Development of Interactive Visual Novel Learning Media Based on Android Applications in Islamic Religious Education Subjects

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Abstract: This research aims to develop interactive visual novel learning media on historical PAI material. In other words, this research was conducted to determine the suitability of learning media and students' responses when using them. Research and Development with the ADDIE instructional design model is used in this research. The results of this research show that: First, learning media has been created using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model, producing a product in the form of interactive visual novel learning media based on an Android application with the name EduSIDI. Second, the learning media designed and created has passed the assessment stage by experts to declare it suitable for use in the learning process. Testing of learning media is carried out in the form of appropriateness of content, appropriateness of language, appropriateness of presentation, and appropriateness of graphics. Third, applying EduSIDI learning media shows positive criteria for learning outcomes and creates a pleasant PAI learning atmosphere.

1 INTRODUCTION

Education today is one of the activities that cannot be separated from human life. Education is the core of *the Universal Declaration of Human Rights* (UDHR). The declaration places education as an effort to increase respect for human rights (Dhillon, 2011). In addition, education is currently an essential component in achieving sustainable development goals *(*SDGs). Education, in this case, is expected to contribute to development by improving the quality of human resources in a better direction (Block et al., 2018). Quality education will encourage individuals to maximize their potential in various aspects, such as skills, knowledge, training, and other individual abilities. These abilities will later become provisions for each individual to live their lives (Algraini, 2021). Thus, each needs to get the best education to maximize their potential as provisions for living life.

One of the factors that contribute to the success of education is the learning media. Learning media is a tool for teachers in teaching and a means of conveying messages from learning sources to recipients of learning messages (Nasrudin et al., 2024). Learning media helps as a channel for learning materials to students in the education process so that the material can be better understood (Hikmandayani et al., 2021). A better understanding of the material can be achieved because learning media can accommodate the needs of students' learning styles so that they are more comfortable participating in learning activities (Haryana et al., 2022). In addition, the use of learning media today also makes it easier for teachers to manage the learning process. The development of today's technology as a medium allows teachers to carry out the face-to-face and remote learning process (Mustofa et al., 2022). Thus, it is essential for various parties implementing education to understand learning media.

Based on the results of preliminary studies and observations at SMP Negeri 44 Bandung, it is known that there are several areas for improvement in the Islamic Religious Education learning process. These shortcomings include the need for more interactive

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learning media, and students quickly get bored with the usually used media. The concerned teacher also admitted that he had little difficulty conveying learning to students because of these problems. Based on this, the researcher has the initiative to develop interactive learning media in Islamic Religious Education learning in the history group. The history group in Islamic Religious Education learning was taken because the history group is a group that is known to have boring problems. Based on the preliminary study results, the author initiated the development of an interactive learning model involving students in every process (Purwanto et al., 2024). The researcher then took the title "Development of Interactive Visual Novel Learning Media Based on Android Applications in Islamic Religious Education Subjects."

Learning media is one aspect that must be considered in education. Good media can positively influence students to follow the teaching and learning process. The quality of good learning media is believed to be able to improve student learning achievement (Liliana et al., 2020). In addition, effective learning media can increase positive attitudes, encourage motivation, and improve student understanding of the subject matter (Joko et al., 2023). Media can also support the establishment of effective communication and interaction for educators with students in the learning process in the classroom (Yuniarti et al., 2020). Thus, selecting a practical media concept can affect the development of students. Thus, developing learning media is essential in overcoming the problems of learning media in schools.

2 THEORETICAL FRAMEWORK

2.1 Learning Media Design Framework

Learning media design, both for formal and non-formal education, must refer to the applicable curriculum. However, the curriculum does not explicitly state the types of supporting learning media that may or may not be used in the learning process. This allows everyone to develop learning media as widely as possible as long as it is good and supports the achievement of learning objectives. Learning media is an essential part of the learning process itself.

According to Mulyanta & Leong (2009), at least everyone needs to follow several steps in designing learning media materials. First, it is necessary to adhere to the basic principles of instructional design. In general, instructional design is a systematic process that produces practical, detailed, and detailed learning materials, including the evaluation process and form that must be implemented. After the development design is determined, the next step is to create a model. Given the many instructional design models, choosing the model that best suits the learning objectives is necessary. The ADDIE model is the *Analysis*, *Design*, *Development*, *Implementation*, and *Evaluation model*.

