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ANDROID-BASED LEARNING: DEVELOPING EASY WITH GRAMMAR APPLICATION TO LEARN GRAMMAR

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ABSTRACT

The writers aimed to develop an application for learning grammar namely Easy with Grammar (EWMAR). The writers applied the Research and Development method by adapting the ADDIE Model, which has five stages: Analysis, Design, Development, Implementation, and Evaluation. 70 learners of the first semester of the Shariah Management Business study program answered a need analysis questionnaire. Sixty-six learners were involved in the field try-out and three experts assessed the writers' product. The instruments consisted of questionnaires and grammar tests. The technique of data analysis included descriptive qualitative and quantitative. Based on learners' perception questionnaire results, the mean score was 4 (100%), classified as "Excellent," which means that the EWMAR application was appropriate for the eleventh graders of senior high school learners. The average score of experts' assessments was 3.27, and at the percentile, 81.75% met the "Good" criteria to use it with minor revisions. Therefore, the EWMAR application is feasible as a learning medium. The writers recommended another scholar develop more modern Android-based learning to facilitate the educational process.

Keywords: ADDIE model, EWMAR application, grammar achievement, research, and development

INTRODUCTION

Supporting language learning is crucial in Indonesia since learners are expected to be proficient in English as an academic language, although English is not their mother tongue. Many of these learners fail to satisfy the academic expectations of higher education because their command of the English language largely dictates their academic achievement. Therefore, discovering efficient media for increasing high school learners' grammar mastery despite the physical, provisional, and educative distance is thus a major difficulty in open distance learning during the COVID-19 pandemic. Open distance learning refers to a flexible style of learning that allows learners with limited time and resources to study anywhere and at any time (Makoe & Shandu, 2018). Learners are frequently detached from their colleagues, educators, and even school physical facilities like a library due to the spatial and temporal distance in ODL (Moore, 1993; Makoe, 2010). In Indonesia, activities through correspondence are Open Distance Learning's initial model, which utilizes postal services as

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an interaction pattern. In 2003, Open Distance Learning used digital media in its learning system.

The development of digital media is now starting to mushroom in various places where digital design produces hardware and software that Brainware operates. One of them is the development of mobile applications. Mobile apps are mostly developed to be installed on smartphones. The beginning of the emergence of mobile apps is around 2009. This mobile application is a development of an application design that was not too sophisticated before (Majapahit Technology, 2020).

Mobile apps are now widely used as a learning method called mobile learning (Gorgiev, 2004). M-learning is offered via wireless mobile handheld devices, allowing us to learn every time and everywhere. Individuals, groups, and countries that were previously too far, socially, or physically, for other sorts of educational initiatives can now benefit from mobile learning (Traxler, 2009). Regarding educational context, several noteworthy advantages of mobile learning have been identified, including expense-effectiveness, easiness, willingness to learn, approachability, adjustability, and the imminence of information and interaction (Lee & CHAN, 2007; Valk et al., 2010; Laurillard, 2007; Valenta et al., 2001). Youngsters frequently use mobile apps to expand their insight and skills because smartphones are portable, and Internet/Wi-Fi access is available practically everywhere in industrialized countries (Berger et al., 2019).

In Indonesia, most learners have smartphones, which have revolutionized their perspectives on learning and practice and qualified them for more flipped classrooms (Azmi et al., 2017). Simultaneously, learners rely increasingly on Wi-Fi cellular on their mobile devices, social media, and applications to apply their knowledge and put concepts into reality. To ensure motivation, involvement, and language acquisition, teachers must be able to cope with this rapid change and give learners more dynamic, engaging, and appealing learning resources (Fayed & Ziden, 2014).

Grammar is essential in language acquisition, and many EFL teachers have tried to incorporate technology into the educational process in the hopes of helping learners enhance their grammar understanding (Yusof & Saadon, 2011). Some investigations have attempted to get insight into the consequences of Android-based learning on students' grammar mastery. Shuib et al. (2015) used the ADDIE model to design an Intelligent Mobile Learning Tool for Grammar Learning (i-MoL). Azmi et al. (2017) developed English learning media with the Android-based application English for Disability (EFORD). They found that it is very practicable to use English learning media, particularly grammar and speaking English material for learners with visual impairment. Ismiati et al. (2020) developed the Gra-Pe Warrior game. It is an adventure game with penguins as the primary characters, in which the player must solve grammatical questions at each level. The Gra-Pe Warrior game has evolved into a new learning tool that motivates learners. The researchers found that more than 90% of respondents are interested because learning in games is more engaging. After all, it includes multiple grammatical questions at each leveling-up door.

