,47%	Good
6	Field Trials	80,20%	Good

Table 7 shows that the results of the validation percentage for the development of interactive learning media obtained the percentage of expert tests with very good criteria and trials with good criteria. In addition, input from experts and product trial subjects can be considered and used as improvement materials to perfect the developed product in carrying out the validity test. The results of interactive learning media after revision are presented in Figure 1.

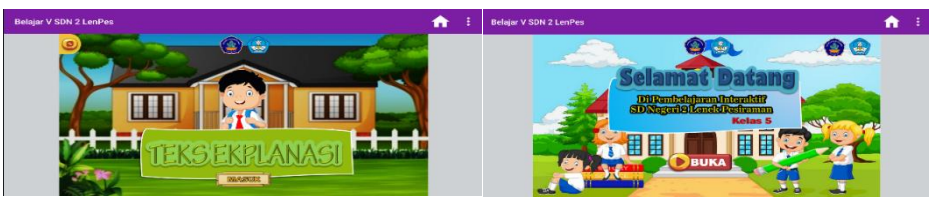

Figure 1. Initial Display of Interactive Learning Media

Discussion

Referring to the assessment results by learning content experts on the developed interactive Indonesian learning media products, the results obtained by an achievement level of 96% indicate very good qualifications in terms of validity. Superior qualifications for each indicator can be achieved through several important things, including Learning characteristics and student competencies reflected in competency standards, basic competencies, and learning objectives in interactive learning media. In interactive learning media, information is presented easily and logically and supported by examples such as pictures, animations, videos, and quizzes relevant to the studied information (Pratiwi & Wiarta, 2021; Siamy et al., 2018). The use of language and sentences in educational materials that are communicative and simple (Muchtar & Nasrah, 2021; Yasa et al., 2021). It is also supported by a statement that states that buyers must pay attention to the clarity and interrelationships between learning media, indicators, objectives, and materials when selecting and using media in the learning process in the classroom so that the media is more effective in achieving learning objectives (Abdurrahman & Masor, 2019; Erwin & Syukur, 2019; "Media Pembelajaran Berbasis Multimedia Interaktif Untuk Meningkatkan Pemahaman Konsep Mahasiswa," 2018).

The results of the assessment of the level of effort given to interactive learning media products developed by learning design experts, the results of the validity assessment are 95%, indicating that they are very good qualifications. Several significant points made achieving very good qualifications on each indicator possible: The developed interactive learning media can motivate students to learn—clarity of description and discussion of the material. Developed interactive learning media can improve student learning outcomes. The ability of interactive learning media that is developed can increase students' knowledge and understanding of learning (Muchtar & Nasrah, 2021; Pratiwi & Wiarta, 2021; Siamy et al., 2018). Appropriateness of the steps used in learning. It is supported by research that states that lesson planning will be useful to determine student understanding during the learning process, and learning evaluation will be useful to ensure the process runs smoothly (Abdurrahman & Masor, 2019; Erwin & Syukur, 2019; Yasa et al., 2021). Lesson planning has several components: media, learning strategies, and methods.

Regarding the results of validity by learning media experts, referring to the assessment given by learning media experts on interactive learning media products that have been developed, the achievement level calculation results are 95%, so they are very good qualifications. Very good qualifications for each indicator can be achieved due to several important points: (1) The accuracy of the placement of images on the media is appropriate. (2) Learning videos on the media following the material. (3) The selection of animations in learning videos and media is interesting. (4) The appearance of learning media with the contents of the material is appropriate. (5) Instructions for using instructional media are appropriate. It was reaffirmed by (Sudarma et al., 2015), who stated that students learn more effectively when they have control over their learning. Interactive learning media must allow students to control the media supported by research findings (Arham, 2016). Elements in the media, such as pictures, videos, and animations, assist students in obtaining more in-depth information, increasing the information storage capacity in the brain.

Judging from the results of the validity of the product trials, referring to the results of individual test assessments of interactive learning media products that have been developed, the achievement level calculation results are 85.08%. The small group test obtained the achievement level calculation results, 83.47%, and field tests obtained the calculation of the level of achievement, 80.20%, so the three assessment results were in good qualification. A good qualification for each indicator can be achieved due to several important points: the appearance of learning media is very attractive. The text, images, colors, animations, video, and audio quality is clear. The language used is easy to understand. The use of learning media can motivate students to learn (Hotimah & Muhtadi, 2018; Kurniawan et al., 2019; Munawaroh et al., 2020). The material presented is easy to understand. It is consistent with research findings which state that students will be more likely to revisit material presented outside the classroom if it is easy to access or use the media (Gluzman et al., 2018; Mulyadi, M., Atmazaki, A., & Syahrul, 2019; Suwiantini et al., 2021). Interesting learning materials can also encourage students to learn, and communicative language can make it easier for students to understand the material (Amelia & Harahap, 2021; Rofiq et al., 2019).

Students' interest in participating in the learning process can impact the success of teaching and learning activities (Dewi et al., 2019; Pangaribuan & Saragih, 2014). The inability of students and teachers to carry out learning activities in schools effectively is often the cause of a lack of interest in learning among students. An important alternative approach in the learning process is the teacher's efforts to increase students' interest in the subject material (Diartha et al., 2019)(Dwiqi et al., 2020; Saifudin et al., 2020; Wulandari et al., 2020). Student learning activities are strongly influenced by interests which are influenced

by several factors, including being aware of needs, obligations, moods, and open media (Septiani et al., 2020; Wahyuningsih & Mustadi, 2016). Learning media, especially interactive multimedia learning, are five factors that influence students' interest in the events mentioned above, which are relevant to this research.

Traditional education is not able to meet the needs of students during the learning process in class, so interactive learning media emerges as a means of satisfying students' low interest in learning. Students need help understanding the information taught to them due to the realities of traditional education. As a result, students lose interest in learning, and their learning outcomes suffer (Lee & Osman, 2012; Umarella et al., 2019). Traditional education is not able to meet the needs of students during the learning process in class, so interactive learning media emerges as a means of satisfying students' low interest in learning. Students need help understanding the information taught to them due to the realities of traditional education. Students lose interest in learning, and their learning outcomes suffer too.

4. CONCLUSION

Interactive learning media with valid and effective explanatory texts are used in the classroom to improve the learning outcomes of fifth-grade elementary school students. Students can not only see and hear but can also interact well when learning when using interactive learning media equipped with concrete examples in the form of pictures, audio, voice narrations, animations, videos, and interactive quizzes. This interactive learning media can also create an atmosphere in the learning process that is more varied and interesting because students can communicate with each other and respond to questions presented in the media.

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