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ANDIN-MU: Development of Android-Based Descriptive Text Interactive Multimedia Materials in High School English Subjects

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Abstract
In learning there is a process of changing the behavior of a person who is initially unaware of something then becomes aware. In other words, there is a process of conveying knowledge between teachers and students or using learning materials. The purpose of this study was to develop interactive multimedia based on Android descriptive text material for Class X SMA Pasuruan English. This study uses the ADDIE model. In this development model there are five steps in the process, but in this study the researchers modified some of the steps used and adapted them to the environmental conditions affected by the Covid-19 pandemic climate. The steps taken are 4 out of 5 steps, namely (1) analysis (2) design (3) development and (4) evaluation. Collecting data in this study through interviews, documentation and questionnaires. The results showed that the media validation results scored 80%, while the content validation results obtained a score of 78%. The Likert scale used in the data calculation process shows that the developed interactive multimedia is very feasible to use in Pasuruan High School.

Keywords — Development, Interactive Multimedia, Descriptive Text.

Introduction

Education of every citizen is something that must be provided by the state. The declaration was contained in the first paragraph of the 1945 Constitution, paragraph 4, to educate the entire country. This means that education is an effort to educate the Indonesian nation and develop its potential (Rahman et al., 2022; Sujatmoko, 2016; Syaifuddin et al., 2022). In learning there is a process of changing the behavior of a person who is initially unaware of something then becomes aware. In other words, there is a process of conveying knowledge between teachers and students or using learning materials (Arianti, 2018; Hermanto, 2020; Inganah et al., 2023). This is the totality of human relations for the development of the whole human being and education is a continuous process that is always developing. One of the tools used to support education is the media (Budiman et al., 2019; Nelson et al., 2021).

Media is an absorption word from the Latin language, namely medius or medium which literally means intermediary or introduction (Zaki, 2020; Almahfuz, 2021). Media is a tool or channel used to convey messages or intermediaries to communicate and send messages (Darmayanti et al., 2022; Jamalludin, 2016; Sari, 2018). Educational media is an important and very strategic instrument in determining the success of the teaching and learning process, because the presence of the media can have its own impact on students (Hasanah, 2019; Nurrita, 2018). Educational media have positive forces and synergies that are able to change their attitudes and behavior towards creative and dynamic changes. The role of educational media is very much needed in learning where in its current development educational media is no longer seen as just a tool but an integral part of the education and learning system (Magdalena et al., 2021; Wahid, 2018). Learning media is a tool that can be used as an intermediary for messages so as to stimulate thoughts, feelings, concerns and interests as well as the willingness of students so that the learning process will achieve

learning goals effectively. According to Daryanto (2014) learning media as a tool and material in the learning process (Adilah, 2017; Balandin et al., 2010). Thus, teaching materials can be used as a source of teaching materials and can replace the teacher's role in the learning process. By using learning media, students can participate in the learning process to achieve their learning objectives and can understand the material well. English is a compulsory subject that must be mastered by students in facing challenges in the globalization era (Khabibah et al., 2021; Noviyanti & Setyaningtyas, 2017).

Language is a communication tool used by humans and is a point of difference between humans and other creatures, both individually and between groups (Rabiah, 2020; Sirbu, 2015). According to Keraf (2004), language is a means of communication between members of society in the form of sound signs created by human speech organs (Markub, 2019). Meanwhile, according to the Big Indonesian Dictionary, language is an arbitrary sound signature system, which is used by community members to work together, interact, and identify (Jasmawati, 2019; Setyawan, 2016). So language is a sound symbol that humans use to communicate with fellow humans to work together, interact, and identify themselves. The high school (SMA) that became the research site, namely Pasuruan High School. Including English, these English subjects all contain descriptive texts that students have learned in class X. Descriptive texts are English texts that describe and reveal the characteristics of some objects, places or creatures in general without searching or digging deeper. and extensive research. The first step taken by the researcher was to conduct a preliminary study by assessing the learning process and evaluating lesson plans by interviewing subject teachers. From the results of observations made in this area, it appears that students have difficulty understanding the material in the simple present form. The simple present tense is the content contained in descriptive text. The present simple is a material change in the form of a verb that is used to express an event, activity, or work that is happening at that time.

