Using Mobile-Assisted Language to Encourage EFL Learning among Indonesian Learners of English

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Abstract

Digital Literacy (DL) is defined as the ability to use information and communication technology to communicate with cognitive and technical skills. One of the Digital Literacy is Mobile-Assisted Language Learning (MALL) or mobile phones-based language learning. Merits of this study are worthy of helping learners easier understand the language learning materials presented by either guided face to face in the classroom or self-learning out of the school. The study used experimental and control classes to compare the results that the significance of Mobile-Assisted Language Learning in learning language could be prescribed. Refer to the initial students' ability, this study designed pre and post-test for the experiment. Furthermore, participants were 40 students of second-year students at the English Education Department. Same topics were taught for experiment and control class in alter methods. The results claimed that the using post-test of MALL had merits on improving experimental group more than control group performance. The results declared that using MALL would encourage students' learning activities such as self-language learning, enriching vocabulary, promoting teacher's pedagogic, student's cognitive, writing skill, reading comprehension, speaking, grammar and listening skill. Lastly, this paper implied MALL as a reference for future curriculum and material development.

Keywords

Digital Literacy, Mall, Language Learning

1. Introduction

English as a foreign language has been learnt by so many people all over the world. The importance of learning this language is caused by its status as the most frequent used language for international communication (Andi, K., & Arafah, B. 2017, Baharuddin, A.F, Arafah, B. Ruing, F.H, Muaffaq, M. Nasrawati, 2021). To accelerate the learners' mas-

tery in the skills of English (e.g. speaking, listening, writing, as well as reading), language teachers make effort to use innovative teaching methods, techniques, and technology in English language pedagogy (Ismail, et. al. 2020, Arafah, B, et.al. 2021). Technology for many English teachers is regarded to have an essential role for providing an effective and a high-quality of English language education (Kaharuddin, Ahmad, D, Mardiana, Rusni, 2020, Arafah, B., Jamulia. J., & Kaharuddin. 2020). One increasing trend for taking advantage of technology is the use of mobile application in language learning.

In the era of industrial revolution 4.0, mobile cellphone is a different need after meal (Arafah, B. & Kaharuddin 2019, Ali1&2, M. M, 2019). The education practitioners could see this opportunity for using mobile cellphone in language learning process. Nelson et al. (2019) interpreted that there were some reasons for mobile-assisted language learning. As illustration people tend to use practical things, the price of mobile cellphone is affordable and cellular or technology develops rapidly. One merits of advanced technology can be seen in educational system; student-centered learning (SCL) using cellphone. Correspondingly, Miangah and Nezarat (2012) said that mobile phone as modern communication apparatus is the easiest to use and to get it. As a result, mobile phone-assisted language learning process is also defined as automatically learnt life proficiency.

Life proficiency does not only involve the ability to use technological, informational and communicational devices, but also the ability to socialize, to learn, and to have attitude, critical thinking, creative, and inspirative as digital competencies (Arafah, B., Thayyib, M., Kaharuddin, & Sahib, H. 2020). Therefore, the decision to use mobile phone is potentially affecting humans' life quality including their learning process since it is portable, interactive, sensitive, and connective (Arafah, B. & Hasyim, M. 2019). As everyone knows that the recent trend of the use of English as a universal language requires people to perform many things by involving mobile phone in their daily life, such as to interact with other people in social media, to go abroad, to play games, and many more (Kaharuddin., & Hasyim, M. 2020). English learners as active mobile phone users are potentially able to improve their English by using facilities available in their smartphone without spending extra money for taking English courses at language centers (Hasyim, M., Kuswarini, P., & Kaharuddin. 2020).

As for many students, the advanced internet technology is mostly used simply to update the status or to mutually comment or uploading photos on Facebook and Twitter, but a few used for English pedagogy purposes (Lee, H., Kim, J. W., & Choi, T. Y. 2017). Supposedly, the advance of internet technology can be further explored and utilized for increasing the leraners' knowledge and skills of English (Kadaruddin, Arafah, B., Ahmad, D., Kaharuddin, Iska, 2020). Based on the preliminary research conducted among 40 university students, three months before carrying out this study; it is found that all the students have smartphones for each. 55 % of the students use smartphones for social media (such as update status, take the picture, join group members), 20 % use smartphones to watch YouTube, 20 % use for games, but only 5 % of the students use smartphones for learning purposes. The pointed question regarding the facts is that why the students don't use their smartphones for a pedagogical purpose, especially for learning and improving their skills of English.

