Interactive English Teaching and Learning Based on Mobile Application

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Abstract—**English is a universal language used worldwide as the primary language. Learning English can open more opportunities for someone to get involved with the international world. In Indonesia, English is not the primary language, but English still occupies an important position in daily life. For some students, English is not something easy to learn, and they constantly face difficulties such as lack of self-confidence, hard to understand grammar, and hard memorize English vocabulary. The author developed an Android application to help high school students to learn English. This application contains theory for grammar, English vocabulary to memorize with a track record, and a chatbot to increase self-confidence to speak in English. Interactive English Learning Application has user's status to track how far users have already learned English and helped with quizzes. This application was developed using flutter as its front-end, MySQL as its database, and PHP as the backend.**

Keywords—English, Language, Android, Application, Status

I. INTRODUCTION

English is a universal language most countries use as the primary language. Besides that, English is an international language that is very important to learn. Having the ability to speak English can open more ample opportunities for someone to get involved with the international world. Even some British colonial countries used English as their second language that must be mastered. Even though English is a foreign language in Indonesia, English still occupies an important position in daily life. Therefore, necessary for the public, elementary students until senior high school students to learn English.

For some students, English is something that is not easy to learn. Because there are always difficulties faced by students who are learning English, like a lack of self-confidence in learning English which results in the low ability of students to communicate, if we want to be fluent in English, it must apply more often in daily life.

The next difficulty that is often faced by students who are learning English is studying grammar. Because when studying grammar, there are so many rules and sentence structure patterns that must be remembered so the interlocutor can receive every sentence spoken well.

Next, students face difficulty because they don't have friends to practice their English. Communicating in English is vital because learning to communicate using English can improve basic aspects such as vocabulary.

Leveraging mobile technology based on Android, which is currently increasing and has become the most operating system used in Indonesia, can be used to develop English learning media applications that can help students in studying English as interactive by providing various features according to student needs, such as vocabulary group, grammar, and many more. The authors developed an interactive English learning-based-on android application that helps students learn English.

II. RESEARCH METHODOLOGY

A. Data Collection

Data collection is a research stage where the researcher applies scientific methods and techniques to collect data systematically.

- Interview

  The author directly interviewed students, exceptionally high school students. "The interview is a meeting of two people or more to change information or an idea with the question and answer so that it can be reduced to a conclusion or meaning in a particular topic" [1]. In the interview results, students faced three main difficulties when studying English, grammar, vocabulary, and lack of self-confidence.

- Observation

  "Observation is one data collection that uses direct or indirect observation" [2]. The author did observation by observing information and data needed in this research. The result of this observation is that grammar is one of important things and the first step to fluency in English.

- Literature Study

  "A literature study is a series activity related to collecting library data, reading, taking notes, and processing research materials" [3]. The literature study was done by reading and learning about the topic discussed in this research. The author found five works of literature related to this research from the literature study.

B. Literature Review

The first research entitled, "Chatbot Pembelajaran Bahasa Inggris Berbasis Media Sosial" conducted by Sarosa et al [4]. This research aims to use social media to study English, where English training is carried out online (chat) from a chatbot application, so there are 24 hours for students to learn English. Result from this research chatbot that was implemented to 60 three-year diploma students department of English, Politeknik Negeri Malang obtained 98% stated chatbot helps students learnt English, 90% stated the material presented is quite exciting, and 72% stated that chatbot application did not burden the performance of their cellphones.

The second research by Afrianto et al. entitled "Aplikasi Chatbot Speak English Media Pembelajaran Bahasa Inggris Berbasis Android" [5]. This research aims to develop a chatbot application as an alternative to learning English. In conclusion, chatbot technology can become a solution for interactive learning media, one of which is a temporary English conversation practice media using two conversation methods.

The third research entitled, "Aplikasi Media Pembelajaran Tenses Bahasa Inggris Berbasis Android" [6], have some exciting features, such as a page containing tenses that can be learnt for students, a page contains quizzes, and a page containing score from the quiz that has been done. This research aims to make it easier for students to understand tenses and to make it easier to remember tense's structure and pattern, and find student abilities.

