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Developing Android-Based Application for Vocational High School Students in Learning Tense

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ABSTRACT

The students at one of Vocational High Schools in Sarolangun, Jambi, have some difficulties in comprehending the English Tense, an essential ability in understanding sentence meaning related with time activities. This research aimed to develop an android-based application to help them overcome their difficulties. The development of the application made use of the Kodular website. The research method used was Research and Development (R&D) which followed the five stages of the ADDIE model as the developmental procedure. The stages of the ADDIE model are 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation. The data related with developmental process were collected using questionnaire then analyzed quantitatively and qualitatively. The result of this research was in form of an android-based application called FunTense which accommodates students' needs and preferences in the learning English Tense. The result indicated that the development was valid evidenced by the result of media validation with 78% score percentage and content validation with 91% score percentage. The students response showed an excellent category with total score percentage 92.95%. It can be concluded that the FunTense application developed in this research was valid and can be used as a learning media for vocational high school students.

1. INTRODUCTION

The current era is known as the globalization era. Globalization occurs as a result of numerous technological advances in information and communication. The globalization affecting numerous life aspects, including education. The global demand necessitate the world of education to constantly adapting technological developments to improve its quality. Many innovation aimed to improve the quality of teaching-learning process came from the advancement of technology. Selwyn (2011) stated that technology is being used in educational institutions to support learning, either as an information tool or as a learning media. In the present context, the teaching-learning activities currently changing into modern one which emphazied the use of current technology in its process.

In fact, there are still some schools that carried out the teaching-learning process traditionally, one of them is Vocational High School 10 Sarolangun. Vocational High School (VHS) aims to prepare the students to be able to work in certain fields. In terms to create graduates as a professional workforce, VHS are required to be able to develop their quality and relevance. According to Raja and Nagasubramani (2018), technology has the potential to increase educational access while also improving its relevance and quality. In addition, Marisa et al. (2020) argue that the use of technology in learning is one useful method in preparing the workforce for the future. Therefore, it is suggested for VHS to incorporate the use of technology in the teaching-learning activities.

Further, the graduation from VHS have better and more opportunity to work after the graduation. The chance to get jobs in this era of globalization is wide open due to the global market. It is undeniable that Vocational High School graduates can work abroad or in jobs with people from other countries. English is one of the skills that should be possessed by VHS students in facing the global market. The mastery of English by VHS students is highly emphasized with the expectation that students can become competent individuals who are

ready to face global competition in the future. Thus, the basic competence of teaching English in SMK is to improve students' communicative competence.

The result of preliminary observation and interview with an English teacher at VHS 10 Sarolangun, many students do not really understand English grammar, especially the use of tense. One of the reasons that make it difficult for them to understand tense is in Indonesian there are no tense. The students found it difficult to understand English tense eventhough they already learnt it. This is in line with Cowan (2008), who states that the use of verb forms is one of three most difficult areas for EFL to master. In addition, Vocational High School students have limited time to learn English in school. Furthermore, VHS students have to learn grammar by themselves because the current method of teaching does not focus on teaching grammar.

In the present context, the use of technology has adapted to the learning process. One of the methods that come from the use of technology in the learning especially language learning is Mobile Assisted Language Learning (MALL). MALL is a language learning process assisted with the use of mobile devices. Furthermore, MALL can be used as an alternative to solve the problems that have been described. Mobile learning can be used as a learning medium that can be easily accessed by students, because most students must have mobile devices. One of the learning media that comes from the implementation of MALL is in the form of an application. Various approaches may be employed while developing an android application. Kodular is one of the platforms that enable application development. From the background described above, the researchers is interested in developing an android-based application for learning tense using Kodular.

