DEVELOPMENT OF "MAHIR BERBAHASA" LEARNING APPLICATIONS FOR BIPA STUDENTS IKIP BUDI UTOMO MALANG

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ABSTRACT

This research is intended to develop a web-based learning application "Mahir Berbahasa" to support the learning process of BIPA students at IKIP Budi Utomo. The software used in the development of this application is the CodeIgniter and Bootstrap Framework. It is hoped that this application will become a student learning medium that can make it easier for foreign students to continue studying wherever they are. This type of research is R&D development research. The development model used is the development of Borg and Gall. The results of this research development product in the form of "Mahir Berbahasa" learning applications have been tested and have received good ratings from users and validators. The assessment includes aspects of visual appearance, aspects of media relevance, aspects of material organization, aspects of software engineering, aspects of effects for learning strategies, and aspects of language. From a value range of 1-5, the user gives a mean value of 4.72, while the validator gives a value of 4.52. Based on this assessment, this learning application is in the category of feasible to use.

Keywords: Learning application, Mahir Berbahasa, BIPA, CodeIgniter and Bootstrap Framework

INTRODUCTION

The BIPA (Indonesian Language for Foreign Speakers) program is an Indonesian language teaching program that has started to develop rapidly recently. This is due to the increasing interest of foreigners to learn Indonesian, be it for political, commercial, socio-cultural, and tourism purposes in Indonesia. Currently, Indonesian has been taught in 46 countries with 130 BIPA program organizers (Adryansyah, 2012). Referring to the program objectives, BIPA learning is basically presented as an introduction to Indonesian language and culture to foreign learners. Even so, in terms of language learning, of course the aim of this learning is that learners can develop language skills and have good language skills, so that their understanding and mastery of Indonesian as the target language will be better. Likewise, the learner's ability with regard to mastery of vocabulary and grammar applied in learning is also a target for achieving the language master.

The rapid development of technology and information has had a huge impact on education, including in the BIPA learning process. The development of information technology has had an effect on changing patterns, methods and plans regarding the need for BIPA learning media. The role of learning media has a big impact on BIPA students in mastering the target language.

IKIP Budi Utomo Malang is one of the private campuses in Malang City which is trusted as one of the study destinations for foreign students. The teaching and learning process carried out on this campus has been very good, as evidenced by the increasing number of foreign student enthusiasts from year to year. IKIP Budi Utomo, who received high trust from prospective foreign students, continues to improve to improve the quality of their learning. One program that is quite ambitious but measurable and can be done is the launch of the Paperless learning program, where all learning processes are carried out online using a smart phone. This

program requires lecturers to be technology literate and strive to make online-based learning media as attractive and effective as possible.

Based on the explanation above, this research is intended to develop an Android-based "Mahir Berbahasa" learning application to support the learning process of BIPA students at IKIP Budi Utomo. The software used in the development of this application is the CodeIgniter and Bootstrap Framework. It is hoped that this application will become a student learning medium that can make it easier for foreign students to continue studying wherever they are.

LITERATURE REVIEW

BIPA (Indonesian for Foreign Speakers)

BIPA (Indonesian for Foreign Speakers) is a term for Indonesian language learning programs specifically for foreign citizens. The BIPA program has become popular and is increasingly in demand since the opening of free trade. In Indonesia, the BIPA program has been held in almost all well-known universities, both public and private. Based on data recorded by the Ministry of National Education, since the 1990s there have been 219 universities or institutions in 40 countries that have implemented BIPA learning programs. The countries listed as providers of BIPA learning are Australia, Austria, Canada, the Netherlands, Poland, Czechoslovakia, Denmark, France, Germany, Italy, Russia, New Zealand, Norway, Sweden, Switzerland, England, the Vatican, America, Suriname, India, Japan, China, Malaysia, Papua New Guinea, Saudi Arabia, Singapore, South Korea, the Philippines, Vietnam, Thailand and Egypt (Kusmiatun, 2016).

The vision of BIPA is to empower teachers and learners through continuous, structured, and systematic teaching in professional development. In addition, BIPA is also a strengthening of national identity. Language denotes the nation. Indonesian is a symbol of the country's identity. BIPA is a way to introduce and strengthen the national identity, namely Indonesian. Another vision is BIPA to support the teaching of Indonesian language and culture globally. In BIPA teaching, culture cannot be separated. Both language and culture are closely related and mutually supportive as a teaching program (Widianto and Zulaiha, 2016).