The fourth research, "Penerapan Aplikasi Pembelajaran Bahasa Inggris Dasar Berbasis Multimedia" [7], uses multimedia based on an Android application to practice students' vocabulary. This research aims to see students' vocabulary ability by providing vocabulary training using multimedia as learning media.

The fifth research entitled, "Analisa dan Perancangan Aplikasi Pembelajaran Bahasa Inggris Dasar Berbasis Android" [8], developed an android application for studying English. The purpose of this research is to see how students can learn English anywhere without the limitation of time using an android application.

In the last research entitled, "Use of Smartphone Applications In English Language Learning – A Challenge for Foreign Language Education" [9], the authors state that smartphone technology is a salient feature in learning English because students can study anywhere, anytime. It can help low-achieving students to reach their goals. And using smartphone technologies to learn English can increase students' confidence.

III. Result And Discussion

A. Application Design

The author uses flutter to design and develop the application. Flutter is Software Development Kit (SDK) formed in 2017 by Google. Using flutter can help the developer to create a mobile cross-platform application. In its development, flutter brings a hot reload that directly compiles codes and shows the results [10]. The following is the input design for the application
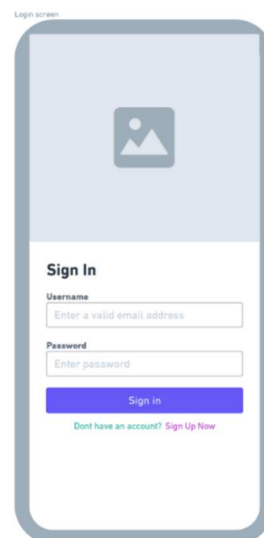
- Login Design

Fig. 1. Application Login Design

The application saves users' data, so users don't need to learn first again. Before users use the application completely, they must log in first into the application. On the login page, the application asked for a username, the user's email that was registered before, and a password.
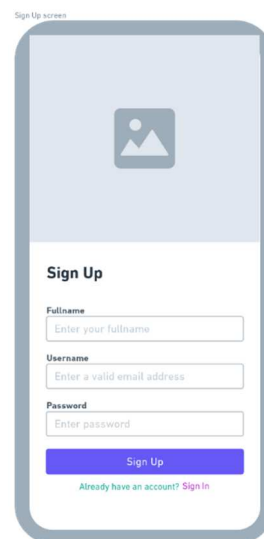
- Sign Up Design

Fig. 2. Application Sign Up Design

For the users to use their account, they must register first. There are only three fields for users to fulfill, username, user's full name, and password for their account.

- Answer Input Design

Fig. 3.   Application Input Design

In this application, there is a quiz feature, where there is a field to input an answer from the user.

B. Interface Design

The author uses Figma to create an application interface design. Figma is a tool used to create designs and prototypes from developed applications. The prototype that creates is based on cloud and digital projects. Figma can be used to create the user interface and user experience from an application that is developed. One of Figma's best features is collaborating with other team members [11]. The following is the interface design for the application
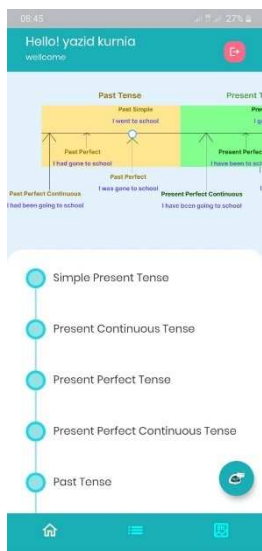
- Home Page

Fig. 4.   Application Home Page

The home page is the main page that shows the user's name, material in the application, and other features.