2. METHOD

This research used Research and Development (R&D) method. Research and Development is a method used to produce a certain product and to test its effectiveness (Sugiyono, 2018). In developing the product, the researchers followed a developmental procedures by Branch (2009) called ADDIE. Analysis, Design, Development, Implementation, and Evaluation are the five stages in ADDIE, which are arranged systematically and interconnected. Branch also stated that the ADDIE model is suitable and effective for the development of a learning product and research in learning. Here are the overview of each stage in ADDIE model used in this study.

2.1. Analysis

First, in the analysis stage the researchers conducted the students' need analysis. This stage aimed to collect the data regarding what is needed in developing the product. The need analysis was done by giving the questionnaire to the students. The questionnaire analyzed the gaps in the learning process, supporting facilities, students need of the tense material, and their preference in presenting the material. The questionnaire were distributed via Google Form.

2.2. Design

The researchers designing the product based on the result of the analysis stage. At this stage, the researchers designed: a) the material as the content of the product, b) the layout or appearance of the media, and c) the instrument used in the expert validation process and student trial.

2.3. Development

After designing the product, then the researcher began to developed the application using Kodular website. After the product successfully developed, the next stage in the development phase was to carry out the validation. The product that has been created will be tested for validity by media and content experts.

2.4. Implementation

In the implementation phase, the researcher implemented the product that has been developed in real conditions. The implementation was conducted to know students' responses towards the learning media during learning process. This stage is implemented at Vocational High School 10 Sarolangun. The participants was from grade X majoring in Multimedia consists 20 students.

2.5. Evaluation

The last stage in ADDIE model was to evaluated the product. The evaluation conducted by the researcher to determine the quality of product that have been developed. The evaluation was oriented towards the

validity and feasibility of the product developed through the validation of media experts and material experts. Further, the evaluation is carried out after the implementation stage of the trial test subject, which is used to determine student responses to the application that has been developed.

Data collection technique used in this research is questionnaire. The questionnaories were used to analyze students' need, product validity and analyze the students' response. First, need analysis questionnaire given to students in the analysis phase. This questionnaire was distributed to get the data related to the android usage, the use of media in learning activity, students' understanding of the tense material, and the need for android-based application. Then, questionnaire regarding to the product validity given in development stage which assess the quality and the purpose of the content, the instructional quality, the technical quality, and the interface design. Questionnaire used to analyzed the students' given at the end of implementation stage. This questionnaire was USE questionnaire with four aspects included 1) usefulness. 2) satisfaction, 3) ease of use, and 4) ease of learning (Lund, 2001). The questionnaire instruments was arranged by using Likert scale and it can be presented as follows.

Table 1
Likert Scale

Score	Criteria
5	Strongly agree
4	Agree
3	Neutral
2	Disagree
1	Strongly disagree

Data analysis used in this study is quantitative descriptive and qualitative descriptive. This quantitative descriptive analysis used to determine the feasibility of the media and student responses to the learning media being developed. Qualitative descriptive analysis in this study used to analyze the data in the form of qualitative. This qualitative data collection was obtained from the validators' suggestions. Data analysis was used to classify information from qualitative data in the form of responses, criticisms, and suggestions for improvement and revision of media development products in terms of material and media aspects. The data in form of quantitative analysed using formulas to calculate the percentage of each subject.

$$\text{Percentage Score (\%)}: \frac{Score\ data\ collection}{Ideal\ Score} \text{ x } 100\%$$

Ideal score can be found by multiplying the highest score, the number of respondents, and the number of questionnaire items. After getting the score, then it converted into a value from Arikunto (2009).

Table 2
Percentage Criteria

No.	Percentage Score	Criteria
1.	81% – 100%	Excellent
2.	61% - 80%	Good
3.	41% - 60%	Fair
4.	21% - 40%	Poor
5.	< 21%	Very Poor

3. RESULTS AND DISCUSSION

In this section, the researcher presents the result and provided further explanation in discussion section.