Referring to the fact that the industrial revolution 4.0 presently exists where English learners 'activities are almost dominated by the use of technology, there should be an effort to adapt preexisting educational curriculum with the urgent demand from the era of industrial 4.0, especially in the context of English language pedagogy. (Ellahi, R. M., et.al. 2019, Bahar, A. K., & Latif, I. 2019). In other words, redesigning curriculum of language pedagogy which integrates technology such as computers, mobile phones and their applications is essential to do (Arafah, K., Arafah, A. N. B., & Arafah, B. 2020). The presence of technology in English language curriculum will encourage the laerners' interest and learning motivation in several ways. *The first*, technologies can easily attract

the learners' attention in learning materials or exercises because of the interactive features of technology. *The second*, technology offers automation (artificial intelligence) which enable the learners to do words and grammar corrections easily. *The third*, technology provides authentic materials which are very useful to give the learners knowledge of connectivity between texts and contexts. The forth, technology enables the learners to involve in learning activities more active which develop not only their skills and knowledge of language, but also their cognitive skills. *The fifth*, technology will be able to assist the learners to publish and to promote their works which are very useful to grow their self-confidence (Roblyer, 2006).

In a nut shell, the use of technology such as mobile phone will be able to grow the laerners learning motivation. Learning motivation is really required to form independent, active, and autonomous learners. Such learners have capability to develop their skills and knowledge with or without teachers' helps (Hasjim, M., Arafah, B., Kaharuddin, Verlin,S, & Genisa, R. A. A. (2020). Apart from the roles of technology, teachers' role is still reasonably required to guide the learners in exploring the positive sides of using technology in order to create effective teaching and learning English. In response to the facts, this study examines the effect of using technology in terms of mobile-assisted language learning on the development of the English skills, and the cognitive skills of Indonesian learners of English.

2. Literature Review
2.1 Digital literacy

Digital literacy is the knowledge and skill to use digital media, communication tools, or networks in finding, evaluating, using, making information, and using it in a healthy, wise, intelligent, accurate, precise, and law-abiding manner to foster communication and interaction in daily life. Digital literacy is also the ability to use information and communication technology (ICT) to communicate content/information with cognitive and technical skills. Digital literacy tends to be related to technical expertise and focuses on cognitive and social-emotional aspects in the digital world and environment. Essential elements for developing digital literacy are 1) culture: understanding the various contexts of digital users, 2) cognitive: power of thought in assessing content, 3) useful: creation of something expert and actual, 4) communicative: comprehension and communication performance network in digital world, 5) responsible confidence, 6) creative: perform new things in new ways, 10) critical in responding to content, and 11) and socially responsible.

The basic principles of developing digital literacy are such as 1) understanding to extract ideas explicitly and implicitly from media; 2) interdependence between one media with another media; 3) social factors determining the long-term success of the media that shape the organic ecosystem to search for information, share information, store data and ultimately reshape the media itself; 4) curation or ability to judge information, save it for reassessment.

Indonesian digital literacy framework is designed as three tools for (a) protection: the need for awareness of safety and comfort of the internet users that is the protection of personal data, online security and individual privacy with services encryption technology as one of the solutions provided; (b) rights: protected-freedom of expression rights, intellectual property rights, and the rights to association and assembly; lastly empowerment, the internet empowerment to produce productive work, citizen journalism, and entrepreneurship as well as matters related to information ethics.

