

Mobile-based Learning in Digital Era: Android Application as a Media to Teach Grammar

Ana Safara^{1(*)}, M. Zaim², Refnaldi³

English Department, Languages and Arts Faculty, Universitas Negeri Padang, Indonesia

(*)✉ (e-mail) anasafara23794@yahoo.com

Abstract

The prevalence of technology affects the work life of society. Its existence also contributed to the educational system. Therefore, the study was undertaken to investigate the advantages of implementing mobile-based learning to teach and learn English, especially grammar. The data were collected through observation and interview and were analyzed descriptively. Moreover, this study comprised a document analysis; several documents such as journals and related sources were collected and analyzed. The finding showed that one of the appropriate media used to teach grammar is Android Application or known as Mobile-based learning that is filled with interesting material for students to learn grammar anytime and anywhere. It was found that mobile-based learning has advantages on pedagogical aspects such as collaborative learning, blended learning, interactive learning, experiential learning, and problem-based learning.

Keywords: mobile-based learning, android application, teaching and learning grammar

Introduction

Technology is used in advance in the latest decade. Every aspect of activities in modern life is depended by technology. Automatically, it brings some effects and changes to the educational system. Instead of making learners computer literate, the usage of technology is an opportunity for educators to enhance pedagogical activities in delivering the lessons mainly based on the concept of mobile-based learning (Bidin & Ziden, 2013). A mobile device provides interactive learning (Cavus, 2009), self-regulated learning (Lan and Sie, 2010; Makoe, 2010), and experiential learning (Wong and Looi, 2011).

It may be claimed that mobile devices can help shape culturally sensitive learning experiences and the means to manage the growing amount of information in the world. There is countless of available resources on grammar, vocabulary, and idioms with accurate and useful information for each. Equipped with a mobile device, the learner can choose to consult a web page, access audio or video tutorials, send a query via text message to a friend, or phone an expert for practice or guidance. She may use one or several of these techniques. The point of these all is emphasized on how such a learner can take full advantage of the mobile experience.

The benefit of using mobile-based learning is believed could enhance and support the process of teaching and learning grammar since it becomes debated issue whether the grammar is taught implicitly or explicitly. As a fact, most students did not see the importance of grammar (Johansson, 2010:24) since interlocutors understand what has been said. It makes grammar to be more push out in the view of language learning. Indeed, students still have to learn grammar. The position of grammar itself is not as a main course of the subject, but it is learned implicitly, as stated in the 2013 curriculum. The aims of mastering the grammar are to enable students to use English in spoken and

written correctly and preparing them to a higher level of academic that require students to use English in correct grammatical. The comprehension of grammar is strongly needed in the teaching and learning process in the classroom where teacher and students are engaged in interaction both oral and written. As conducted by Zaim (2001), he observed the process of learning of the 16 learners and assessed both oral and written question forms to discover students' question formation development. He found that students faced problem in developing questions and made errors in the type of developmental errors dominantly in fronting. Furthermore, the importance of learning grammar is also emphasized in Arsyad, Zaim, and Susyla, (2018) that the choice of a verb tense is one of the most important in academic writing especially when starting to write an introduction of a research article where each tense used based on the timing of an event or action. Thus, regarding the importance of grammar to be learned, this study is aimed at investigating the problems in teaching-learning the grammar and the solution related to the use of mobile-based learning.

Review of Literature

1. ICT

ICT (Information, Communication, and Technology) is a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information (Meenakshi, 2013:9). The use of ICT for the teaching and learning process gives values and management of institutions. Schools should be adopted the technological developments. Thus, to make them able to do so, the teachers should be educated with sound ICT backgrounds, independent of specific computer platforms or software environments. Moreover, Meenakshi emphasizes that technological developments lead to changes in work and the organization of work, and required competencies are therefore changing such as critical thinking, generalist competencies, supporting expert work, decision-making, handling of dynamic situations, working as a member of a team, and communicating effectively.