Android-based learning is a type of M-learning that is currently quite popular in Indonesia; however, the writers found that English lecturers at the State Islamic Institute of Palopo still prefer to apply the lecture method in teaching grammar. Therefore, the writers

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aimed to develop an Easy with Grammar application for learning grammar. The instructional materials on the EWMAR application are based on the syllabus of the first-semester students of Shariah business management. The product resulting from this study is software for mobile devices with the Android platform. Furthermore, the writers' application is not as perfect as other grammar applications that writers have encountered. Still, the EWMAR application has other pre-eminence than those other grammar applications developed by other scholars, such as translation machines, instructional materials in the form of written explanation and video learning, and merging with practice questions from Quizzy, which can motivate students to work on practice questions.

Based on the explanation above, the writers posed one question: "How to develop a feasible EWMAR application for learning English grammar?"

The Nature of Grammar

One of the characteristics of language is grammar. As a result, everyone learning a new language formally will be offered grammar instruction. Of course, this is dependent on the learning level of the children. Grammar study is a crucial part of language acquisition (Effendi et al., 2017). Ruin (1996) discussed the different types of grammar teaching, referring to them as "modern" and "traditional." The traditional view is that a teacher should pass on the learner's already-developed grammatical knowledge. He or she should explain how to understand and apply various aspects of grammar. The modern one proposes that a teacher and student collaborate to discover information. Exercises and assignments are crucial in this regard. The student investigates more than the teacher does.

Harmer (2007) divided two typical techniques for studying grammar: deductive and inductive approaches. Students will be provided with an explanation of grammatical formulae in the deductive method of studying grammar. Based on this explanation, learners write a phrase or statement in the language they have studied. The inductive approach is the opposite of the deductive approach. When using the inductive approach to studying grammar, learners are provided examples of sentences before learning the formula. Learners will try to deduce the formulae of the phrases from these instances.

Learning Media

The word media comes from Latin and is the plural form of the word medium, which means intermediary or introduction. Media are everything that people can use to transmit messages from sender to recipient to stimulate the thoughts, feelings, concerns, interests, and concerns of students so that the learning process occurs. Learning media can be defined as tools in the form of physical or non-physical, which are deliberately used as intermediaries between teachers and students in understanding learning materials to be more effective and efficient. According to Arsyad (1997), learning media are tools that carry messages or information for instructional purposes or contain teaching purposes.

The learning process becomes more uniform, with other teachers in the same class being able to use the media if a teacher is unable to attend. Surprisingly, the topic materials are evaluated based on their substance and how they are delivered through mediums that engage students in classroom learning. The media encourages students to interact with

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teachers and classmates. The materials are complex, but creative and inventive media saves time. Teachers can use learning media to comprehend the classroom environment better. Our students will be delighted to use good media to provide educational materials (Akrim, 2018).

The Nature of Android

Android is a Linux-based operating system aimed at touch-screen devices like smartphones and tablets (Musahrain, 2016; Zatulifa et al., 2018). Android, Inc. created Android with financial assistance from Google. Then, in 2005, they bought it. This operating system was first launched in 2007 in connection with the formation of the Open Handset Alliance, a telecommunications organization of hardware, software, and software businesses dedicated to advancing open standards for mobile devices. In October 2008, the first Android phones were released.

The Android user interface is mostly based on direct manipulation, with swipe, tap, and pinch touch gestures used to manipulate things on the screen, and a virtual keyboard used to input text. Aside from touch screens, Google has launched Android TV for televisions, Android Auto for cars, and Android Wear for watches, each with its user interface. The Android operating system is used on laptops, game consoles, digital cameras, and other electronic devices. We may indeed use Technology-based tools and media to study nearly everything in topics such as mathematics, physics, languages, arts, and humanism, as well as other important fields. Android is a Google-developed free and open-source operating system released under the Apache License (Widyaningsih & Zunfikar, 2017). Device manufacturers, cellular carriers, and application developers can freely alter and distribute software on Android thanks to open-source code and license permissions.