Learning Models and Media

According to the Ministry of National Education (2003) the term media comes from Latin which is the plural form of "medium" which literally means an intermediary or an introduction. Its general meaning is anything that can transmit information from an information source to the recipient of the information. The teaching and learning process is basically a communication process, so the media used in learning is called learning media. Learning media is part of learning resources which is a combination of software (learning materials) and hardware (learning tools).

Learning media is a "software" in the form of messages or educational information that is presented using a device (Hardware) so that the message / information can reach students. Here it is clear that media is different from equipment but both are elements that are interrelated with each other in an effort to convey educational messages / information to students. Thus, it can be concluded that (a) media is a container of messages which the source or channel wants to be forwarded to the target or recipient of the message, and (b) that the material to be conveyed is a learning message, and that the goal to be achieved is the learning process.

CodeIgniter and Bootstrap Framework

CodeIgniter is a framework developed in the PHP programming language. Code Igniter is Open-Source which is widely used by developers in developing dynamic websites (Asidhiq and Hartanto, 2013). The Code Igniter follows the MVC code pattern, so you can divide the code into three parts which are given below:

- Model : All Database related calls will be defined here, such as Data Retrieval, Insert, Delete and Update Data.
- View : As the name implies, View is just a view commonly called HTML. All data related to the View (html) will be specified here.
- Controller : Is a bridge between model and view. When you search for something in a web browser. It will go directly to the controller and the controller uses Model and view to display the appropriate results.

CodeIgniter was first developed by Rick Ellis in 2006 with a burning fire logo. The logo means that the code igniter quickly "ignites" the enthusiasm of web developers in building fast and dynamic websites.

Bootstrap is a very popular CSS framework, supported by many articles, tutorials and plugins and extensions from third parties, creating themes and so on. This is the reason many people choose and use Bootstrap. In addition, Bootstrap also supports various display platforms and web browsers compared to other responsive CSS frameworks so that bootstrap is widely used by web designers and developers (Christian et al, 2018).

It was created and developed by Jacob Thornton and Mark Otto who are on Twitter for a working tool that can encourage consistency in their internal tools. By using bootstrap, of course, a developer can make it easier and faster to create a front end on a website itself.

Previous Research

Azizah et al. (2009) stated that the BIPA learning program CLS Faculty of Letters, State University of Malang in 2012 has specifications that focus on the formation of oral communication skills. In particular, the implementation of the 2012 CLS BIPA learning program includes three aspects, namely planning, implementation, and problems. The aspects of planning and implementing learning activities pay attention to the principles of a communicative perspective.

Sudana et al. (2017) developed 62 drafts of basic level BIPA instructional video media. The development of the videos refers to the contents of the BIPA Textbook at the basic level of Undiksha, with the stages in the first year being 1) the analysis stage, 2) the design stage, 3) the develop stage.

Putri and Yuniawan (2017) developed a pictorial dictionary with the insight of Indonesian love based on an Android application as a learning medium for foreign speaker students. The characteristics of the dictionary needed are a dictionary that contains vocabulary, pictures, pronunciation examples, practice questions and is equipped with a content of insight into Indonesian love.

RESEARCH METHOD

Development Procedure

In this research, the research model was adapted from the ten research and development procedures of Borg and Gall (1983). There are six procedures applied in the research. The following describes the research and development steps. (1). Conduct a needs analysis through preliminary research activities which include interviews with BIPA IKIP Budi Utomo students and the lecturers who teach them, and observations. (2). Planning in the form of product determination in the form of a learning application "Mahir Berbahasas" developed with the main framework CodeIgniter and Bootstrap and participants, which come from three elements, namely students, lecturers, and experts (validators). (3). The product that will be developed is a learning media in the form of a "Mahir Berbahasa" learning application that can help BIPA students master Indonesian more easily. (4). Expert validation is in the form of an expert / practitioner's assessment of the "Mahir Berbahasa" learning application including format, language, illustrations and content. (5). Packaging is the final stage. (6). Implementing the product to the real target (try out).

Research Instrument

In this study, several instruments were used to achieve research success. For needs analysis, this study used a questionnaire. Observation sheet for the product trial observation process. Meanwhile, the assessment rubric is used to help the expert team provide assessments, suggestions and input on the products being developed.

Data Analysis

At this stage, the data that has been recorded through a questionnaire, observation and assessment rubric will then be analyzed qualitatively. The results of the product trial will be analyzed using statistics, namely measuring the effectiveness of the product, using seven aspects as a parameter of assessment, namely: visual appearance aspects, media relevance aspects, material organizing aspects, software engineering aspects, effects aspects for learning strategies, aspects of language, and aspects of evaluation.