- Theory Page

Fig. 5.   Application Theory Page

The application shows the theory the user needs to learn on this page. The theory that shows is a fundamental theory to learning English.
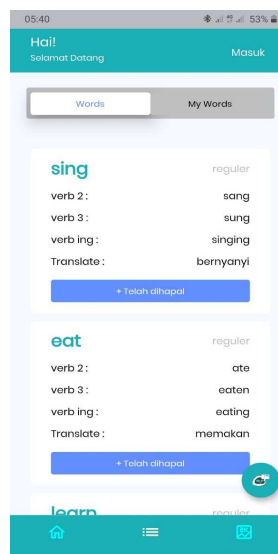
- Vocabulary Page

Fig. 6.   Application Vocabulary Page

This page application provides a vocabulary that users can memorize, and there is a button to check whether vocabulary has already been memorized or not yet.
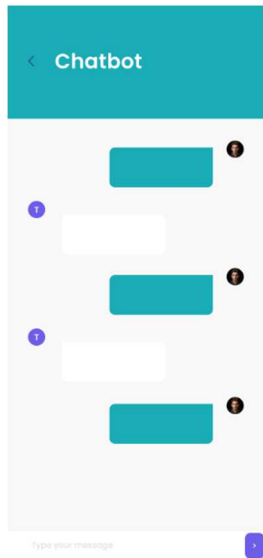
- Chatbot Page

Fig. 7.   Application Chatbot Page

On this page, the application provides a chat to practice English conversation. The author hopes users can grow their confidence when using the chatbot.

C. Application Testing

The application test uses the black box testing method. There are scenarios to test the application, and it can be seen from the following

TABLE I.   . APPLICATION BLACK BOX TESTING

Scenario	Test	Function	Expected Result	Result
Theory Menu	Choose Theory Menu	Shows Theory	Theory Appears on The Page	Succeed
Vocab Menu	Choose Vocab Menu	Shows Vocab	Vocab Appears on The Page	Succeed
Chatbot Menu	Choose Chatbot Menu	Shows Chatbot	Chatbot Appears on The Page	Succeed

The black box testing indicates that the interactive English learning application is ready for students. After black box testing, the author implements this application to teach high school students English. As many as 50 high school students are using this application to learn English. The author used fifty high school students to implement this system as students who don't understand grammar, lack confidence, and have difficulty memorizing English vocabulary.

TABLE II.   . APPLICATION IMPLEMENTATION

No.	Questions	Respondents			
		Very Good	Good	Not Good	Bad
1	Are the output and input displays easy to understand	26	24	0	0
2	Is theory from application easy to understand	40	8	2	0
3	Is vocabulary from the application easy to memorize	27	23	0	0
4	Is grammar theory from this application easy to learn and understand	26	24	0	0
5	Is chatbot from this application can increase self-confidence when speaking in English	27	20	3	0
Total		146	99	5	0

The result from system implementation indicates that 89.1% of high school students strongly agreed to use interactive English learning applications because they can help them to learn English from basic.

The application helps students to learn English. Because the application can show how far students have studied English, the students can measure themselves. The application's content is adapted for students, incredibly high school students. This application's goal is to make students able to learn and understand English and have the confidence to talk in English. To achieve that goal, the application focuses on essential English, not only in theory but also practically. The advantages of this application are that students can use the chatbot to upgrade their English skills based on the basic skills they learned before. Students can understand the delivery of grammar from the application because it explains in detail using language that students can understand, and they can repeat it anytime, anywhere.

There is some difference between the application that author developed with existing applications. This application focuses on English learning for high school students to understand the basics. They are using a chatbot to practice and upgrade their skill. The grammar is presented in easy-to-understand language, and top of it all this application is free, especially for students.

IV. CONCLUSION

Research "Interactive English Learning Application" can be concluded as follows:

- Interactive English Learning applications can be used as learning media for high school students.

- As many as 89.1% of high school students are helped in learning English.

- As many as 88.6% of high school students are helped in memorizing vocabulary.

- As many as 88% of high school students are helped in learning and understanding grammar.

- As many as 87% of high school students are helped increase their self-confidence to speak English.

- Using interactive English learning applications can detect students' progress.

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