2. Mobile-Based Learning

Mobile learning involves the use of portable learning material, including books, audio-cassettes, audio-CDs, and portable radios and DVD players (Kukulaska-Hulme & Shield, 2008:273). She added, for teaching and learning process, mobile learning refers to learning mediated via handled devices and potentially available anytime and anywhere. Similarly, (Wong and Looi, 2011) states that mobile learning should be an activity mediated in daily life and can offer students seamless learning experience. The concept from both researchers above revealed that mobile learning is the process of learning supported by a handled device that can be used by students in daily life without considering the time and the place. Thus, learners can learn individually.

Briefly stated, the benefit of a mobile phone is used in the education system as a media to teach. The media are no longer considered and utilized as mere teaching-learning tools for educators, but more than those, namely as a means of message conveyance from the message giver (teacher) to the recipient of the message (learners) (Sadiman, 2010). The concept of mobile-based learning facilitates the teaching and learning process since it focuses on the mobility of the learners. It could be in formal (within the classroom) or informal (outside the classroom), and the learners have the choice to choose when and what to learn (Kukulaska-Hulme and Shield, 2007:3). Thus, the concept of anywhere and anytime is the main reason for using a mobile phone for education.

Moreover, Bidin and Ziden (2013:722) states that several factors motivate the learners and educators to use mobile applications. They are categorized into three main points; the features of the devices, user's expectations, and pedagogical advantage. Firstly, features of the devices are further categorized into three; usability, which is small, light, and portable; technical, which is having special practical knowledge; functional, which can provide instant and spontaneous information. Second, user's expectations are mostly about personal experiences such as ownership, privacy, self-regulated

learning, flexible learning, life-long learning, and fun. Third, the pedagogical advantage of mobile devices is provided the learning process with collaborative learning, blended learning, interactive learning, experiential learning (learning in context), and problems based learning.

Thus, the utilization of mobile phone as technology use in the educational system is believed as the right choice to improve the quality of education since students are motivated to learn English through mobile phone. One of the recommendations that the teacher can explore their media through mobile phone is by designing and putting the material into an Android Application.

3. Android Application

Android is one of the latest innovations for modern mobile devices (Pereira, 2013). Android is based on the Linux kernel and, it is available under an open source license. All Android applications have the same OS rights and privileges and can make use of the majority of the devices' functionalities, such as accessing the camera, multimedia, and acceleration features. Besides, Android has the edge on its open-source operation system, providing an opportunity for the users to develop application feature in respect of their needs (Tamhane et al., 2015). Android application can be integrated with various teaching methods such as blended learning and experiential learning.

Method

This research is descriptive research. The data were collected through observation and interview to get the problems found in teaching and learning grammar. Document analysis was also used to support this study in terms of finding out the solutions to overcome the problems. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). The type of document used in this research is a personal document. Personal documents refer to the first-person accounts of an individual's actions, experiences, and beliefs (i.e., journals).

In this case, the researcher treats the document like a respondent or informant that provides the researcher with relevant information. The researcher "asks" questions then highlights the answer within the text. The other technique is noting occurrences, or content analysis, where the researcher quantifies the use of particular words, phrases, and concepts (O'Leary, 2014).

Results and Discussion

The researcher found several problems in teaching grammar related to the aims of this research, which are finding problems and solutions to the problems in teaching and learning grammar. The researcher highlighted the problems into three points; limited time in the classroom, uncontrolled class due to a large number of students, and lack of upgrade media. The 2013 curriculum emphasizes communicative language teaching in the process of teaching and learning the language. As stated in Zaim (2017), the 2013 curriculum should be relevant to the needs of life, developing abilities and interest, and responsive to the development of science and technology. Considering the grammar as one of the significant components in English, students should have a positive attitude towards it. Johansson (2010) found that learners were in high percentage positive towards grammar. On his finding, learners have seen that grammar is interesting to learn when they know the importance of grammar. Also, learners said that during school time, English grammar has been impressive when there is a mix of the teacher talking and exercise to do. In line with the statements from English teachers of Senior High School in Padang, students were active during the class and showing positive attitudes. Their attitudes are strongly supported by way of the teacher delivering the material and guide students to learn. Thus, it can be inferred that learners should be motivated to fit their attitude towards grammar and teacher as a facilitator is a key to maintain students' motivation.

