DEVELOPMENT OF ENGLISH LISTENING CONVERSATION LEARNING MEDIA THROUGH INTRODUCTION TO BATIK MOTIVES BASED ON MOBILE AUGMENTED REALITY

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ABSTRACT

The purpose of this research is to develop learning media for listening conversations in English through the introduction of mobile augmented reality-based batik motifs. This research is development research, using the ADDIE method (Analyze, Design, Develop, Implement, Evaluate). The subjects of this study were STMIK Widya Pratama students who had taken English courses. Retrieval of data in this study through observation, questionnaires, and interviews. The results of this study through the UAT (User Acceptance Test) test that the development of English learning through the introduction of augmented reality mobile-based batik motifs can be implemented in English language learning and can assist in explaining English language material. However, when viewed from the point of view of the learning material, the discussion of the material is only on the structure of the English sentence. For the next development, it is recommended to add to the enrichment of the discussion of other English language materials, besides that the next learning product is expected to pay attention to audio-visual content that does not overly confuse the learning device, this will affect the effectiveness of the learning process.

Keywords: *Learning; English Language; Batik Motif; Mobile Augmented Reality*

The education system implements a lot of English as Second Language (ESL) learning, mastery of English is very needed in the world of academics, research, and business (M. Elaish, Ghani, Shuib, & Al-Haiqi, 2019), this proves the importance of using English in international scope (Vedadi, Abdullah, & Cheok, 2019). In addition, the English learning environment greatly affects positive learning motivation (Hou, 2018), through learning mobile applications, it can increase motivation in independent learning skills (Chang, Chen, & Yang, 2018). Mastery of listening to the conversation is important in language learning, through listening to the conversation, the accuracy of understanding

terms in English can be maximized. Besides, in the language learning process, the use of learning applications can motivate independent learning.

The use of information and communication technology in language learning has been widely used, this has become a new approach to language learning (Beránková, Čechová, & Zerzánová, 2011), many educational institutions offer English language learning by utilizing online learning (Anggrawan, Yassi, Satria, Arafah, & Makka, 2019). The development of listening and speaking skills in English can be done through learning support with computers (Wang, 2020). The use of applications provides an increased motivation for interest in independent learning in English vocabulary learning (Hu, Feng, Hsu, & Liu, 2019). Information and communication technology is a new approach to English learning, through information technology in visual and audio media that can improve students' experience in English learning. Visual and audio media help students to remember what they saw and heard. In addition, through information technology students can learn inside and outside the classroom.

Research related to the development of learning media with augmented reality technology, states that the development of augmented reality mobile applications as a learning medium for grammar-based on real-life environments can enhance interactive experiences in exploring grammatical relationships (Draxler, Labrie, Schmidt, & Chuang, 2020). The use of mobile-based augmented reality applications can help students improve basic skills in listening and speaking in English (Liu, Liu, Yang, Guo, & Cai, 2018). The process of English learning at the college level is still dominated by classroom teachers, and teaching and learning times are less effective (Jiang, Li, Guo, & chen, 2019). The use of language learning media certainly requires interesting content, interactive and can provide examples in everyday lives. It is intended to increase student motivation in the process of English learning. One of the learning contents that can present interesting and interactive learning can take advantage of mobile augmented reality technology, by this technology the media for learning is packaged in real-time interactive via mobile devices in real life. This can enhance the learning experience of students in a mixed environment.

The problems that arise are based on the results of interviews with the lecturer who teaches English courses. He stated that English learning has used video and audio media in lessons, but there are still students who do not understand the material to listen to conversations. Meanwhile, based on the results of the questionnaire for students who have taken English courses, from 44 respondents, 43.2% of the students wrote that sometimes the lecturers used interesting learning media. There are 45.5% of foreign students, sometimes lecturers are examples according to their daily activities, there are 56.8% of students who state that students better understand the material if the learning media are given examples in everyday life. There must be 43.2% of students who state that students can remember the material more by listening to the material.