Android-based Learning as a Learning Medium

Grammar knowledge is essential for strong English fluency. To overcome the issues of low English proficiency among Indonesians, it is necessary to discover the major motivators that might help with grammar acquisition. In this modern era, Android-based learning is used as learning media. Pahriah & Khery (2018) stated that applications created through Android technology are more efficient and effective than other technologies like Windows or Symbian. Android-based learning media will transform monotonous learning into something more interesting (Zatulifa et al., 2018). Users will find it easier to learn something if they use Android because they can access the content and test their abilities from anywhere and at any time. Learners can use e-learning to manage their learning according to their self-directed skills, with the freedom to choose their location, time, topic, and direction of studying (Rosli et al., 2016). Lu'mu (2017) found that Android-based learning applications get very good, valid, practical, and efficient results. Based on the results of research carried out by Prasetyo et al. (2015), it can be concluded that there is a significant difference in increasing the learning motivation of high school learners, where learners use android-based learning.

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Safara et al. (2019) believed that adopting mobile-based learning could encourage and help the process of teaching and learning grammar because it is a contentious subject whether grammar is taught implicitly or explicitly. Because interlocutors grasp what has been said, most students do not realize the importance of grammar (Johansson, 2010: 24). It pushes grammar out of the way in terms of language learning. Grammar is still something that learners must master. Grammar is not a required course in the subject, but the students learn it implicitly, according to the 2013 curriculum. The goals of learning grammar are to enable students to use English correctly in both oral and written forms, as forms as to prepare them for higher academic levels that need students to utilize English in proper grammatical form.

The writers developed the EWMAR application using the Kodular website. This application is very easy for users because it has an uncomplicated display and does not spend a lot of data quota because users can assess it offline. Another advantage is that in this EWMAR application, there is also a language translator to make it easier for users to translate new words they know or in the form of a sentence that they do not know the meaning of. Because the writers utilized the Quizzy website to create practice questions, the negative of this EWMAR application is that learners must connect to the internet to access the practice questions.

METHODS

The writer used the ADDIE model to build a grammar application in this project, broken down into five steps: Analysis, Design, Development, Implementation, and Evaluation. Most of the models are modifications or spin-offs of the ADDIE model (Lai & Liou, 2007). The five phases of ADDIE comprise a cyclical process, with output from one stage feeding into the next. ADDIE model also allows for integrating pedagogy, learning theories, and other instructional design approaches (Koneru, 2010). assessing the product's feasibility. To assess the product's feasibility, the writers held field tryouts. The recommended research designs for product trials. After trying it out, the researcher distributed the learners' perception questionnaire.

The participants in this study were first-semester learners of the Shariah business management study program at the State Islamic Institute of Palopo. The writers chose them by using a stratified random sampling technique. 70 learners answered the need analysis questionnaire. Their age range was 18-19 years old. 66 learners joined the try-out. Besides, three lecturers assessed the product. The learners seldom use English in their daily lives.

The writers used questionnaires to collect some information about learners' needs. The writers distributed the need analysis questionnaire sheet via Google Forms. For the learners' perception, the writers utilized a closed questionnaire with pre-determined answers, allowing respondents to select. The writers used a Likert scale model. Each indicator is graded by placing a checkmark (√) next to the range of replies that are deemed appropriate. The learners' perception questionnaire was composed of 14 items. The writers wrote it in Indonesian to avoid misunderstanding. Another research instrument was a grammar test which consisted of 20 multiple-choice questions and 20 fill-in-the-blank questions. The learners answered the test for 90 minutes. Every correct answer was scored 1.

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The researcher evaluates the EWMAR application to ensure that it is genuine and ready for general use. Expert validation tests were conducted as part of the validation process. Material validation, the language used, and media validation are three types of validation used in the expert validation test. The media validation was conducted with the lecturer of technology and computer science. The English lecturers at the State Islamic Institute of Palopo were subjected to assess the language used and learning materials in the EWMAR application. Material verification is used to gather information and feedback on the accuracy and applicability of the EWMAR application materials and questions. The purpose of media validation was to gather information and feedback on the EWMAR application's quality and convenience of use. There were 30 items on the questionnaire sheet for the experts.