In the process of teaching and learning grammar in the classroom, there were several problems found such the teachers did not have much time to teach grammar in class even in implicit ways. It is

in line with Zaim (2017), he states that it was difficult for students to get involved in the class activity. The teachers should give more time to the students to finish each step of activity before coming to the next step. The teacher also has to make sure that every student had finished doing the tasks given to them. Consequently, the teacher expected the students to learn the rest by themselves due to time limitation. Unfortunately, students cannot expand their comprehension toward the grammar individually. They faced difficulties and loss of motivation to learn. As a result, the grammar is still the one that will be avoided.

Another problem is a large number of students that could not be controlled simultaneously. Commonly, senior high schools in Padang consist of around 25 students for a classroom. It can be counted as the maximum number of students for each classroom. The teacher could not control all students, even checking their comprehension during teaching and learning process. Teachers cannot exert over the classroom to make sure that every student is gaining knowledge. Consequently, the goals cannot be achieved.

Moreover, the media used by teachers in transferring the material become one of the reasons for unsuccessful teaching and learning. The teachers recognized the media that commonly used are limited and tedious. It seems uninteresting by the students. As known, the way teachers deliver the material causes students' motivation to learn. In supporting the success of teaching and learning, various ways of teaching are needed since students benefit from different teaching (Mcgroarty, 2002:69).

Thus, the alternative solution can be offered to deal with the phenomena above by designing and developing an appropriate media for teaching grammar. One of the ways is designing a media that close to the newest innovation of technology. Considering the appropriate media is a part to set the ways of teaching. Thus, the teacher has to be creative in preparing and designing the media for students. Dealing with grammar as an aspect of language that is learned implicitly, a media that will be set up by teachers should be an upgrade and lately invention to make students are engaged and motivated to learn even individually. As Grzeszczyk (2016) revealed that the pedagogical implication of the research found that multimedia can be used and serve for practicing all of the skills, particularly in solving the grammatical tasks by using interactive tools since many students have problems with grammar.

The mobile phone is a wireless device that is easy to be held on hands everywhere by users. Trifanova (2004:3) defines mobile devices like a small, autonomous, and unobtrusive enough to accompany in every moment. Therefore, the significant growth of wireless and mobile computing technologies has caused the conversion of the delivery of knowledge through the digital learning from distance learning to electronic learning and ultimately to the mobile learning model (Bidin and Ziden, 2013).

It was found that mobile-based learning has advantages on pedagogical aspects such as collaborative learning, blended learning, interactive learning, experiential learning, and problem-based learning. Considering the particular case of mobile language learning, Kukulaska-Hulme (2009) points out that the focus of attention is actually on the pedagogical interactions and less on the nature of the technology being mobile or fixed.

Collaborative Learning

Collaborative learning, as one of the benefits of mobile-based learning, can support the process of teaching and learning grammar. Through mobile devices, a process of teaching can be run collaboratively since the students can work together towards one common goal (Bidin and Ziden, 2013). He states that so due to the accessibility of mobile devices that allows more opportunities for participants. It is in line with Cheng (2012), the process of teaching and learning are not limited to the classroom setting anymore, it is enhanced beyond the classroom where learners can engage in a communicative platform that facilitates collaborative discussion. For example, it is suggested making

a mobile application that provides materials of grammar and also connected to the internet to let the students participate in the application. Students are expected following the instruction in pairs but working on their own devices. That is what Moura and Carvalho (2008) did in their research. They carried out a series of educational experiments using mobile devices such as mobile phones and MP3/MP4 players to evaluate the implications of mobile technologies in individual and collaborative learning. The authors created pod-casts to let the students have lectures on audio files in mobile devices and listening to them when and where they want.