The novelty in this study is that the presentation of learning content is not only presented visually through augmented reality technology but also to support the discussion of listening conversation learning content is presented in audio form. Also, the packaging of learning media is attractive, interactive, supported by providing examples in everyday life through the introduction of batik motifs.

METHOD

This research is a research on the English learning development through the batik motif introduction with mobile augmented reality based. While the object of this research is STMK Widya Pratama students who take English courses.

In addition, the research method refers to the ADDIE learning development method. The ADDIE method is a learning development model (Branch, 2009). The

ADDIE method has the following stages (Branch, 2009):

1. *Analyze,* this stage is the pre-design stage, thinking about the concept of media and teaching materials that will be developed according to the analysis of user needs. This is related to the English language learning material, which is a sentence structure that will be presented both in visual and audio by utilizing mobile augmented reality technology. The goal is that students, in this case the first semester of STMIK Widya Pratama Pekalongan students, can more understand the structure of a sentence in writing and pronunciation than before.
2. *Design*, at this stage the design of the learning product concept will be carried out. In this case regarding the design of learning flow documents, learning interfaces, learning narratives through mobile augmented reality technology.
3. *Develop*, it is at this stage that the design will be implemented into a learning product tool in the form of media and teaching materials, which includes the collection of materials that will later be used in developing English learning products by utilizing mobile augmented reality technology.
4. *Implement,* at this stage the learning products will be tested on students, with the aim of knowing the learning product feedback to students. At this stage, a questionnaire will be distributed to determine the level of student utilization of English learning material through using learning products.
5. *Evaluate*, at this stage, it will be reviewed whether the learning products are in accordance with the beginning objectives or concepts. At this stage there will also be plans for developing the next learning product.

The research steps described above can be seen again in the following figure:

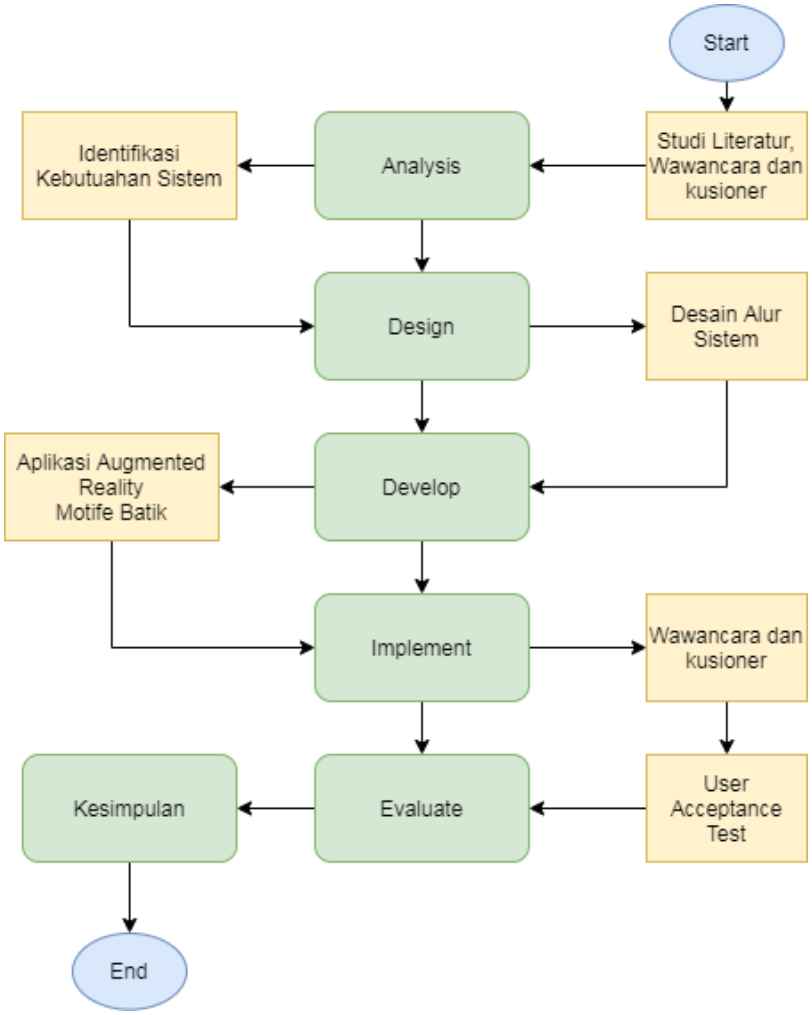

Figure 1. Research Flowchart

In the research flow figure, if at each stage there are several things that are not in accordance with the planning, the research process can return to the previous stage.

FINDINGS

Analyze stage

This stage determines the identification of user needs through interviews with the lecturer who teaches English courses. The results of identifying user needs can be used as input for system requirements analysis, system requirements analysis of English learning products as follows.

1. Learning products can display 3D batik objects through English sentence structure material both in augmented reality and interactive 3D Modeling.
2. The sentence structure material in English is presented in the form of the batik motif introduction.
3. The system can provide audio narration about the structure of words in English.
4. The system can display sentence structure material in English.

Furthermore, at this stage a description of the learning product developed will be determined.

Table 1. Concept Description

Concept	Concept Description
Title	Learning AR English Language

Audiens	Lecturers and Students
Duration	Unlimited
Image	The * .Png format made with Adobe Photoshop is used as a button and background application
Audio	The *. Mp3 format recorded and edited through Adobe Audition is used as a narrative audio learning
3D Model	The * .bend format was created using blender software to visualize the batik motif introduction.
Interactive	The use of navigation using augmented reality buttons and markers using openspace3D

Design Stage

The design of English learning products is determined based on the previous stage, the resulting design documents are the design of the learning flow and the navigation of the learning products, the learning flow and the navigation description of the learning products as follows

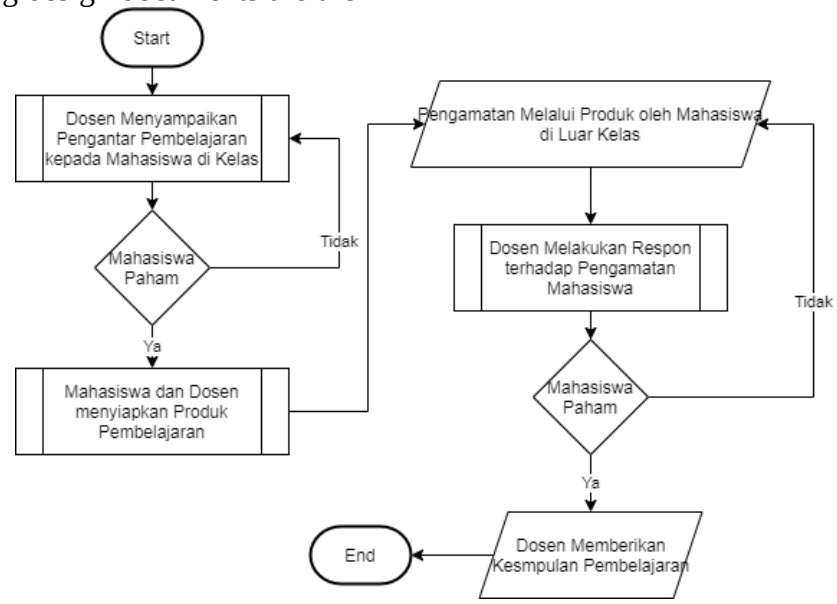

Figure 2. Learning Flow Diagram

Table 2. Materials

Component	Source
Button Image	Making with Adobe Photoshop
Background Image	
Texture Image	
3D Model	Making with Blender 3D
Sound	Recording and Editing by Adobe Audition
Text	*Font Type Montserrat*

Develop Stage

The develop stage is a combination of all the materials used in making learning products. Materials such as the materials, buttons, 3D models, sounds and images have been created, then collected and combined into a learning product with mobile augmented reality based using the Openspace3D development platform. The marker used in augmented reality applications uses a sequare marker with id 101 provided by the developer platform. The use of a sequare marker is intended so that the 3D model displayed through the merker

can be displayed quickly, besides that the learning products developed require additional camera devices to run augmented reality markers tracking and speckers to sound sentence structures in English.