Additionally, digital literacy is defined as the interest, attitude, and ability of individual to use digital technology and communication tools to access, manage, integrate, analyze and evaluate information, build new knowledge, create and communicate with others to participate effectively in society. Nelson, Courier, and Joseph (2019) clarify one aspect of digital literacy is compilation of application utilizing digital literacy to compete, save, re-

cover and show information or data. Meanwhile, the essential elements for developing digital literacy are for examples 1) Cultural; understanding various contexts of the digital users, 2) Cognitive: the power of thought to assess content, 3) Constructive: the creation of something expert and actual, 4) Communicative; understanding and communication performance network in digital, 5) Responsible; be creative and lastly, critical in responding content, (Tagg, C., & Seargeant, P, 2019) (Blau, I., Shamir-Inbal, T., & Avdiel, O, 2020) (Lazonder, A. W., Walraven, A., Gijlers, H., & Janssen, N. (2020) made interpretation with a longitudinal study, digital literacy develops children to collect and to create information, (Bhatt, I., & MacKenzie, A, 2019) (Tagg, C., & Seargeant, P, 2019). Digital literacy enhanced pedagogical, cognitive and self-regulation designs (Blau, I., Shamir-Inbal, T., & Avdiel, O, 2020).

2.2 Mobile-Assisted Language Learning

Mobile-Assisted Language Learning (MALL) has been popular since 2000 asserting the use of hand phone, IPad and tablet as a device to learn language. As part of e-learning, it is called as a distance learning. Many scholars recommend the use of MALL as media to encourage students to study easily, comfortly and collaboratively. This mobile-assisted education is helpful for students in their study (Ali1&2, Mahmood, Anwar, Khan, & Hussain, 2019). They claimed that MALL could make people addicting to use it. Besides facilitating people to learn grammar, listening and writing skills, mobile phone technology could be giving merits in pedagogical and psycho-social as introduced by Bachore (2015), Azar & Nasiri (2014), Kim Rueker & Kim (2019), Kukulska Hulme & Viberg (2014), Saputra & Myartawan (2019), Yan & Wang (2019), Ali & Miraz (2018), Hendriwanto & Kurniati (2019), and How, Lee, Chen & Shim. (2019).

Similarly, Azar and Nasiri (2014) proved the learners' attitudes toward the effectiveness of Mobile Assisted Language Learning (MALL) in L2 Listening Comprehension. Another study claimed that MALL is an effective instructional strategy for training or professional workshop development and ongoing technical support and assistance (Kim, Ruecker, & Kim, 2019). Comparatively, two significant impacts of MALL on learning language are pedagogical and affective aspects. The compelling aspects include increasing motivation, engagement and enjoyment, mutual encouragement, reduction in nervousness and embarrassment, and a few adverse reports of risk of distraction, safety concerns, feelings of uncertainty and technical problems (Kukulska, Hulme & Viberg, 2018). Meanwhile, Yan & WANG (2019), Hoi, V. N. (2020), and Jiang, D., & Zhang, L. J. (2020) asserted that students have a positive attitude towards WeChat teaching in terms of interaction, participation, independent learning, establishing learning and improving oral performance. The use of WeChat platform is not only helpful for correcting learner's pronunciation and phonetic intonation, but also improving their English speaking ability. WeChat portability enables the learners to take advantage of fragmented-learning and facilitates the learners' mutual learning and the timely communication between students and teachers. At the same time, it helps to overcome the anxiety and allows adult English learners to speak English bravely. Their study was also confirmed by Ali & Miraz (2018), Hendriwanto & Kurniati (2019), Hao, Lee, Chen, & Sim (2019), Chen, Mayall, York, & Smith (2019), Rezaee, Alavi, & Razzaghifard (2019), Ali1& 2, Mahmood, Anwar, Khan, & Hussain (2019).

2.3 The Openlibrary.org website

In this era of digital and mobile literacy development, many information and learning facilities can be accessed through internet. However, paid sites sometimes become an obstacle to access especially for the students living in the category of low economic condition or those who need reading material, knowledge and free information. Therefore, open library is the alternative solution to visit (Stagg, A., & Partridge, H, 2019). In addi-

tion, Downes, S. (2007) advises collaboration programs for society to produce funding for sustainable free educational resources.

The source of open access allows the students as research participants to visit a public library that can be accessed. Through these free books provider sites, they can freely read the references they need, especially those related to subjects at school. Fundamentally, the students in Indonesia are still included in a relatively low-categorized reading interest. This fact can be seen from the students' participation when attending lectures. Some students tend to be quiet and only accept information conveyed by the lecturer. They rarely give criticism, opinions or questions. The lack of student interest in reading books is basically due to technology. They prefer opening gadgets rather than reading books. This device makes easy the students to find information or knowledge related to it assignments at school. In addition, this device can also be taken anywhere and contains many e-books in it. No wonder students rarely carry books and often use cellphones.