2.2 Learning

Learning is the process of student interaction with educators and learning resources in a learning environment (Hanafy, 2014). Learning is the help educators provide so that the process of acquiring knowledge and knowledge, mastery of skills and habits, and forming attitudes and trust in students can occur (Fitrah et al., 2022). Based on that, learning becomes an essential matter for the acquisition of knowledge, mastery of skills, and character formation for students, so it should always be carried out anytime and anywhere.

The learning process should be a set of principles that can be used as a guideline for compiling various conditions needed to achieve educational goals. Learning and teaching activities are a strategic effort to achieve the expected goals. Students carry out learning activities, and through these activities, there will be changes in their behavior. In contrast, teachers carry out learning activities to facilitate the learning process. Both activities will not be separated from the situation of mutual influence in the pattern of relationships between the two subjects. However, here, the teacher plays a more significant role as a manager (Nugraha, 2018). Thus, harmony is needed between teachers and students to carry out their respective rights and obligations during the teaching and learning process.

Teaching is defined as the process of conveying information from teachers to students. Learning is a process of interaction between students and their environment so that there is a change in behavior for the better. Therefore,Sudjana (2008, p. 19)explains the competencies that a teacher must have or teacher competencies that are closely related to efforts to improve the learning process, and results can be grouped into four abilities, namely: planning teaching and learning programs, implementing and leading the teaching and learning process, assessing the progress of the teaching and learning process, and mastering

the learning material in the sense of mastering the field of study or subject that is being taught.

2.3 Learning Media

Learning media is a channel or bridge from learning messages delivered by the message source (teacher) to the message recipient (student) with the intention that the messages can be absorbed quickly and accurately according to their purpose (Purnamasari, 2019). The primary function of learning media is to help create a more effective learning situation (Ekayani, 2017). Another function is to clarify the presentation so that it is expected to improve the quality of the learning process and reduce verbalism (misinterpretation) (Indayani, 2015). Based on the description above, learning media is anything that is used to convey messages and can stimulate students' thoughts, feelings, attention, and will so that it can encourage a deliberate, purposeful, and controlled learning process.

There are several advantages if media is used in the learning process. Some advantages of using media in the learning process include making it easier for students to grasp the delivery of learning materials, making the atmosphere more enjoyable, and training student cooperation. However, in this case, teachers need to prevent the dominance of one student or a group of students, but rather, all students should be actively involved in the learning process (Salsabila et al., 2020). Thus, learning media is beneficial, especially if teachers can manage their classes well, as they need to be used in every learning process.

In its development, learning media follows technological developments. According toArshad (2009, pp. 29-32), based on technological developments, learning media can be grouped into four groups, namely:

1. Print technology, namely the means of producing or conveying materials, such as books and static visual materials, primarily through mechanical or photographic printing processes, including text, graphics, photographs, or photographic representations and reproductions.
2. Audiovisual technology, namely the method of producing or delivering material using mechanical and electronic machines to present audio and visual messages.
3. Computer-based technology is a way of producing or delivering material using microprocessor-based sources. The difference in media produced from the other two technologies is that information or material is stored in digital form, not in printed or visual form.

Hybrid technology is a way of producing or delivering material that combines several forms of computer-controlled media.

2.4 TGT Cooperative Learning Model

The learning model is a plan or pattern used to compile a curriculum, organize subject matter, and instruct teachers in class (Dahlan, 1990). Thus, the learning model can be interpreted as a conceptual framework that systematically describes the steps of organizing or learning experiences and guidelines for implementing the learning process to achieve learning objectives. The learning model used in this study is the TGT-type Cooperative Learning Model.

According to Slavin (1980), *a team games tournament* (TGT) is a group tournament-based learning with each group consisting of about 4 to 5 people. Students are assigned to teams according to procedures that maximize heterogeneity in ability level, gender, and race. The team's primary function is to prepare its members to do well in the tournament. After an initial class presentation by the teacher, teams are given worksheets that cover similar academic material to that which will be included in the tournament. Teammates study and quiz each other to ensure all team members are prepared. After discussions with their team members, the learning activity is carried out with a tournament session.