According to Raymond Murphy (2003), the present simple is used to express something that happens all the time or repeatedly, or to state something that is generally true. With students not understanding sentence structure and grammar in descriptive writing, this makes students less interested in learning the material and there are no facilities that contain this material for students to better understand the content being conveyed (Ikrima et al., 2020; Yuliawati & Nuriyanti, 2021). The teaching materials used by teachers and students are LKS books which only contain text and pictures. These factors make students bored and depressed so they lose interest in learning the material. The English subject for this descriptive essay needs to have visual aids as a supporting tool to attract students' attention, because the learning process so far has only been on paper, while the learning media used is still very important, not enough. Descriptive writing teaching materials in English require learning aids as a tool to support the learning process, because the material contains elements that cannot be explained by teaching methods alone. then you need relevant and interesting study material for this one (Jasmawati, 2019; Naserly, 2020).

Departing from the problems above, we need the right solution to create learning motivation for students, so as to improve student learning outcomes. The selection of the media itself certainly requires an appropriate needs analysis and is based on the RPP used. These problems can be solved by using a more interesting and easy to understand way. According to Anderson, media selection requires cognitive abilities, lessons do not involve foreign objects for students, involve communication skills, do not need motor demonstrations (performance models), do not need sound performances (Maharani et al., 2021; Miftah, 2015). Based on the flow described above, Anderson offers advice on media selection for Class X (computer group). The media group itself consists of 2 types, namely CAI (Computer Aided Instruction) and CMI. Interactive multimedia is included in CAI (Computer Aided Instruction), which is learning material that is complex and includes several combinations of text, visuals, audio, animation and video. Interactive multimedia is included in computer media (Juliandika & Mariono, 2019).

Android-based interactive multimedia is a learning tool that is appropriate to the problems encountered in English for descriptive texts and the characteristics of Pasuruan High School students. The interactive use of multimedia on the Android platform itself is also more flexible so that students can study descriptive literature anywhere (Utami & Akhyar, 2023; Watrianthos et al., 2022). The main advantage of this interactive multimedia is that users can react to the media used. Android-based interactive media is classified into media according to their use. Because this media uses smartphones as learning media (Damayanti & Kristiantari, 2022; Niswah & Nisa', 2022).

According to Wibawanto (2017) interactive multimedia is a medium that can be used to convey learning material to students effectively and efficiently. The main advantage of interactive multimedia is the interactivity between the user and the media. In this way, the presence of interactive multimedia can help teachers brand interactive multimedia to help teachers achieve learning objectives that have not been achieved before. A material developed with interactive learning media can make students more independent and motivated to learn (Cahyadi, 2021; Maryani & Amalia, 2018; Wibawanto, 2017). Putri & Ardi's research (2021) shows that the media developed can be used to facilitate independent learning in students (Putri & Ardi, 2021). Research by Ayu et al., (2019) shows that the development of interactive multimedia can improve student learning outcomes and increase student motivation. Research conducted by (1) multimedia development using the Hannafin and Peck model includes three stages, namely needs assessment, design, development and implementation. (2) character education-oriented interactive learning multimedia that is developed is valid with: (a) the results of the subject matter expert review show that multimedia has a very good predicate (90%), (b) the results of a multimedia expert review show the product has a very good predicate (96%), (c) the results of the review by learning design experts show that multimedia has a very good rating (90.7%), (d) the results of individual trials, small group trials and field trials show that multimedia has a very good rating (93.7%), (94.0%) and (93.9%). (3) the developed multimedia effectively improves Balinese language learning outcomes. This means that multimedia is proven to be effective in significantly increasing Balinese language learning outcomes (Ayu et al., 2019). Meanwhile, the research conducted by Lilinang, H., (2019) shows that the results of the expert validation show that the Wikitext multimedia is valid with an average result of 3.85 in the very valid category so this product is feasible to use. To find out the effectiveness of the product, a trial was conducted in class VIII of Guppi Islamic Middle School using Wikitext Multimedia with an LCD Projector, a comparison of the pre-test and post-test results of students who scored 60 increased from 10% to 44% with an average score of 64.5 in one trial. This shows that the use of WikiText Multimedia is effective in learning descriptive text because it has succeeded in increasing students' acquisition scores (Tahang & Yuliana, 2020).