3.1. Results

The result of this research is in the form of an android application called **FunTense**. The Funtense application can be downloaded by this link: https://play.google.com/store/apps/details?id=io.kodular.indrinilam06.TENSEFUL1. This FunTense application has been developed through five stages of ADDIE Model, namely the analysis stage, the design stage, the development stage, the implementation stage, and the evaluation stage. The overview result of the development process can be seen as follows:

3.1.1. Analysis Stage

The result of students' need analysis indicated that the students of Vocational High School 10 Sarolangun found some gaps in the English teaching-learning activities. English teaching at SMK 10 Sarolangun was still done in the traditional method. However, 70% of class X Multimedia students believed that traditional methods of learning are still insufficient to meet their needs, particularly in learning tenses. The researcher also discovered a gap between the expectations and reality in this result. Students in vocational high schools were expected to master English in order to meet the criteria for graduates who were prepared to compete in the global market, but they did not receive adequate input in terms of learning English at school, resulting in a poor understanding of the language.

Further, in terms of facilities, all of the students use android smarthphone. Students were helped by regulations that allow gadgets to be brought into the school environment when they were in school. However, because the school no longer provides Wi-Fi, students must have their own internet connection. In developing the material, the analysis results showed that students needed to learn the basic tenses that they frequently learn and use. Students mentioned the present simple tense, past simple tense, future simple tense, and present continuous tense. The choice of these tenses is also based on an examination of the curriculum used at VHS 10 Sarolangun.

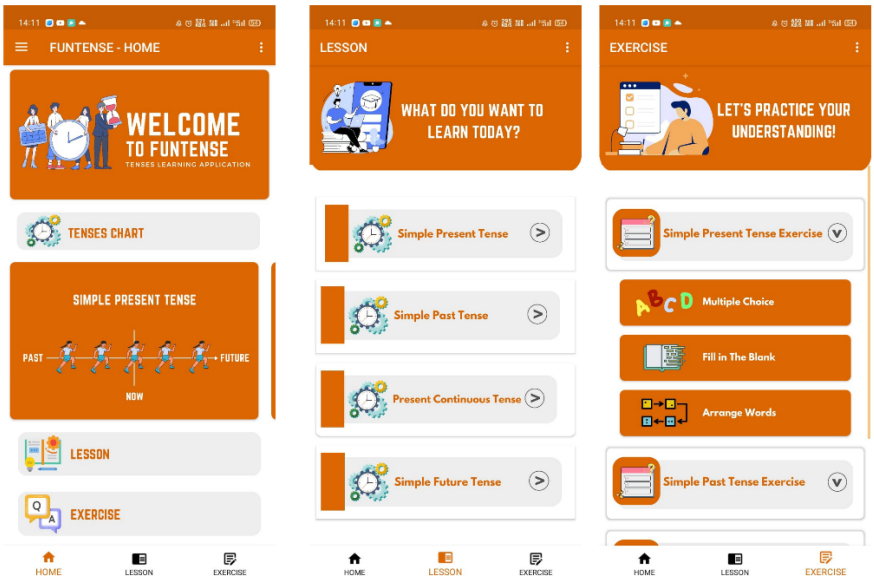
3.1.2. Design Stage

In the design stage, the materials were design based on the data from analysis stage. There are four tenses in the material: simple present tense, simple past tense, present continuous tense, and future tense. As stated in the analysis phase, the material was chosen based on the students' needs, preferences, and curriculum analysis. Furthermore, when presenting the material, the researcher focused on two main points. The first topic was "When do we use the tense?" and the second one is "How do we form the sentence?". Further, the researchers designed the exercise with the help of Wordwall. The exercises that can be done by the students was in form of game with three level, multiple choice, fill in the blank, and rearranged wors.

3.1.3. Development Stage

In the development stage, the product began to be developed using Kodular website. The products that have been developed using the Kodular website consist of Flash screen, Home menu, Lesson Menu and Exercise Menu.