2.5 Learning Outcomes

Learning is a kind of change that is shown in changes in behavior, which is different from before the individual was in a learning situation and after carrying out similar actions (Setiawati, 2018). Meanwhile,Hergenhahn (2008, p. 2)defines learning as a relatively permanent change in behavior resulting from repeated practice. Aunnurrahman (2009, p. 48)added that learning is a complex internal process, and those involved in the internal process include the cognitive, affective, and psychomotor domains. From several theories above, researchers conclude that learning is a process in which a person changes, including the cognitive, affective, and psychomotor domains because they have gone through a process.

2.6 Fun Learning

Researchers in this research also gave questionnaires to students to find out their psychological condition when using this learning media. Researchers wanted

to know to what extent the learning media developed was enjoyable. Enjoyable learning is taken from the theory of Indrawati & Setiawan (2009), which states that there are several indicators that learning can be said to be enjoyable, including (1) A relaxed learning atmosphere, free from pressure and safe for students, (2) A learning atmosphere that arouses interest in learning and involvement or full attention to students, (3) An exciting learning atmosphere, students' attention is poured out, and an engaging learning environment, (4) Students are enthusiastic, have a feeling of joy, and high concentration when learning

3 RESEARCH METHODS

This research was conducted using a research and development approach (*Research and Development*). *Research and development* is a process used to develop and validate educational products systematically to improve knowledge (Hanafi, 2017). The design of the learning model used in this study is the ADDIE model (*Analysis-Design-Development-Implementation-Evaluation*) based on the consideration that the model is suitable for developing and developing learning model products that are right on target, effective, and dynamic and are very helpful in developing learning for teachers. This model can be used for various forms of product development, such as models, learning strategies, learning methods, and learning media (Fahmi, 2016).

The ADDIE instructional design model (*Analysis-Design-Development-Implementation-Evaluation*) is a generic learning design model that is a guideline for building practical, dynamic training program tools and infrastructure that supports the training performance itself, thus helping training instructors in managing training and learning (Danks, 2011). This model uses five stages or steps as follows:

The ADDIE model is used to design learning systems. The following are activities at each stage of developing a learning model or method (Branch, 2009):

1. Analysis

Analysis is conducted to determine the needs required. The activities carried out are in the form of literature studies and field studies. Literature studies are conducted to see the syllabus regarding the PAI learning system. Field studies are in the form of observations and interviews. Observations are made on student learning in schools related to PAI learning. Interviews are conducted with PAI teachers.

2. Design (Design)

The design stage is carried out by preparing learning media. The selection of learning materials is based on the Islamic Religious Education subject syllabus used at school.

3. Development

Development in the ADDIE model contains product design realization activities through validation tests by media and material experts. This activity is carried out to obtain suggestions, comments, and input that can be used to develop learning media.

4. *Implementation*.

At this stage, the learning media created with the method developed is implemented in an actual situation, namely in the classroom. During the implementation, the media that has been developed is applied to actual conditions. A *Pre-Experimental Design is carried out* in the form of *a One-Group Pretest-Posttest Design* to provide feedback on the application of the media.

O1 x O2

(Sugiyono, 2016, p. 75)

Information:

X = Treatment given

O1 = pretest value (before Treatment)

O2 = posttest value (after Treatment)

In addition, researchers also distributed questionnaires to determine the psychological conditions of students in the learning process.

5. *Evaluation*

Evaluation is carried out to review whether each phase is correct, and then revisions are made based on the evaluation results or needs that still need to be met by the media.

4 RESULTS AND DISCUSSION

Figure 1: ADDIE Development Model (Branch, 2009).

The design and creation of the learning model used in this study is the ADDIE design model (*Analysis-Design-Development-Implementation-Evaluation*). The activities of this model include:

4.1 *Analysis (*Analysis Problems*)*

The analysis stage is carried out to review what needs are felt necessary to be made into a product in this study. EduSIDI learning media is designed based on the results of observations and interviews conducted with PAI subject teachers at SMP Negeri 44 Bandung City. This learning media is an interactive visual novel learning media that is expected to complement learning media in meeting user needs. Educators and students, as educational practitioners, are expected to be able to use this learning media as a solution to the lack of interactive learning media in the school and to overcome student boredom with the same learning media every day.

4.2 *Design* (Learning Et Al.)

At this stage, the learning media design is carried out based on the analysis results obtained. The selection of materials in the learning media is chosen based on the PAI subject syllabus, which is considered the most boring for students. The learning media designed are in the form of visual novels, quizzes, learning objectives, and instructions on how to use the application.