With reference to the students' fondness in gadget, research stated that each participant applied open access library as a facility to support their reading materials.

Figure 2. The open library Website
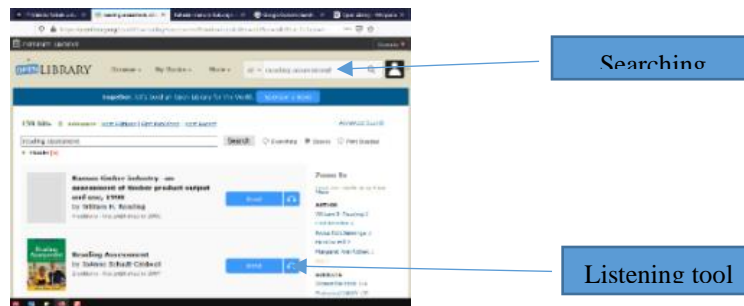
## 3. Research Methodology

3.1 Participants

There were 40 students in the second year of the Department of English Education as participants of this study. The reason for choosing this subject was that in this semester the students were taking reading courses. Based on preliminary observations and short interviews conducted by researchers, none of them was fond of reading. It was also explained by the results of the pre-test as shown in table 1 that the students performed low scores in reading subject. Another reason was that all students had Android cellphone to enable the MALL-based learning. Furthermore, the object of this research was students' scores on reading subject. The scores were divided into both the control and experimental groups.

3.2 Research instruments Test

This research examined the pre-test and post-test to compare of students' scores in both tests. Pre-test is a recommended instrument to measure the effectiveness of one method in learning process. It aims to measure the initial ability of the students in reading comprehension. To reveal the effectiveness of using mobile application in learning language, the post-test was then given after using MALL in learning reading comprehension. The test was to find a topic or message, to state and imply the meaning from the predetermined title as shown in Figure 3. However, the students were first allowed to open the website open library.org, and then in the "search" box they typed the theme "English Education". After all participants had successfully accessed the book, researcher acting as a lecturer gave instructions to read the book and then work on the provided answer sheets.

Figure 3. Pre Test & Post Test Chosen Topic
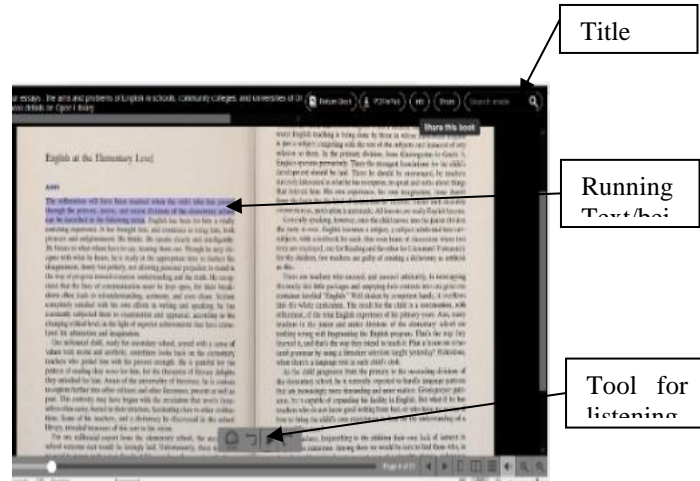
(Adapted from openlibrary.org)

In answering questions the participants could read while listening to the text being read. This could greatly facilitate them to increase understanding on the text being discussed. According to theory that each learner has different learning styles, such as visual, audio, and audio-visual (Seçer, Ş. Y., Şahin, M., & Alcı, B., 2015). The application supports the student's different learning styles. Furthermore, pertaining to theme, they were ordered to choose more specific topic, e.g. "English for Elementary Level" as seen in screen capture figure 3. One of the questions was:

Based on the reading passage above, the first paragraph tells us about…….