RESULTS AND DISCUSSION

Product Development

The stage of making media is the realization stage of designing flowcharts and storyboards, at this stage the learning media is made using Visual Video Code software using the CodeIgniter framework that uses the PHP programming language. Meanwhile, the view takes from Bootstrap.

The application developed is a web-based learning application, therefore its creation is also almost the same as web development in general. There are several software that need to be prepared to start designing. First XAMPP, is free software, which is able to replace the role of web hosting by saving website files into local hosting (localhost) so that they can be called via a browser. This software can be downloaded for free, because it is open source.
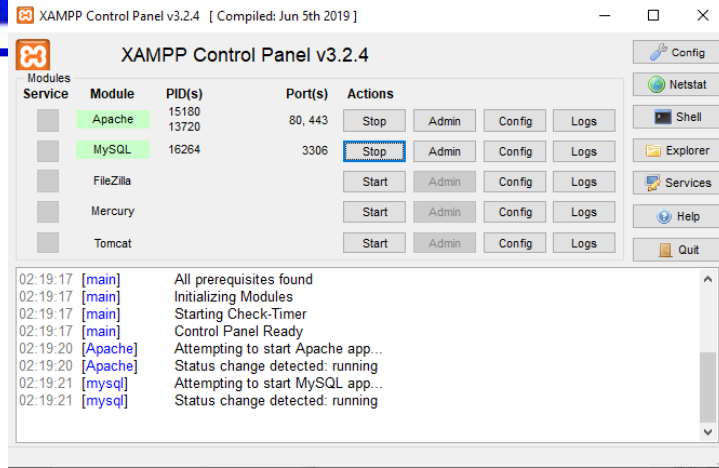
Figure 1. Display of XAMPP software

The second is the phpMyAdmin software, which is a web-based open-source application used to manage MySQL databases and / or the most popular tool for managing MySQL databases.
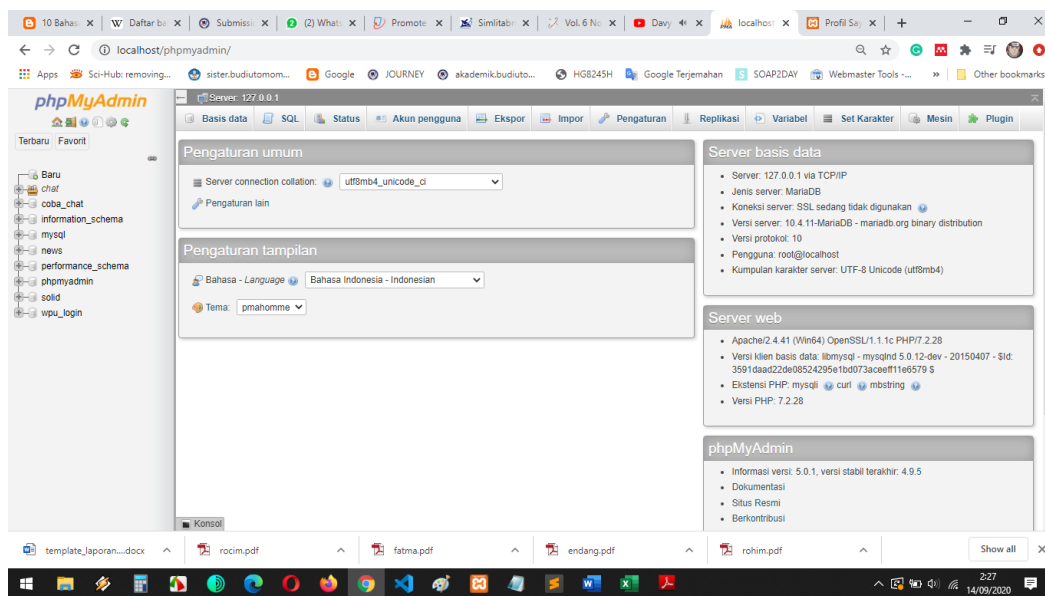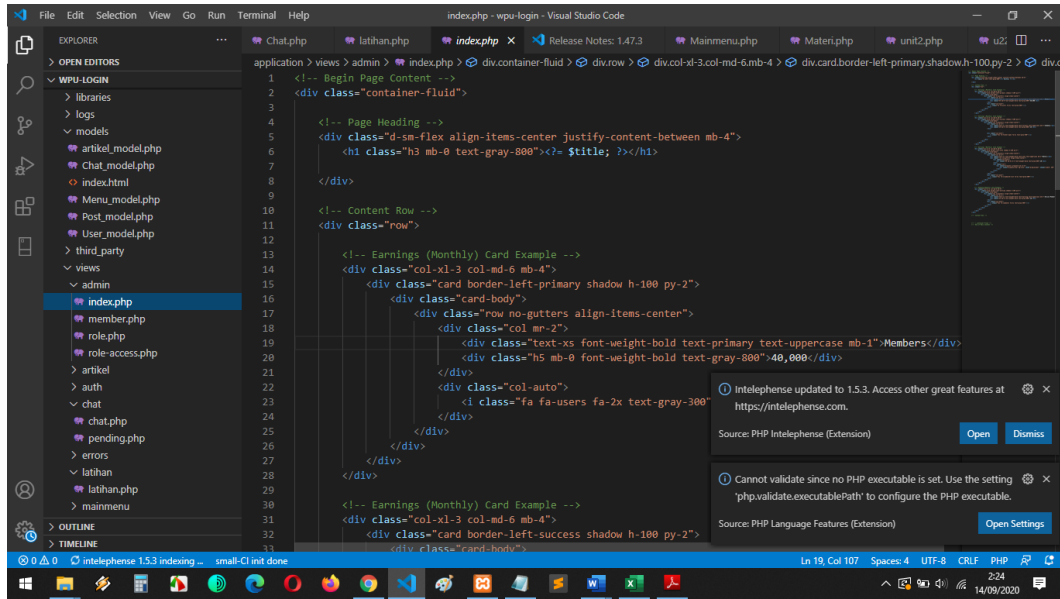