In developing a media product, there are several phases that need to be passed. To achieve good development, at least two phases need to be passed, namely the planning phase and the production phase.

4.2.1 Planning Phase

The planning phase is carried out to determine the learning media that will be created to suit the needs and targets. In this planning phase, there are several stages that must be passed, namely user analysis, material analysis, compiling GBPM, software and hardware needs analysis, creating a design or *flowchart*, creating a rough layout, and collecting images or illustrations.

The results of observations and interviews with one of the teachers in the form of data showing the lack of use and difficulty in obtaining interactive learning media. This is a sad thing. Moreover, if you look back, interactive learning media based on Android in the PAI subject of the history group is minimal.

Regarding the subject matter, the researcher was asked to design learning media containing content about the entry of Islam into the archipelago. Knowing this, the researcher then immediately conducted a material analysis. The material analysis is used as content or content in the learning media that will be created so that its use is right on target. The material in this learning media is expected to be by the target, namely material about the entry of Islam into the archipelago for grade IX junior high school students. Before determining the material, the researcher first focused on the material to be contained; by the lack of material on the history group in PAI, the researcher and the school agreed to create a learning media for KD 3.14 to understand the history of the development of Islam in the archipelago. From the KD, the following material can be arranged: 1) The flow of preaching development in the archipelago, 2) A brief profile of the Walisongo, and 3) Ways of preaching Islam in the archipelago.

After conducting the material analysis, the researcher compiled the GBPM or Media Program Outline. GBPM is a guideline used by media developers in its creation based on data that has been analyzed, mainly focusing on the essential competencies that have been determined. GBPM is compiled to map the content and direction of learning media content.

Table 1: Media Program Outline.

Materi	Sub-Materi	Bentuk/Format Sajian	Referensi Materi
Sejarah Islam di Indonesia	Alur Dakwah Islam di Nusantara	Teks dan gambar; kotak dialog visual novel.	Buku siswa dan buku guru kelas IX
	Profil walisongo	Teks dan gambar; kotak dialog visual novel.	Buku siswa dan buku guru kelas IX.
	Cara-cara dakwah Islam di Nusantara	Teks dan gambar; kotak dialog visual novel	Buku siswa dan buku guru kelas IX

The software researchers used in this study included Microsoft Word, Canva, Adobe Animate, and Itch.io. Microsoft Word is a word-processing application. Researchers use this software to compile the material that is analyzed and developed for learning media so that it is neatly arranged and sequential. Researchers not only use Word to compile the material but also game modes or evaluations.

Next is Adobe Animate. Adobe Animate is programming software that can produce final products for Android or HTML5 applications. This software is the core of researchers' creation of learning media.

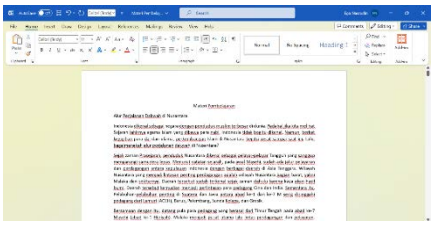

Figure 2: Use of Microsoft Word in the Media Development Process.

Another tool is Canva. Canva is used to create *flowcharts* and application designs on the learning media to be created.

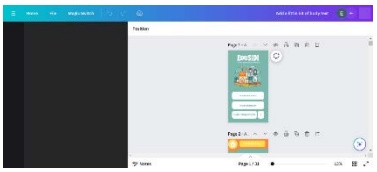

Figure 3: Using Canva in the Media Development Process.

Figure 4: Using Adobe Animate in Media Development.

In addition to the software used, in this study, the researcher will discuss the computer specifications used to use the software above. The hardware used by the researcher is a Lenovo laptop with an 11th Gen Intel® Core™ i3-1115G4 processor with 8192 RAM.

4.2.2 Creating a Flowchart Design

The design or *flowchart* created covers the entire application to be created. Starting from the home screen, material display, game display, display of how to use, and application information. *The flowchart* is more detailed as follows:

The details of this learning media *flowchart* can be explained as follows:

1) *The home screen* is the initial display allowing you to access all the application features. Let us learn is the main display for all materials.
2) Let Us Play is the main display for using game or evaluation features.
3) How to use it is a display of how to use the application and a brief explanation of some features.
4) Application information displays information about the application and the application maker.