Blended Learning

Through mobile devices, teachers can explore their creativity in teaching English and set the time to teach effectively since blended learning allows teachers to carry out students' projects using mobile devices after a class session. Lai and Hwang (2015) classified blended learning into two types; classroom mobile learning mode and in-field mobile learning mode. Classroom mobile learning provides students with the tasks in the mobile devices as well as in the textbooks that should be completed in the classroom, while in-field mobile learning mode further scaffolds the students to construct knowledge during in-field learning activities. This mode not only guides the students to observe, identify, and compare the features of the real-world learning targets but also helps them connect the real-world information to the knowledge learned from the textbooks by asking them relevant questions and providing them with supplementary materials.

Interactive Learning

The mobile devices function as the interactive agents provide varying levels of interactivity and engagement with technology. For instance, mobile telephones with cameras permit students to photograph environmental problems and serve as a means for sharing concerns with friends. Thus, students can pose questions related to the environment, collaborate with classmates, learn new knowledge, and formulate plans to solve environmental problems (Uzunboylu, Cavus, 2009). Mobile learning potentially moves to learn outside classrooms and into students' environments, both real and virtual; thus, it re-conceptualize learning as personal, situational, collaborative, and lifelong. An example of interactive mobile learning was done by Uzunboylu in 2009, working collaboratively and sharing information was built into group activity to encourage undergraduates creating a virtual map by transmitting snapshots and text gathered while exploring a geographical area in North Cyprus. Another activity can be done by working collaboratively and sharing information that was built into a group activity.

Experiential Learning

Learning in context is the concept of experiential learning. Experiential learning is a holistic learning theory with an emphasis on knowledge creation through direct experience and observation as opposed to cognitive learning theories that emphasize cognition over affect (Kolb, 2000). By applying already existing knowledge in combination with the gathering of new information through observation, students build and strengthen new knowledge. The proposed mobile learning environment allows the implementation of experiential learning courses with the utilization of students' mobile devices. A similar statement was also found in Shelter (2003) emphasizes that the tools in mobile devices develop the connection between school and other everyday activities. It can be inferred that education can go beyond the classroom context and all aspects that relevant to the learning can be learned in the classroom and can be enhanced for learning (Bidin and Ziden, 2013).

Problem-based Learning

Problem-based learning is used to support learners through the problem-solving process by providing tools and resources. Example activity of mobile-based learning is that students work in small groups to analyze the problem and determine what information might be required for a

solution. If the important areas of learning are identified, students investigate individual study and share their findings to the group and apply them to develop a solution to the problem. The last point involves reflective activity in which what has been learned is summarized and integrated with students' prior knowledge.

Regarding the advantages of mobile-based learning, an upgrade media in the type of Android Application is suggested to be used in the teaching and learning process, especially in teaching grammar. Since Android provides special platforms to let the users have their own application, it makes this type of mobile OS becomes common and popular. Moreover, Android will be widely available, easily accessed, and used by a large number of the global population.

Conclusion

In this study, mobile-based learning was proposed to be implemented in teaching and learning grammar inside and outside the classroom. Furthermore, according to the previous researches, mobile-based learning has advantages, especially for the pedagogical implication that has tremendous help for teachers in the teaching and learning process. Therefore, designing a media to teach grammar based on mobile-based learning is believed as the right choice since teachers faced problems such as limited time and a large number of students. Regarding the newest innovation of technology used in the educational system, a media that can be used to support the teaching and learning process is in the type of android application since Android provides a software platform to add and organize the material needed by students.

Acknowledgments

I would like to thank Prof. Dr. M. Zaim, M.Hum, and Dr. Refnaldi, S.Pd., M.Litt from Universitas Negeri Padang who has giving suggestion and contribution to this article and the anonymous reviewers for valuable feedback.