Based on the results of this study, it shows that interactive multimedia is effective for use in learning. From the background of the problems above, it is necessary "Development of Android-based interactive multimedia on descriptive text material in English class X SMA Pasuruan".

Research Method

Android-based interactive multimedia development uses the ADDIE development model (Analyse, Design, Development, Implementation, Evaluation) for descriptive text material. Development is the process that produces product designs that can be used to solve real-world problems (Hartwell, 2017; Runggo & Hendriyani, 2021). This activity emphasizes the use of a theory, concept, principle or research to solve a problem. Development is the process of designing a product that facilitates learning and then developing that product (Maulidah & Wulandari, 2021). After that, the experimental stage was carried out which aims to determine the assessment that will result from a review of the product to be developed. This product will later be developed as a learning environment

that will be used in the learning process, useful for solving problems in learning English Class X SMA Pasuruan Descriptive Text Material.

In this study used data collection techniques, namely documents, interviews and questionnaires. The material itself is used to collect data in the form of documents and lesson plans (RPP). Interviews are used to collect information from teachers about student characteristics, learning patterns, learning supporting infrastructure, and problems that arise in the learning process. While the questionnaire or tool is intended to carry out the validation process, this questionnaire is intended to be used by material experts and media experts to be used in assessing the feasibility of the media used. Measuring the feasibility of product quality developed by researchers using a Likert scale where this scale acts as a rating to evaluate program success, evaluate benefits to determine the level of user satisfaction. Researchers use a Likert scale with 5 choices because it is simpler and can provide a definite answer. This will produce a value that will be processed and can determine the validity of the documents developed.

The results of the validation of materials, supports and supporting materials will be processed using a percentage calculation technique. Calculation of each aspect of the population variable then becomes an assessment of the product being developed. The following formula is used.

$$P = \frac{f}{N} X\ 100\ \%$$

(Arikunto,2010:244)

P = Percentage of numbers

f = Frequency that is being percentaged

N = Number of respondents multiplied by the highest score multiplied by the number of questions

After calculating the validation score results, the next step is to classify according to the following assessment criteria.

Table 1 . Assessment criteria

Score	Criteria
81-100%	Very good
61-80%	Good
41-60%	Enough
21-40%	Not enough
< 21%	Very less

Adapted from Arikunto (2009)

Results and Discussion

In the development of research developed by this researcher, this research produces interactive multimedia products that are used to support descriptive text material for English subjects for class X SMA Pasuruan. This interactive multimedia can only be used on smartphones with the Android operating system. This interactive multimedia uses a tutorial model with a game view that contains explanations, videos, and examples of documentation. At the end of the lesson, a test is held to assess students' understanding of the lesson after using interactive multimedia. In descriptive writing there are sub-materials, namely understanding descriptive text, language structure, text structure, present simple. In each of these sub-documents there is an explanation in the form of text and images. For simple present tense subtext, there are videos to help you understand the content more easily. The following are the steps that must be followed in the development model that has been adapted to the following steps.