Validators are asked to download the EWMAR application onto their validator devices during the validation test. The validator is then requested to read the materials and answer some questions in the application. The validator is then requested to complete a questionnaire that covers three areas of the question category: (1) material description, (2) language used, and (3) media. There are eleven questions in the material description section, nine in the language used section, and 10 in the media section. The questions in this questionnaire are graded on a scale of 1 to 4.

Expert judgment generates quantitative and qualitative data by filling out the questionnaire. A set of qualitative data receives comments, ideas, and suggestions from the validator, while quantitative data is gathered by filling out questionnaire questions. The quantitative and qualitative data serve as the foundation for updating the product and establishing its implementation feasibility.

Quantitative data were derived from the mean score of grammar tests, and learners' perception questionnaire. The writers calculated the average and standard deviation of grammar tests. Then, the paired-sample t-test was conducted to determine whether there was a significant difference between the two classes.

RESULTS

The Results of Need Analysis

The writers found that 100% of learners have an android. The learners used it as a learning medium. 66.7% of learners agreed that the usage of Android in the teaching and learning process could make learning activities more fun. 73.3% of learners prefer applications with a simple display with various images on each choice menu. 53.3% of learners prefer the application's appearance that has a collection according to learners' level and with buttons tailored to their needs. 40% of learners chose an application that they can utilize online and offline. 66.7% of learners chose grammar as a difficult learning subject. The learners (50%) revealed that they had difficulty understanding conditionals, passive voice, and direct-indirect speech.

The Results of Experts' Validation

The writers distributed the questionnaire to be validated by the experts. The results of the experts' validation are shown below:

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Table 1. The results of experts' validation

Criteria	Average	Description
I. Materials		
A. Materials Presentation		
1. The materials presented in the media are complete.	3	Good
2. The materials are presented clearly	4	Excellent
3. The materials are delivered systematically.	3	Good
4. The materials presented are packaged in an attractive way	3	Good
5. The materials presented are easy to understand	4	Excellent
B. Evaluation		
6. The problems are stated plainly	3	Good
7. The questions are related to the theory and concept	3	Good
8. The answer key corresponds to the question	3	Good
C. Learning		
9. Application can improve students' understanding	3	Good
10. The application can attract the students' attention.	3	Good
11. This application allows students to study from anywhere	3	Good
II. Language		
A. Communicative aspect feasibility		
12. The language used is simple, clear, and easy to understand	3	Good
13. Message transmissions are simple to comprehend	4	Excellent
14. The precision with grammar rules is applied	3	Good
B. The feasibility of the readability aspect		
15. The use of terms is by the main concept of the subject	3	Good
16. The accuracy of language selection in describing the material	3	Good
17. Spelling accuracy	3	Good
18. Language used is grammatically correct	3	Good
19. Consistency in the use of terms	3	Good

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20. Ability to motivate and encourage critical thinking	4	Excellent
III. Media		
A. Software aspect		
21. The application file is a medium size	4	Excellent
22. The application does not run slowly	3	Good
23. The application does not stop running during the operation	3	Good
24. The application is simple to use	4	Excellent
B. Visual communication aspect		
25. The application's display is excellent	3	Good
26. The writing is easy to read	4	Excellent
27. The color schemes are appropriate	3	Good
28. The application's animations are excellent	3	Good
29. The application buttons are simple	4	Excellent
30. The application buttons function well	3	Good
Total Score	98	
Mean score	3.27	
Percentage	81.75%	

The expert validation resulted got a mean score of 3.27 at the percentile of 81.75%, which qualified as "Good". Further, based on the experts' validation, the EWMAR application can be used with revision. Some suggestions from the validators are the color of the button writing that is too flashy and the button's color that is not in sync with the button on the simple past and simple present menu.