References

- Arsyad, S., Zaim, M., Susyla, D. (2018). Review and Citation Style in Research Article Introductions: A Comparative Study between National and International English-Medium Journals in Medical Sciences. *Discourse and Interaction*, 11(1), 28-51. DOI: 10.5817/DI2018-1-28
- Bidin, S., and Ziden, A.A. (2013). Adoption and application of mobile learning in the education industry. *Social and Behavioral Sciences*, 90(2013), 720-729. DOI: 10.1016/J.SBSPRO.2013.07.145
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40. DOI: 10.3316/QRJ0902027
- Cavus, N., & Uzunboylu, H. (2009). Improving critical thinking skills in mobile learning. *Procedia - Social and Behavioral Sciences*, 1(1), 434-438.
- Grzeszczyk, K.B. 2016. Using multimedia in the English language classroom. *World Scientific News*, 43(3),104-157.
- Johanssen, A. (2010). What influences students' motivation for learning English grammar? *Institutions of Language and Literature*. Linnaeus University. <https://www.diva-portal.org/smash/get/diva2:373545/FULLTEXT01.pdf>
- Kolb, D. A., Boyatzis, R. E. and Mainemelis, C., (2000). *Experiential Learning Theory: Previous Research and New Directions*. Department of Organizational Behavior, Case Western

- Reverse University. <https://learningfromexperience.com/downloads/research-library/experiential-learning-theory.pdf>
- Kukulka-Hulme, A., & Shield, L. (2007). An overview of mobile assisted language learning: Can mobile devices support collaborative practice in speaking and listening? *The Open University UK*. DOI: 10.1017/S0958344008000335
- Kukulka-Hulme, A., and Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, 20(3), 271–289.
- Lai, C., & Hwang, G. (2015). High school teachers' perspectives on applying different mobile learning strategies to science courses: the national mobile learning program in Taiwan, *International Journal of Mobile Learning and Organization*, 9(2), 124-145. DOI: 10.1504/IJMLO.2015.070704
- Lan, Y. F., & Sie, Y. S. (2010). Using RSS to support mobile learning based on media richness theory. *Computers & Education*, 55(2), 723-732.
- McGroarty, M. (2002). Situating second-language motivation. In Z. Dörnyei and R. Schmidt (eds.), *Motivation and second language acquisition* (69-91). Honolulu, HI: University of Hawaii Press
- Meenakshi. (2013). Importance of ICT in Education. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 1(4), 3-8
- Moura, A., & Carvalho, A., A. (2008). Mobile learning: Teaching and learning with mobile phones and podcasts, *Eighth IEEE International Conference on Advanced Learning Technologies*. DOI: 10.1109/ICALT.2008.294
- O'Leary, Z. (2014). *The essential guide to doing your research project (2nd ed.)*. Thousand Oaks, CA: SAGE Publications, Inc.
- Pereira, O. R. E. and Rodrigues, J. J. P. C. (2013). Survey and analysis of current mobile learning applications and technologies. <http://dx.doi.org/10.1145/2543581.2543594>
- Sadiman, A, et al. (2010). *Media Pendidikan*. Jakarta: Rajawali Pers
- Tamhane, K. D., Khan, W. T., Tribhuwan, S. R., Burke, A. P., & Take, S. B. (2015). Mobile learning application. *International Journal of Scientific and Research Publications*, 5(3), 1–4.
- Trifanova, A., Knapp, J., Ronchetti, M. and Gamper, J. (2004) Mobile ELDIT: Challenges in the transitions from an e-learning to an m-learning system. Trento, Italy: University of Trento. <http://eprints.biblio.unitn.it/archive/00000532/01/paper4911.pdf>.
- Uzunboylu, H., Cavus, N., & Ercag, E. (2009). Using mobile learning to increase environmental awareness. *Computers & Education*, 52(2), 381-389.
- Wong, L-H. and Looi, C.K. (2011) 'What seams do we remove in mobile-assisted seamless learning? A critical review of the literature', *Computers & Education*, 57(4), 2364–2381.
- Zaim, M. (2001). The Development of Questions by the Indonesian Learners of English, *Asian Englishes*, 4(2), 102-119, DOI: 10.1080/13488678.2001.10801078
- Zaim, M. (2017). Implementing Scientific Approach in Teaching English for Senior High School in Indonesia. *Asian Social Science*, 13(2), 33-40, DOI: 10.5539/ASS.V13N2P33