At this stage, the testing will also be carried out in terms of application development using graphical user interface (GUI) testing, it is intended that the functions of the interface components in learning products can run properly. The components tested include buttons testing for navigation application, gesture testing to control 3D models in interactive 3D mode and marker testing to control 3D models in augmented reality mode.

Implement Stage

English learning products using mobile augmented reality based are run through an Android smartphone device. This learning product has three core pages, namely,

1. Material, on this page discusses the English sentence structure material. The material on this page is presented in a sequence linear, meaning that the material is presented in sequence from the first page to the last page.
2. 3D Interactive, on this page displays interactive 3d objects with batik motif controlled through screen gestures to zoom in / out and pan left / right. In addition, on this page an explanation of the batik motif is presented in both Indonesian and English, both in visual and audio form.

AR Camera, on this page presents a batik motif introduction in the form of a mobile augmented reality, 3d model control can be done through interactive markers in a real environment. Besides that, the control of the batik motif 3D model can be done through screen gestures to zoom in / out and pan left / right.

Figure 2. AR Camera Display Results

After the learning product of English sentence structure by utilizing mobile augmented reality has been developed, then the learning product will be implemented to students and lecturers through the User Acceptance Test (UAT) user test.

Evaluate stage

Based on the results of the UAT implementation and testing of users, if reviewed from the point of view of the use of English learning products, mostly the student stated that through the batik motif introduction using mobile augmented reality technology made the English learning of sentence structure was more interesting. In addition, English learning of sentence structure can be done both inside and outside the classroom. Meanwhile, if reviewed from the accuracy of the function of learning products, mostly the student stated that learning products using mobile augmented reality based were interesting and easy to use.

Meanwhile, based on the results of interviews with the lecturer who coordinated the English course, it was stated that the use of audio visual real-time to introduce batik motif by utilizing mobile augmented reality technology can help in explaining some of the English materials. Then the learning

products are easy to apply and can be implemented inside and outside the classroom.

Testing from the user side is seen from two assessments, namely, based on the usefulness of the use of English learning products and based on the functional accuracy of English learning products. The number of respondents involved in UAT was 150 respondents, namely the first semester students who were still taking English courses

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Table 3. User Response to the Use of Learning Products

No	Question	SS	S	TS
1.	By the leARn Batik application, does the English learning become more varied?	13,3	82,7	4,0
2.	By the leARn Batik application, does the English learning become more interesting?	19,3	75,3	5,3
3.	By the leARn Batik application, is there any example of the English learning using Batik Introduction?	12,0	84,0	4,0
4.	By the leARn Batik application, has the English learning used information technology?	30,0	66,7	3,3
5.	By the leARn Batik application, Can the English learning be done inside or outside the classroom?	24,0	71,3	4,7
6.	Is the display of the leARn Batik application attractive?	12,0	72,0	16,0

Table 4. User Response to the Accuracy of Learning Product Functions

No	Question	SS	S	TS
1.	Are the leARn Batik Application buttons easy to use?	6,0	77,3	16,7
2.	Is 3D of the leARn Batik application visible?	11,3	79,3	9,3
3.	Is the 3D Batik Motif Texture of the leARn Batik Application visible?	9,3	85,3	5,3
4.	Is the Gesture (Scale / Rotate) 3D Model leARn Batik Application easy to use?	9,3	80,7	10,0
5.	Is the Sound leARn Batik Application easy to listen and understand?	9,3	82,7	8,0
6.	Are the materials in the leARn Batik application easy to understand?	12,7	81,3	6,0
7.	Is the leARn Batik application AR Camera be able to capture Material Marker?	8,0	85,3	6,7
8.	Is the material Marker of the leARn Batik Application be able to show 3D Batik Motif Objects clearly?	8,7	81,3	10,0
9.	Is the display of the leARn Batik application attractive?	10,0	80,0	10,0