One reason why the EWMAR application can improve the learners' grammar mastery is that the writers used the SAMR model by Ruben Puentedura which classifies four different degrees of classroom technology integration. SAMR stands for substitution, augmentation, modification, and redefinition. In substitution, for example, if the teachers are teaching tenses, they can use this EWMAR application online or offline to teach the students instead of using a textbook (See snapshot 1). In augmentation, the teachers asked the students to do exercises about tenses (for example) by clicking the answer directly on the screen rather than writing the answer on paper with a pen. In the modification, the writers create quizzes for student's classwork. The students can do the work process together with colleagues who are far away by clicking the "Tantang teman" button (see snapshot 2). Redefinition means that technology can provide other capabilities in the system previously. In the EWMAR application, the writers insert a translation tool to help students understand foreign languages offline.

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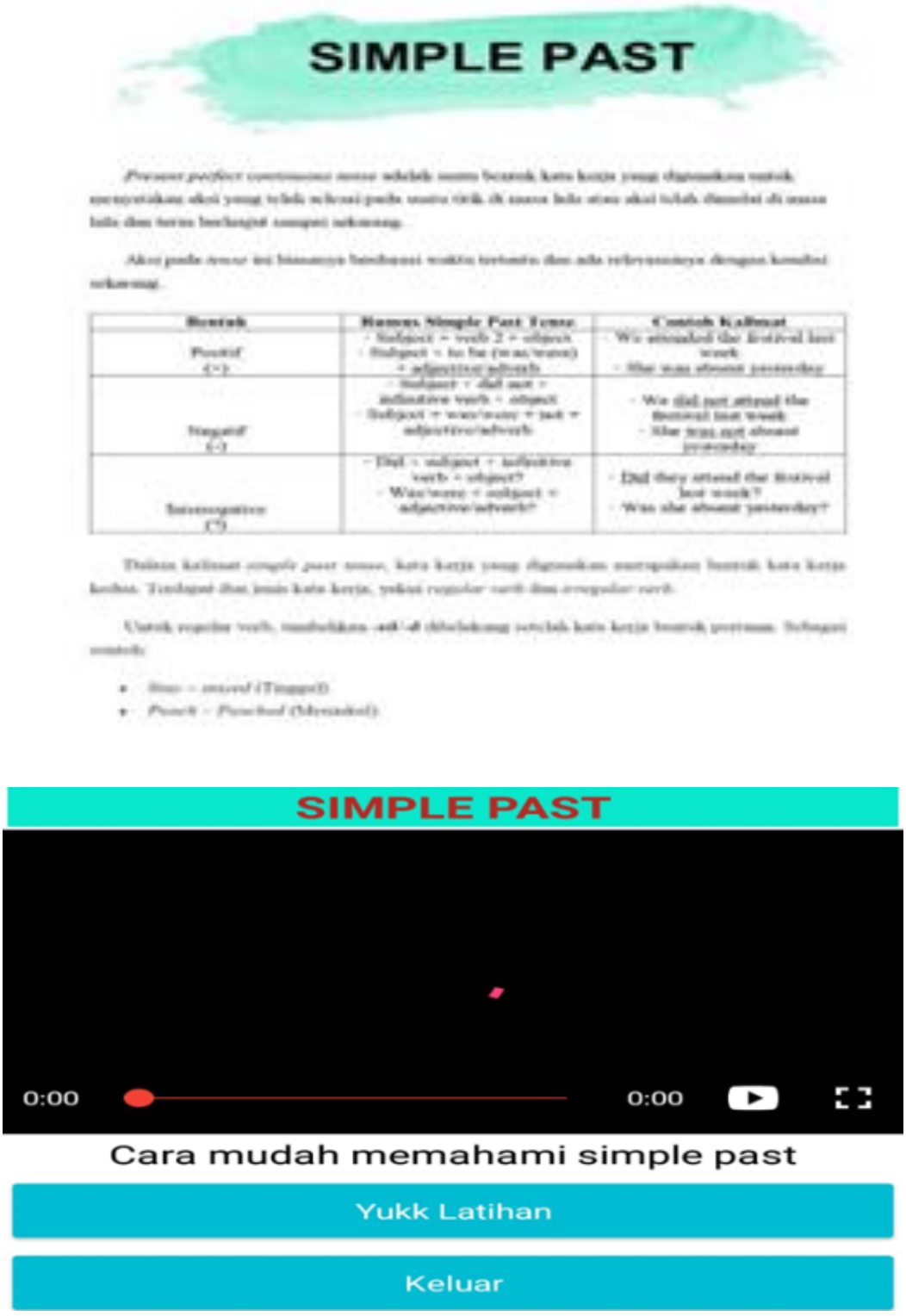

Figure 1. An example of learning material.