1) Analysis is the first step in conducting research. At this stage, data collection is carried out for the materials to be used in designing learning media. at this stage of the analysis. Data collection was carried out in the form of interview data and documents. Interviews were conducted with English teachers whose findings included student characteristics, material characteristics, learning models, learning supporting infrastructure, and problems that occurred during the study program learning process. while the material produces lesson plans and books that will be used as learning resources, especially the English book for SMA/MA by Asep Mahdi et al.
2) Design The next stage is the design stage, the researcher plans what will be developed and the researcher has found the problems faced by the teacher, namely that students do not understand descriptive text, especially the present simple. Complementary material makes it difficult for students to accept the communicated material, so the teacher must provide appropriate support for use in learning. Based on the existing problems, material characteristics, student characteristics, develop multimedia lesson plans, organize material, create interactive multimedia and accompanying materials. The RPP is designed to follow the existing RPP guidelines, but is designed to accommodate media developed by researchers, especially interactive multimedia. It is hoped that the use of interactive multimedia can be a solution to problems that arise in descriptive text material and can become a learning tool for students during the current pandemic. This interactive multimedia will later contain text, audio, video and images and this media can be used for learning anywhere.
3) Development At this development stage, the production of the product design to be developed is carried out. The developed media is adjusted to the design at the design stage. The process of developing this interactive multimedia uses the Corel Draw X12 application, construct 2 and an additional application, namely C2 Buildozer as an HTML5 converter application to the APK format. There are several stages that must be passed, namely:
    a. Production At this stage the researcher made interactive multimedia using a software called Corel Draw X12 to design interactive multimedia starting from the initial appearance of the media, the main menu display, material content, quizzes to developer profiles. and researchers also enter data obtained at the planning stage so that it will produce a feasible and realistic interactive multimedia. After the design process uses the Corel Draw X12 application, the next step is to program the design results into an interactive multimedia using the Construct 2 application. Construct 2 is a game engine application that is used to build HTML 5-based games/applications for several platforms. So researchers take advantage of the Construct 2 application to create interactive multimedia. Then after being created through Construct 2, the final step is to change the HTML 5 format into an APK file which later files with APK format can be used on Android smartphones.
    b. Validation
    1. At this stage the researcher validates the developed media products, the resulting products are in the form of interactive and multimedia materials to be evaluated by experts in their fields. Validation aims to determine the feasibility, weaknesses and strengths of the product to be developed. Material validation for English subject teachers will be conducted every 1 September 2022 and responses will be accepted e.g. An example is added to the text illustrating the location of the text structure, ie. H. Identification and description by placing arrows or marks in descriptive text paragraphs. Then give an example of a simple pen introduction in a descriptive sentence and underline it so that students can easily understand it. The results of the material expert validation carried out when converted to the Arikunto measurement scale, 2009, yielded a percentage value of 80% which can be classified in the "very good" category. From this it can be concluded that the planned material is in accordance with the objectives of this study
    2. Validation Expert Media

Media expert validation was carried out for teachers of teaching and technology undergraduate programs with a minimum master 's degree . December 7, 2022. The results of the validation activity produced several inputs, namely the placement of navigation buttons that were less consistent. The results of the validation carried out obtained a percentage value of 78 when converted to the Arikunto 2009 measurement scale which is classified in the "good" category. Therefore, the developed interactive multimedia is very useful and can be used in learning activities.

c. Revision

In addition, in this phase, materials and media developed by researchers are developed for experts and the materials and media are validated based on the feedback and contributions received. The corrections made are described below.

1. Revisions From Material Experts

For material experts to provide some suggestions and input on the content of the material from the media that will be developed by researchers. The following revisions were obtained.

Table 2. Revision Expert Material

No	Reviews	Revision
1.	Give example location structure text on *descriptive text* that is *identification* And *description* with give arrow _ or sign on paragraph text description.	Already givenexample location*identification* and *descriptions*
2.	Give example location *Simple present tenses* on *descriptive text* And given underscore so participant educate can understand it	Already given example location *simple present tenses* and line lower *descriptive text*.

2. Revision From Media Experts

Revisions were made to the media developed by the researcher, namely interactive multimedia. There are several inputs obtained from media experts, namely as follows.

Table 3. Revision Expert Media

No	Reviews	Revision
1.	Placement knob navigation Which less consistent	Placement navigation button Already parallel and consistent
2.	Tidy up writing	I've tidied up the writing

4) Evaluation

At this evaluation stage, the researcher conducted a final evaluation that was carried out during the feasibility test on material experts and media experts, with the aim of obtaining input so that the media being developed is feasible and obtains maximum results. The purpose of this final evaluation is to refine the product being developed whether it is suitable for use in learning activities.