**Figure 2. The phpMyAdmin software display**

The next tool used in the development of this application is Visual Video Code, which is a free source code editor created by Microsoft for Windows, Linux, and macOS. Through this tool the php language is compiled and designed into an application.

Figure 3. Visual Video Code software display

Furthermore, the CodeIgniter framework, namely, an open-source web application network used to build dynamic php applications. This tool is specially designed to make it easier for web developers to develop web-based applications. CodeIgniter in this study is used as a framework in developing Proficient Language applications using the Bootstrap 4 framework as a display framework.

Steps for Making Applications using Software Framework CodeIgniter and Bootstrap: The first step is to download all the tools and components needed: CodeIgniter, Bootstrap, XAMPP, phpMyAdmin, and Visual Video Code. After all the required software has been downloaded and installed, the first step is to install CodeIgniter in XAMPP by extracting the CodeIgniter file that has been downloaded into the Root htdocs in XAMPP, as shown below.
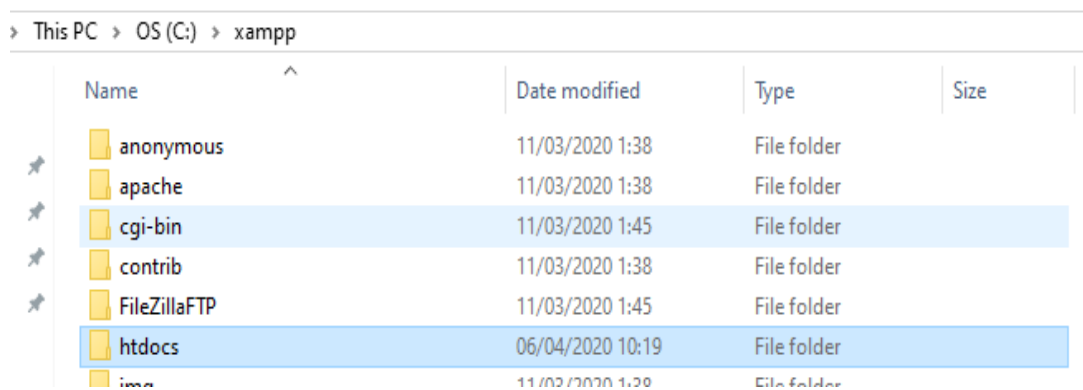

Figure 4. Display of CodeIgniter and Bootstrap installation locations

Once installed and configured, the next step is to integrate CodeIgniter and Bootstrap, by creating a folder named assets on the CodeIgniter project then extracting the downloaded Bootstrap file; then the next step is to run the XAMPP software that is already installed, run Apache and MySQL. Open the Visual Video Code software and open the CodeIgniter folder which is a htdocs style.