The UAT test results showed that from the problems that raised, that the use of learning products can help in the learning process of English both inside and outside the classroom. In addition, based on UAT testing, the learning products are attractive and easy to use.

DISCUSSION

The discussion of the results of this study was carried out through the results of the evaluation of users with UAT testing of 150 respondents, namely semester 1 who were still following English courses. UAT testing is carried out by taking two responses, namely the user response to the usefulness of the learning product and the user response to the accuracy of the learning product function.

When viewed from the user's response to the benefits of learning products,

there is a question response to the benefits of learning products. The response to the question of whether learning English became more varied, there were 13.3% of students who strongly agreed, 82.7% of students agreed and 4.0% of students disagreed. Then the response to the question of whether learning English became more interesting, there were 19.3% of students strongly agree, 75.3% students agree and 5.3% students disagree. While the response to the question of whether English learning can be done inside or outside the classroom, 24.0% of students strongly agree, 71.3% of students agree and 4.7% of students disagree. Then 84.0% of students stated that there were examples of learning English through the introduction of batik.

When viewed from the user's response to the accuracy of learning product functions. This response tests whether the functions of the learning product, such as buttons, 3D objects, texture objects, object gestures, audio sound, object markers are running well according to their function.

The question is whether the learn batik application buttons are easy to use, 6.0% of students strongly agree, 77.3% students agree and 16.7 disagree. On the mobile platform, the buttons presented in the application are made simple and easy to apply.

The question is whether the 3D learn batik application is clear, 11.3% of students strongly agree, 79.3% of students agree and 9.3% of students disagree. The 3D model in the application is in the form of a batik cloth model that can be seen from all directions. This makes it easier for users to observe 3D objects.

The question is whether the texture of the 3d batik motif of the learn batik application is clear, 9.3% of students strongly agree, 85.3% of students agree and 5.3% disagree. The texture on 3D objects is made dynamic sequential, according to the batik motif chosen by the user.

The question is whether the gesture (scale / rotate) 3d model of the learn batik application is easy to use, 9.3% of students strongly agree, 80.7% of students agree and 10.0% of students disagree. 3D models can be viewed from any direction using gesture controls.

The question is whether the sound of the learn batik application is easy to listen to and understand, 9.3% of students strongly agree, 82.7% of students agree and 8.0% of students disagree. A sound will be emitted if the user changes the batik motif, both in English and in Indonesian. User guides to listen to English vocabulary in the explanation of batik motifs.

The question is whether the AR camera of the learn batik application can capture material markers, 8.0% of students strongly agree, 85.3% of students agree and 6.7% of students disagree. Marker is used as a marker for 3D objects to be displayed in mixed reality. This makes it easier for users to view 3D objects.

The question is whether the learn batik application material marker can bring out the 3d object of the batik motif, 8.7% of students strongly agree, 81.3% of students agree and 10.0% of students disagree.

From the results of the response that has been described, learning products can be used in the English learning process both inside and outside the classroom. Also, the functions in the learning product run according to their function.

CONCLUSION

Based on the stages that have been carried out, it can be concluded that the development of English learning through the introduction of mobile augmented reality-based batik motifs can be implemented in English listening conversation learning. However, when viewed from the point of view of the learning material, examples of discussion of the material are only on the introduction of batik motifs in the English sentence structure. For the next development, it is suggested to add other examples of discussion of English language material. Also, the next learning product is expected to pay attention to audiovisual content that does not overly confuse the learning device, this

will affect the effectiveness of the learning process.

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