A.   Teaching English since elementary school
B.   Speaking clearly
C.   Speaking intelligently
D.   Teaching writing

Interview

Interview is a procedure designed to obtain information from a person through oral responses (Arafah, B, et.al. (2021). The interview in this research was done randomly to students who conducted learning using mobile. It means of checking or verifying the information obtained previously and also a direct communication technique between researchers and learners. The data obtained from the interview were used to support of the students' score and help researcher more accessible drawing conclusion. In addition, the purpose of the interview is to get the right information from participants and in this case the researcher performed an open interview. This interview was based on questions that are not limited to or are not bound by the answer. This study used an open interview type; participants were not bound in responding to the questions related to the benefits of MALL they felt in reading courses this semester. The information obtained is useful in strengthening the improvement in learning outcomes they achieved.

3.3 Technique of Data Analysis

Data analysis is the process of simplifying data into a form that is easier to read and interpret (Arifin, M.B., Awang Pawi, A.Z., Arafah, B., Kaharuddin (2021). The method to analyze the data must follow the research patterns and variables studied. All students' score gathered were analyzed with statistic descriptive using SPSS application software to verify the findings.

4. Results
4.1 Pre-test and post-test
Table 1. Experimental Class Result

T	No	Description	Pre-test	Post-test
	Accurate grammar and content	Mean	59.2	83.09
	Accurate content, inaccurate grammar	Mean	57.04	80.00
	Inaccurate content and grammar	Mean	52.25	73.09
		Total	168.49	236.18

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able 2. Control Class Result

No	Description	Pre-test	Post-test
Accurate grammar and content	Mean	55.02	59.05
Accurate content, inaccurate grammar	Mean	56.00	60.00
Inaccurate content and grammar	Mean	53.11	61.79
	Total	164.15	180.84

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The results of this research indicate hat: (1) in control class the average pretest score was 54.71 and the average posttest score was 60.28 , (2) in the experimental class the average pretest score was 56, 16 and the average posttest score was 78.72 higher than the average posttest score in control class, (3) the average posttest score of the experimental class > control class, 78.72 > 60.28, means that the experimental class learning outcomes are higher than the control class. In the simple linear regression test with $0,000 < 0.05$ the use of mobile in language learning is more effective.

Based on the findings in Table 1 above, there are significant differences between the pretest and posttest results. In first item, the accurate grammar and content, the average score in pretest was 59.2 and the posttest average scores 83.09. In the second item, the accurate content and inaccurate grammar, pretest was 57.04 and posttest was 80.00. In the third item, inaccurate content and grammar, pretest was 52.25 and posttest was 73.09. The increase in scores on pre-test and post-test was due to mobile-based learning.

4.2 Questionnaire Results

The results of the questionnaire of mobile-assisted learning of English denoted that there was an increase in students' scores in reading subjects. The result of Anova analysis was concluded as shown in table 3. Decision making in a simple linear regression test refers to two things namely:

Comparing the significance value with the probability value of 0.05

1. If the significance value <0.05, it means that the variable X affects the Y variable
2. If the significance value > 0.05, it means that the variable X has no effect on the variable

Table 3. Anova Results

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1513.860	1	1513.860	15.265	.000ᵇ
1	Residual	3768.540	38	99.172		
	Total	5282.400	39			

a. Dependent Variable: reading scores

b. Predictors: (Constant), mobile assisted

Table 4. Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.535ᵃ	.287	.268	9.959

a. Predictors: (Constant), mobile assisted

Based on the table above the magnitude of the correlation value (R value) was 0.535. The determination coefficient (R Square) was 0.287, which means that mobile-assisted learning contributes 28.7% on the increase of students' reading competence.
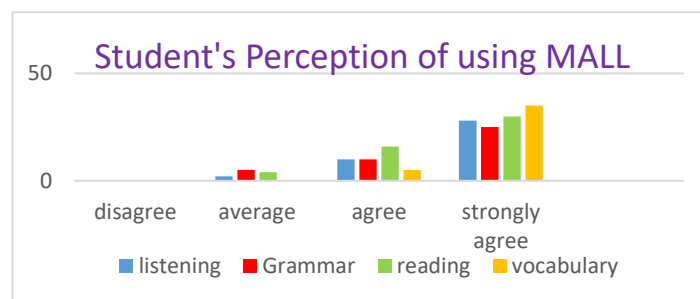
4.3 Interview Results