4.2.3 Production

At this stage is the core of media creation. In this production phase, the implementation of ideas that have been designed and developed again to suit their use. This phase refers to *the flowchart* created in the previous stage, and the existing *layout* is redesigned to be designed with the material's content that has been analyzed to continue with the application creation stage.

Before making media, it is essential to determine production standards as a basis for making media. Therefore, in producing media, one must pay attention to the style guide that has been determined in advance; here is the display style that the researcher determined:

Panduan Gaya	Detail
Jenis font	March Rough, Calps Sans
Palet warna	Hijau (#7bb8ad), putih (#ffffff), oranye (#f68a45), kuning (#ffde59), dan hitam (#000000)
Ukuran teks	12
Bahasa	Bahasa Indonesia
Warna teks dialog	Putih (#ffffff)

Figure 5: Application Display Style.

In addition to style guides for production standards, design assets are also very important for creating UI/UX designs that are more conceptual. Here are the design assets that were created using Canva.

Figure 6: Rancangan Flowchart.

Aset Desain	Nama
	Tombol mari belajar
	Tombol mari bermain
	Tombol cara penggunaan
	Tombol informasi aplikasi
	Tombol putar dan berhenti musik
	Tombol *home*
	Tombol menuju materi alur perjalanan dakwah di Nusantara
	Tombol menuju materi profil singkat walisongo
	Tombol menuju materi cara-cara dakwah di Nusantara

Figure 7: Design.

After the materials, *flowcharts*, images/illustrations, music, *layouts*, style guides, and design assets are ready, the next stage is to create the UI/UX design for the Android application. This UI/UX was created using Canva Web. Here is the EduSIDI application design that has been created:

Ket.	Saran	Tindak Lanjut	Sebelum dan Sesudah Diperbaiki	
1	Berikan kata-kata pada background visual novel	Mengubah kembali background		
2	Menambah jumlah soal kuis interaktif sebagai latihan untuk peserta didik	Menambahkan jumlah soal kuis pada menu mari bermain		
3	Tambahkan ilustrasi lain agar tidak terlihat terlalu monoton	Menambahkan ilustrasi lain berupa catatan dalam background		

Figure 8: Suggestions for Improvement.

Desain	Keterangan
	Tampilan home screen
	Tampilan menu mari belajar
	Tampilan kuis mari bermain
	Tampilan pematerian visual novel interaktif

Figure 9: UI/UX Design Results-

4.3 *Development*

Development stage is carried out to realize the product design in the form of a validation test by a media expert. This activity is carried out to obtain suggestions, comments, and input that can be used to develop learning media. The validation aims to determine the level of feasibility of the learning media that has been created. Learning media is validated by media experts who are lecturers in the IT Literacy and Learning Media courses in the Field of Study.

Validation is carried out by interviews referring to the provisions for assessing learning media sourced from the National Education Standards Agency (BNSP), including the feasibility of content, presentation, language, and graphics presented with columns and suggestions for improvement. The following are the results of improvements obtained from the validation test:

4.4 *Implementation*

The learning media created and improved is then implemented as a learning media for Islamic Religious Education in class IX-E of SMP Negeri 44

Kota Bandung. The learning process steps are carried out based on the RPP that has been created. The implementation process is carried out in one meeting. Before entering the subject matter, students are asked to work on the pretest questions first. After working on the pretest, the learning activities are continued according to the steps of the TGT-type cooperative learning model.

The stages of the TGT-type cooperative learning model activities applied in this study are those conveyed by Slavin (Slavin, 1980). In the initial stage, learning activities are opened first with class-opening activities. After that, learning activities are then continued with group division. Group division is carried out evenly and considers the aspect of heterogeneity. After each group is formed, learning activities are continued with a discussion session for each group as a preparation step for the tournament. In this session, each group looks for material contained in the EduSIDI application. Each group member works hard to study the material so that their team can win when the tournament is held. After the discussion ends, the activity is continued with a tournament session. In this learning, the tournament held is a quiz tournament. Each student does the quiz on their respective cell phone. A group is declared the winner if the group has the highest average score. The group with the highest average is then given an award. After the award session, learning activities are then continued with a posttest. Each student fills out the distributed questionnaire. Only after completing the posttest will learning activities continue until the closing session. In this session, the students conduct concluding activities and a prayer together.