Figure 1
Funtense Application Layout



After successfully developed, then the application was validated by media and content validators. The result of validation can be seen below:

Table 3
Validation Result

No.	Validator	Validity Result	Criteria
1.	Media Validator	78%	Good
2.	Content Validator	91%	Excellent

3.1.4. Implementation Stage

The next stage was implementation. At this stage, the learning media that has been developed, namely the FunTense application, was implemented to students. The implementation was carried out on a small scale. The students involved in the implementation activities were students of class X Multimedia with a total of 20 students. The implementation phase ended by distributing student response forms to find out students' opinions about the development that has been carried out.

3.1.5. Evaluation Stage

The last stage of development was the evaluation stage. Evaluation was carried out at each cycle of the ADDIE stages. The evaluation stage in this research was focused in the results of content expert validation, media expert validation, and student response questionnaires. The results of the validator then used as a reference for evaluating and revising the developed media. Furthermore, from the validation by the content validator and media validator, qualitative data was also obtained in the form of suggestions. There were three major revision from validators related with the name of application, improving the layout and change the background color, and changing the example to be more contextual.

At the evaluation stage, in addition to evaluating the feasibility of the media from the results of expert validation, another activity carried out was evaluating the results of the student response questionnaire. The details of the student response questionnaire are as follows:

Table 4
Students' Responses Result

No.	Aspects	Score Percentage
1.	Usefulness	93,5%
2.	Satisfaction	92%
3.	Ease of use	92,67%
4.	Ease of Learning	93,5%
	Total Percentage	**92,95 %**

Based on Table 2, it can be seen that the students' response was categorized as excellent. The results obtained from the percentage above showed that student responses to the FunTense application learning media received a excellent response from class X Multimedia students of VHS 10 Sarolangun.

3.2. Discussion

The final product of this research was in form of android application which can be used as learning media to help students improving their understanding toward tenses material. This is supported by the results of Klimova and Polakova's research (2020) which state that the use of android applications as learning media is effective. The result indocated that the FunTense application was valid based on media and content validation. The appropriate category has met the assessment indicators according to Arsyad (2015), namely good technical quality, good interface design, good content quality, good instructional quality and appropriate content relevance.

Furthermore, the overall results obtained from the student response questionnaire received 1952 points with a level percentage of 92.95% and were classified as very valid criteria. With the percentage obtained, the media developed received an excellent response from students and can be used as a tense learning medium. This is in line with the results of research from Lutfiansyah (2016) which found that using an application increased students' enthusiasm, confidence, and understanding of English material. The students also gave positive feedback toward the implementation of game in exercise section. The use of wordwall as the games-maker in learning are effective in improving students' grammar understanding (Sentani, et al., 2022).

4. CONCLUSIONS AND SUGGESTIONS

FunTense is an android-based application developed by making use of the Kodular Website available on the internet. This application can be developed easily by selecting, dragging, and dropping the available features on the website. The process of developing this application follows the five stages of the ADDIE model namely, Analysis, Design, Development, Implementation, and Evaluation. The use of this model makes FunTense application development more systematically structured. The development of FunTense is good according to media validator with 78% percentage while the content of FunTense categorized as excellent with the 91% score percentage from the content validator. Further, the FunTense application got an excellent response from the students. It can be concluded that FunTense application is suitable as a tenses learning media for grade X Multimedia students of VHS 10 Sarolangun.

Next, the researcher would like to propose some suggestion to future researcher or developer. This android-based application accommodates only the four English tenses (Simple Present tense, Past Tense, Present continuous Tense, and Future Tense) while the students actually need to understand the twelve English tenses. Therefore, it is suggested that further developmental research can accommodate more English tenses. The FunTense application can only be used if the user is connected to the internet, so it is recommended that in the future development can develop applications that can be accessed even if the user is offline. Lastly, the FunTense application is developed via the Kodular website only. Therefore, it is suggested that other researchers who are interested in developing an application can consider some other websites that provide facilities to develop an application that is suitable for the needs.

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