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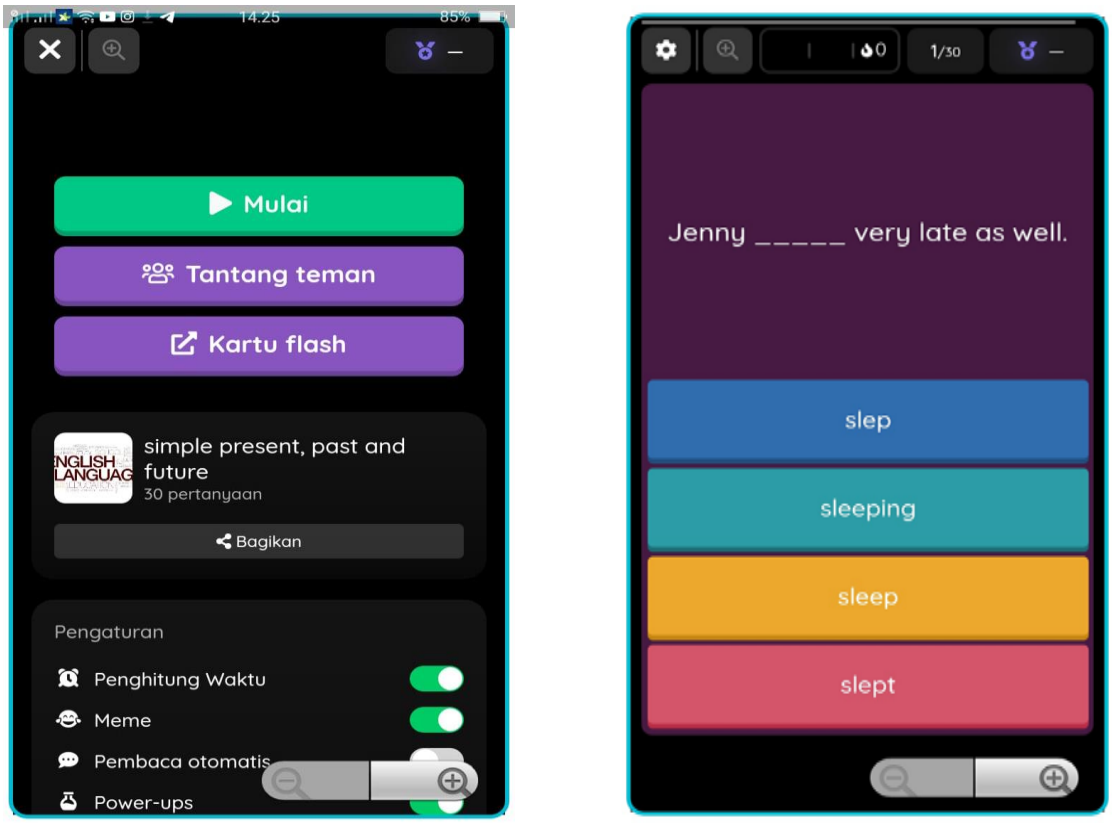