After the learning process is carried out, a posttest is carried out to determine the learning ability of students after learning using the designed learning media. Then, after the test is completed, students are also asked to fill out a questionnaire to determine the psychological situation of students when using the learning media that has been used. The questionnaire given is a Google form questionnaire of 40 statements related to the indicators of enjoyable PAI learning.

4.5 *Evaluation*

Evaluation is carried out to process the data obtained and review each phase that has been carried out correctly; then, a final stage revision is carried out based on the evaluation results or needs that still need to be met by the media.

The process of evaluating the success of this media is seen in the increase in student learning outcomes. The assessment of learning outcomes measured in this case only includes cognitive assessment. The assessment of the cognitive domain is obtained from the results of the pretest and posttest. The increase in student learning outcomes after using the EduSIDI learning media can be seen from the results of the increase in the average *pretest, posttest,* and N-*gain scores* presented in the table below:

Table 2: Test of Normality.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Selisih Pre-Test dan Post-Test	.183	16	.154	.971	16	.862

a. Lilliefors Significance Correction

Based on the table above, it is known that the significance value of the difference between the posttest and pretest of the student learning outcome instrument is 0.154. This value is more significant than 0.05, meaning the data is usually distributed.

The next step after the normality test is the paired sample T-test. The results of the paired T-test are as follows:

Table 3: Paired Samples Statistics.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	60.94	16	16.151	4.038
	posttest	89.63	16	11.488	2.872

The data above shows a difference between the average posttest and pretest values. The posttest value has an average value of 89.64. Meanwhile, the average pretest value is at 60.94. To find out whether the difference is significant, it can be seen from the table below:

Table 4: Paired Samples Test.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Selisih	-28.688	13.792	3.448	-36.037	-21.338	-8.320	15	.000

Based on the table above, it is known that the significance value obtained is 0.000. This value is lower than 0.025. This indicates that the null hypothesis is rejected, stating that there is no significant difference between the pretest and posttest. This means that there is a significant

difference in the value of student learning outcomes before and after learning. In other words, learning using visual novel media can improve student learning outcomes.

In addition to learning outcomes, researchers also gave questionnaires to students to determine their psychological conditions when using this learning media. The instrument used was an instrument about enjoyable PAI learning based on the theory of Indrawati & Setiawan (2009), which states that there are several indicators that learning can be said to be enjoyable, including (1) A relaxed learning atmosphere, free from pressure, and safe for students, (2) A learning atmosphere that arouses interest in learning and involvement or full attention to students, (3) An exciting learning atmosphere, students' attention is poured out, and an exciting learning environment, (4) Students are enthusiastic, have a feeling of joy, and high concentration when learning. The student responses related to this are as follows:

Minimum	Maximum	Range	Mean	Median
112	157	45	130	126

Figure 10: Fun Learning Statistics.

Based on the data, the average student's assessment results show that the PAI learning is already enjoyable at a high level, with a score of 130. The lowest student got a questionnaire score of 112, which means that the most saturated level of students still believe that PAI learning is moderate in the sense of not being enjoyable and not boring. The highest score is 157, meaning the student thinks PAI learning with visual novel learning media is enjoyable.

The interactive learning media development process results are based on existing theories. The increase in students' understanding after following the learning process with this media shows success in the cognitive transformation process of students. Not only that, students need to understand the knowledge conveyed. Based on the measurement results, students also consider the learning carried out to be fun for them. Of course, this is by previous research on interactive learning media. Interactive learning media has advantages in improving students' cognitive and affective aspects (Hikmandayani dkk., 2021). In addition, interactive learning media, on the other hand, can also attract attention because it involves students more in each process. Students, in this case, are involved in choosing options in the interactive dialogue in the visual novel application so that it does not seem monotonous and has a variety of exciting storylines (Greene et al., 2020).

5 CONCLUSIONS

Based on the results of observations, processing, and data analysis that have been carried out, learning media has been developed using the ADDIE model (*Analysis, Design, Development, Implementation, and Evaluation*). The development of learning media has resulted in a product in the form of an interactive visual novel learning media android application called EduSIDI. This media has been designed and passed the assessment stage by experts to declare it suitable for use in the learning process. Testing of learning media that has been carried out is in the form of content feasibility, language feasibility, presentation feasibility, and graphic feasibility. In addition, this media has also been tested on students, and positive results have been obtained. Using this media in learning can improve students' understanding of concepts and make them feel happy in following the learning process.

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