Based on the results of research on the development of Android-based interactive multimedia, descriptive text material for English subjects has gone through a validation test process by material experts and media experts. As for the material in this interactive multimedia, it is obtained from learning resources used by English subject teachers and obtained from various other literary sources. The following is a display of interactive

multimedia. Then after the students have studied the material in the interactive multimedia, questions are provided that can be used as a result of evaluating students' understanding of the material being studied, at the end of the quiz a scoring system will be automatically given to the students' achievements. So that students will learn material that is still not understood. Here is how it looks:

Figure 1. Display of ANDIN-MU Media

The learning media developed here is an Android-based interactive multimedia developed using the Construct 2 game engine application, while for designing interactive multimedia layouts using the Corel Draw X12 application which contains videos supporting learning activities. The following results on support eligibility have been made as follows. The results of the feasibility validation of material experts got a percentage of 80% which is included in the very good category. The results of the eligibility validation of media experts got a percentage of 78% which was included in the very good category.

This interactive multimedia was chosen as a learning medium because it was based on the advice given by Anderson which provided instructions in selecting media for class X (computer group). The media group itself consists of 2 types, namely CAI (Computer Aided Instruction) and CMI. Interactive multimedia is included in CAI (Computer Aided Instruction), which is learning material that is complex and includes several combinations of text, visuals, audio, animation and video. Interactive multimedia is included in computer media. Suyitno (2016) states that interactive multimedia in the form of text, images, and simulations can help students gain more knowledge, better understand the material, and experience the application of knowledge.

Wibawanto (2017) Interactive multimedia is a medium that can be used to communicate learning material effectively and efficiently to students. The main advantage of interactive multimedia is interoperability between users and media. Thus, the presence of interactive multimedia can help teachers achieve learning goals that have not been achieved before. This case is certainly a solution to the problems experienced by English subject teachers at Pasuruan High School, where students feel bored and bored so they need a learning media as an aid in the process of learning descriptive text material.

Research conducted by Juliandika & Mariono showed that the results showed that the results of the percentage validation of the media obtained a value of 84% while the results of the percentage validation of the material obtained a value of 85%. The data calculation process uses a Likert scale, this indicates that the interactive multimedia

developed is very feasible for use at Antarctica Sidoarjo High School (Juliandika & Mariono, 2019).

Conclusion

This Android-based interactive multimedia descriptive text document for class X English at Pasuruan High School was developed using the Android operating system as a smartphone application. This interactive multimedia was developed using the ADDIE development model (Analysis, Design, Develop, Deploy, Evaluate) developed by Branch. The results of the feasibility of developing interactive multimedia products were obtained through a questionnaire given to material experts and communication experts. The score of 80% on material validation with material experts is classified as very good. While the percentage of scores achieved in the media validation process for media professionals reaches a percentage of 78% which is classified as very good. Based on the percentage of results above, it can be said that interactive multimedia descriptive text documents based on Android in English Class X SMA Pasuruan are appropriate for use in the learning process.

Android-based interactive multimedia descriptive text material for class X English at Pasuruan High School was developed on the basis of a needs analysis conducted at Pasuruan High School. Interactive multimedia developed by researchers has several advantages, namely: 1) Interactive media uses a tutorial model which also contains material and quizzes in it so that it can be used for independent study, 2) Display interactive media that is developed according to the age of the students who are the object of research, 3) available lesson plans, how to care for media, how to use media etc. Based on the above advantages, it is hoped that the development of Android-based interactive multimedia can increase the enthusiasm of students in the learning process .

With the research on the development of interactive multimedia developed by researchers, there are several suggestions that can be used for further research in developing Android-based interactive multimedia, along with suggestions: media development carried out by researchers is adjusted to the characteristics of students, teacher characteristics, input from teachers and school infrastructure in Pasuruan High School. So if it is used by other schools, it is necessary to review it again

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