Figure 2. Quizzes for competition among students

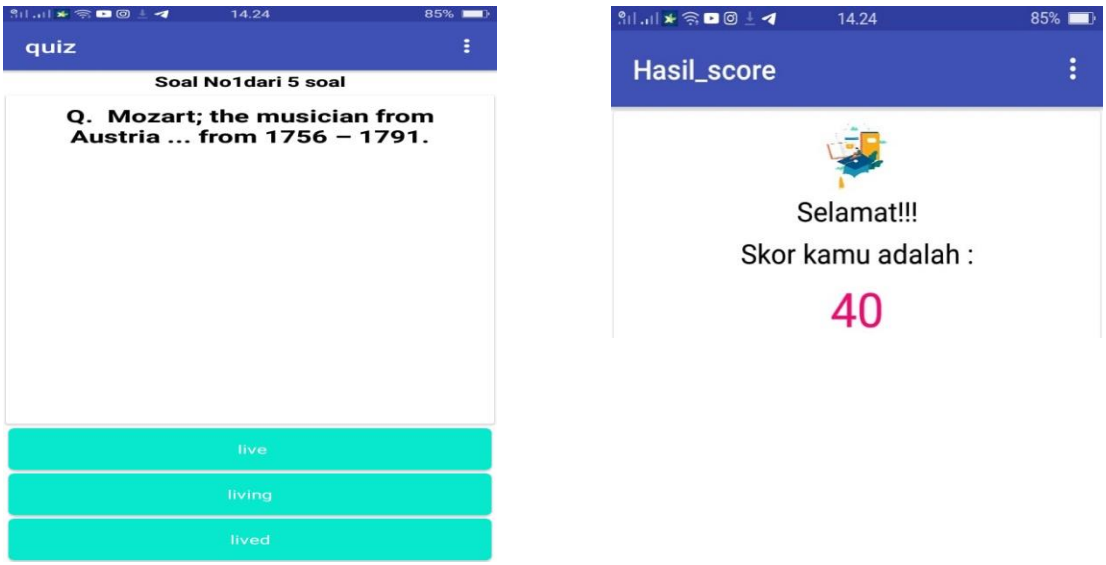

Figure 3. An example of exercises for the learners

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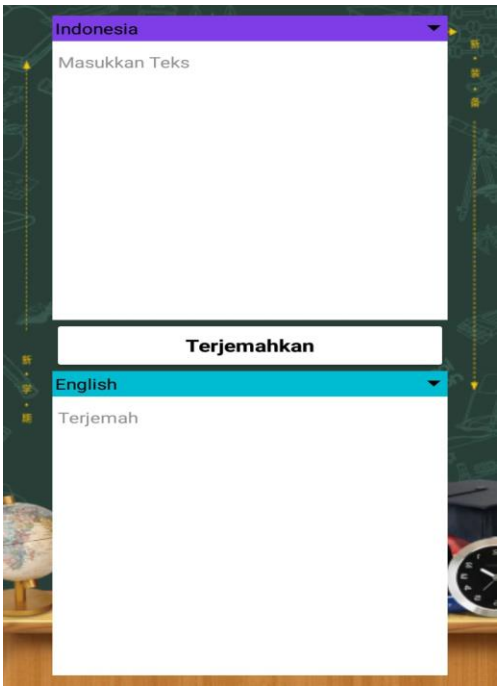

Figure 4. The translation tool display

The result of Product Feasibility

Table 5 below shows learners' perceptions mean score was 4 (100%), which was qualified as "Excellent". It denotes that the EWMAR application is ready to use without revision. The experts' assessment shows a good result.

Table 2. The feasibility results.

Assessment stage	Mean score	Percentage	Description
Expert Validation	3.27	81.75%	Good
Learners' Perception	4	100%	Excellent
Feasibility	3.67	93.87%	Excellent

The learners commented that the EWMAR application is already interesting due to the various colors, so it's not monotonous. In addition, the students stated that the sorting of the material was good at the start, from easy to difficult. They stated that pre-installed applications make it easy for them to learn and understand grammar. They can learn whenever and wherever they use their smartphone. The application is simple but attractive with the appearance of materials and questions that the user can choose freely and customize. Besides that, the application and materials show ease of use even for infrequent users who use the application to learn it. The materials explanations and questions are easy to reach and not boring.

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DISCUSSION

Mcgroarty in Safara et al. (2019) argued that one of the factors for the unsuccessful teaching of grammar is the media utilized by teachers to deliver the lesson. The educators understood that the regularly used medium is limiting and tiresome. The learners find it dull. We know how teachers' present material influences students' motivation to learn. Therefore, the accuracy of the selection of media and learning models that will be applied is one of the factors in the success of effective learning (Akrim, 2018). According to Arsyad (1997), the selection of learning media must be based on certain criteria, namely: 1) by the objectives to be achieved, 2) appropriate to support the lesson contents, 3) practical, flexible, and resistant, 4) teachers must have skills to use it, 5) target grouping and 6) technical quality.