There are three main parts to the CodeIgniter framework, namely: views, models, and controllers. View: Duty to present information (easy to understand) to the user according to instructions from the controller. Model: Responsible for organizing, preparing, manipulating, and organizing data (from the database) according to instructions from the controller. Controller: It controls what the model should do, and which views should be displayed based on user requests. However, sometimes requests from the user don't necessarily require action from the model. For example, such as displaying a form page for user registration.
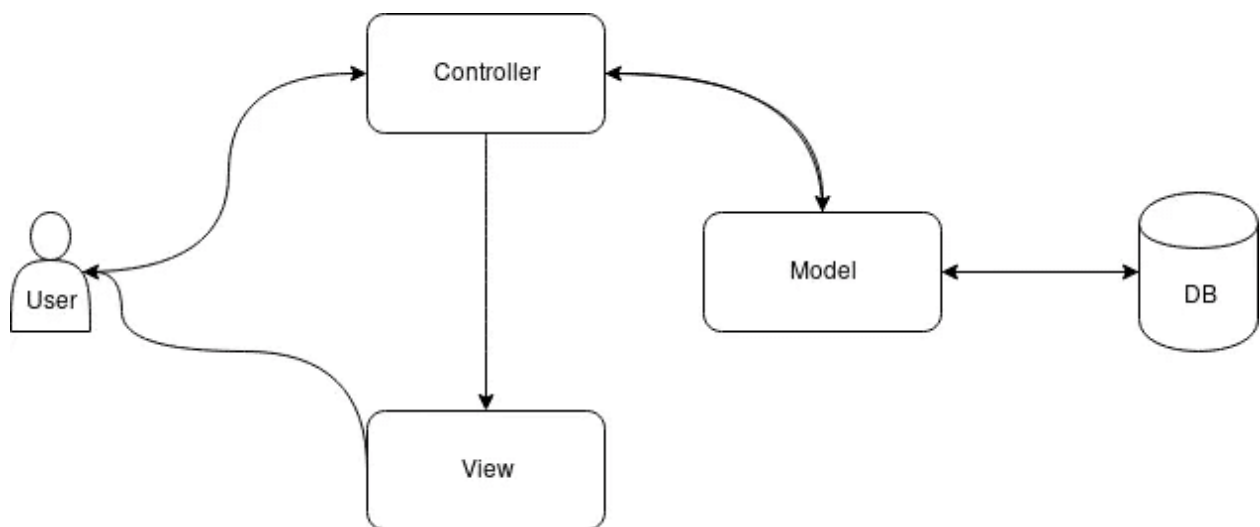
Figure 5. The flow of Codeigniter's three main features

The idea of Mahir Berbahasa is designed to be a learning media that can accommodate all the needs of foreign students in learning Bahasa Indonesia. There are five main features in this application, namely: Join Class feature, Exercise feature, Discussion feature, Dictionary feature, and Entertainment feature. BIPA IKIP Budi Utomo foreign students can choose features based on their needs in learning. The feature of exercises is used to measure the understanding of BIPA IKIP Budi Utomo's foreign students about the lessons learned. BIPA IKIP Budi Utomo foreign students can also take part in discussions about the lessons discussed with the Discussion feature. Mahir Berbahasa is also equipped with a simple dictionary powered by Yandex, which has ten languages. The use of it is almost the same with Google Translate, whenever BIPA IKIP Budi Utomo foreign students face difficulties in some ways, they can use this feature. The last one is the Entertainment feature; this feature is made to contain videos of Indonesian songs from National songs to children's songs.

Figure 6. The login page of Mahir Berbahasa learning application

In this application there are two roles, namely admin and user, where the menu that will appear will be different between admin and user. Admin can change, add, or delete menus, users, roles, materials, and so on. Meanwhile, users or users are only limited to a few menus. BIPA students will use the user, while the admin can be accessed by the lecturer.

DISCUSSION

There are six aspects that are aspects of the assessment of both BIPA IKIP Budi Utomo experts and foreign students, namely: visual appearance aspects, media relevance aspects, material organizing aspects, software engineering aspects, effects aspects for learning strategies, and language aspects. All these aspects use a range of values 1-5, which represents 1: not feasible; 2: less feasible; 3: decent enough; 4: feasible; 5: very feasible.