Musahrain (2016) stated that technology media utilized by educators and learners provide a considerable benefit to the learning process itself. Android is one of the technological tools that are always evolving and utilizing Android apps in an EFL environment is becoming widespread (Hmidani & Zareian, 2022). Android is multi-platform, which means it can run on various screen sizes and resolutions. Furthermore, Android provides tools to assist users in creating cross-platform applications (Aritonang, 2014).

Android-based learning media can be categorized into two, namely (1) requiring an internet connection to use it (online-based) and (2) not requiring an internet connection (offline). At least smartphone-based learning media can be realized in two forms, the first is games (games), and the second is interactive multimedia. The selection of the type and form of media to be developed must be based on need analysis. Needs analysis is very necessary so that later the developed media can be used effectively (Firdaus, 2021).

The EWMAR application, an English learning grammar application, is the result of this study. EWMAR application is a modular-created application that includes learning content, video learning, a translation tool, and quizzes. The writers develop the EWMAR (Easy with Grammar) application to help students understand their basic grammar.

Following the results obtained by writers from the grammar test and learners' perception questionnaire, the EWMAR application is very feasible to use. The p-value was lower than the alpha ($0.000 < 0.05$). This means the EWMAR application significantly fosters the students' grammar achievement. The learners' perception resulted in a mean score of 4, with 100% of percentages qualifying as "Excellent." It denotes that the EWMAR application is ready to use without revision because the students assessed that with the EWMAR application, they could easily understand grammar and not make them bored when studying grammar.

Opposite to Salabery's research finding (2001), grammar teaching cannot be significantly supported by mobile-assisted language learning; most studies on M-learning usage, especially android-based learning, show effective and significant results. Agustina & Rahmawati (2021) developed 'Gring-Med' Grammar Learning Media, which focused on intermediate students learning English at schools. The implementation results show that the average acquisition percentage of the assessment is 88.3% in the 'very good' category. Badroeni et al. (2020) concluded that the application of master tenses could improve students' grammatical competence and practice. Android-based learning benefits teachers

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in teaching grammar (Munir et al. 2012). It is special because the learners can profit from the studying process in a more pervasive and individualized manner. Because it is technologically developed, adjustable, and capable of enriching, enabling, or diversifying traditional methods of learning grammar anytime, anywhere on mobile (Azizan & Gunasegaran, 2013). Anggraini et al. (2020) developed a Basic English Grammar application for the learners of English education IAIN Surakarta and it allows students to study and comprehend English grammar whenever and wherever they choose using a smartphone with the app loaded.

Tamimuddin (2007); and Sarrab et al. (2012) mentioned some benefits of android-based learning, namely (1) provides more in-depth learning opportunities, (2) learners can develop learning through searching for information from the internet, and (3) using smartphones, learners can dynamically build their competence. However, they also revealed some limitations of Android-based learning, namely, (1) processor capabilities, (2) memory capacity, (3) display screen, (4) power supply, (5) device I/O, (6) differences in a user interface (UI), previously, (7) different mobile platforms like iOS, Android, and Windows, and (8) different hardware builders for platforms like HTC, Google, Samsung, Apple, and others.

CONCLUSION

As a result of this study, the EWMAR application was an appropriate medium for learning grammar for the first-semester learners of the Shariah business management study program at the State Islamic Institute of Palopo. The results of the questionnaire analysis of students' perceptions of the EWMAR application at the percentile of 100% qualifying as "excellent" and from the experts' assessment results, was at the percentile of 81.75%. The final test's average score in the experimental class was better than the final test's average score in the controlled class (63.87 > 40). It means that the EWMAR application can foster the students' grammar achievement.

According to prior studies, mobile-based learning has benefits, particularly in educational implications that aid teachers in the teaching and learning process. Because teachers encounter issues such as limited time and a high number of pupils, building media to teach grammar based on mobile-based learning is the best option. In terms of the most recent technological innovation in the educational system, an Android application can help the educational process because Android gives a software platform for students to add and organize the material they require.

The writers suggest that there is a need for direction and supervision. Hence, the learners do not open content outside of learning materials. Further study needs to be carried out to develop and test the effectiveness or influence of EWMAR application on learning outcomes and students' interest because this study has not yet reached the staging experiment.

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