Visual Appearance Aspects

The visual aspect in this research refers to how things look on the visual system. Objects have physical properties, and in this case, optical properties are usually most relevant along with size, texture, shape etc. Caivanoa (2015). Advanced Language Applications built using CodeIgniter and Bootstrap Framework. The results of validation by media experts and questionnaires and interviews conducted on BIPA IKIP Foreign Students Budi Utomo, as users, exceeded what was expected. The validator provides a mean value of 4.4 while the user (student) is 4.75.

Aspects of Media Relevance

Mahir Berbahasa uses three main media as its learning materials. 1) Videos, the videos are made by recording some conversations in Bahasa Indonesia played out by models, and uploaded them in Youtube. Those are used to make it easier for BIPA IKIP Foreign Students Budi Utomo to understand the material being discussed; 2) Images, such as sketches, cartoons and other relevant images are also installed in the application in which all of them are made by hand drawing and shoots of some spots in Malang City; 3) and Audio, those are made by

recording conversations also played out by models which is mostly used in Listening sessions. Regarding this aspect, the validator provides a mean value of 5.0 and user 4.5.

Aspects of Organizing the Material

There are eight topics that come from this application, all of which are basic material in mastering Indonesian for beginners. These topics are arranged based on needs analysis, interviews, and references relevant to learning Indonesian beginners, these topics include: Introduction, Numbers and Time, Money, Food, Place and Direction, Family, Hobbies and Work, and Home and Environment.

Each topic is arranged in order of four language skills, listening, speaking, reading, and writing. In addition to the material, there is an exercise menu designed to make it easier for foreign students to be able to hone the knowledge and skills they have acquired from the previous menu. The mean value of this aspect from the validator was 4.00, while the students gave a mean score of 4.57.

Software Engineering Aspects

Wahono (2006) states that the software engineering aspect refers to These points below:

a. Reliable
b. Effective and efficient in the development and use of learning media
c. Maintainable (can be maintained / managed easily)
d. Usability (easy to use and simple to operate)
e. The accuracy of selecting the type of application / software / tool for development
f. Compatibility (learning media can be installed / run on various existing hardware and software)
g. Integrated learning media program packaging and easy execution
h. Complete documentation of the learning media program includes: installation instructions (clear, concise, complete), troubleshooting (clear, structured, and anticipatory), program design (clearly, describes the program workflow)
i. Reusable (part or all of the learning media program can be reused to develop other learning media)

This application is built using open-source software called CodeIgniter and Bootstrap Framework, which, compared to other similar Android builders, is more dynamic because the construction is the same as the web. This aspect obtained a mean value of 4.6 from the validators and 4.79 mean scores from students.

Effect for Learning Strategies Aspects

The effect aspect for the learning strategy refers to the method used by BIPA IKIP Budi Utomo foreign students to study. The learning application "Mahir Berbahasa" is designed to make it easier for students to learn more independently whenever and wherever without neglecting the compulsory learning they get from lecturers. In addition, in the current pandemic, educational institutions are required to organize online teaching and learning processes. This learning application which is a web-based learning application can be used as an alternative learning media, given the features in it.

Mahir Berbahasa with the concept of bringing classes into a single application that can be accessed anywhere and anytime brings a different atmosphere to BIPA IKIP Budi Utomo foreign students in learning Indonesian. This aspect obtained a mean value of 4.5 from the validator, while students gave a mean score of 4.7.

Aspect of Language (Linguistics)

Newmonic (2016) states that there are three main aspects of linguistics: form, content and usage. Form refers to phone, sentences, and grammar. Content refers to meaning and vocabulary. Usage refers to how the language is used in social context.

The materials used are compiled from many material books for BIPA by adjusting with the results of the needs analysis of BIPA IKIP Budi Utomo foreign students gained before the application was developed. There are two main problems faced by BIPA IKIP Budi Utomo foreign students in the ESP program: 1) Budi Utomo BIPA IKIP foreign students need more media in learning; 2) they do not have enough time to learn Indonesian, because their opportunity to study is only in class, which is only 100 minutes a week. Regarding this aspect, the validator provides a mean value of 4.5 and user 4.2.

CONCLUSION

Mahir Berbahasa is a learning application that is feasible to use as an alternative learning media for foreign students in learning Bahasa Indonesia. Based on the try out to the BIPA students of IKIP Budi Utomo and assessment done by two experts of learning media, this app is categorized into feasible to use. There are six aspects assessed, those are aspects of visual appearance, aspects of media relevance, aspects of material organization, aspects of software engineering, aspects of effects for learning strategies, and aspects of language. The average score gained by the app is 4.72 from the students after using it for about a month and 4.52 from the experts, using a range of values 1-5.

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