Chart 1. Students' Perception to using MALL

The information in chart 1 above denotes that none of the 40 students disagree with the MALL merits to improve the students' learning of English. Those who choose the average category is 12.5%, the agree category is 25% and the rest is strongly agree. The graph of the interview results above also confirms that mobile cellphone is very helpful in learning English for the students at University of Musamus, as proved by many researches (Majid, 2009). Similarly, it was also clarified by Guo & Xiaoqing (2009), Lin, C. J., Hwang, G. J., Fu, Q. K., & Cao, Y. H. (2020), Yang, Q. F., Chang, S. C., Hwang, G. J.,

& Zou, D. (2020), Pérez-Paredes, P., Guillamón, C. O., Van de Vyver, J., Meurice, A., Jiménez, P. A., Conole, G., & Hernández, P. S, (2019).

5. Discussion

The three instruments used to get information are strong enough to prove that mobile-based English learning is helpful to improve students' English competence. In accordance with RQ1, MALL has significant effect on students' reading comprehension. In this case, the use of mobile cellphone in learning English contributes 28.7% to the students' score improvement in reading and listening. The study is focused on implementing "The Open Library" application to find the chosen topic by using student's cellphone. In control class the students choose the topic manually without using application and mobile cellphone. Related to the score the students get in experiment group, there is an improvement 28.7% from pretest to posttest. In addition, mobile-based learning does not only improve students' achievement scores but also develop their digital literacy (Blau, I., Shamir-Inbal, T., & Avdiel, O, 2020). Notwithstanding, Sikora, J., Evans, M. D. R., & Kelley, J. (2019) confirm that in digital era it is necessary to enhance skills, such as pedagogical design, cognitive and self-regulation purposes, and cultural literacy support.

The positive impact of mobile-based learning is helping students understand the material and collaborate with their partners (Ali 1 & 2, Mahmood, Anwar, Khan, & Hussain, 2019). This study denotes that MALL can assist them in collaborating such as 1) maximizing the natural process of collaboration among students, 2) creating a learning environment of contextual-and-student-centered, integrated, and has a collaborative atmosphere, 3) appreciating the importance of authenticity, contribution, and experience of student in relation to learning materials and learning processes, 4) providing opportunities for students to be active in the learning process, 5) developing the critical thinking and problem solving skills, 6) encouraging exploration of subject matter that involves various points of view, 7) appreciating the importance of social context for the learning process; 8) fostering relationships of mutual support and mutual respect among students, and between students and teachers, and 9) building enthusiasm for long life education.

In the interview 62,5% students strongly agreed with the mobile-assisted learning to increase their reading scores. In addition, the openlibrary.org platform is potentially developed by the students for their reading comprehension improvement. They try to comprehend the message of the text and answer the questions they are listening based on the text they are reading. Meanwhile, some skills are simultaneously delivered, e. g, reading, grammar, listening, and vocabulary.

Cognitive function is an essential factor in determining the quality of one's life: cognitive abilities or the ability to think optimally is not only needed by young individuals but also mutual people (Suleman, D., Arafah, B., Abbas, H,.Delukman A. 2021).. Even in the elderly, the ability to think will determine the level of dependence on the help of others. The brain is the most critical organ of our body because it controls various bodily functions. Cognitive function is very much dependent on the brain health characterized by the brain's ability to process multiple stimuli from the surrounding environment, including to learn new things, follow intuition, make judgments, language skills, and the ability to remember, (Rouhi & Mohebbi, 2012) (Marsh, E. J., & Rajaram, S, 2019) (Arafat, S., Aljohani, N., Abbasi, R., Hussain, A., & Lytras, M, 2019). The ability of brain may decrease if it rarely receives and processes stimulus, or in other words if we rarely use the mind to think. The brain function will decrease if it rarely processes the stimulus, even more if not used to remember optimally, because it may cause brain function digression in line with the increasing of age. The brain consists of two parts; cerebrum and cerebellum, each function to process stimulus. The mind will work and experience improvement, if all parts of the brain participate in transforming the stimulus. The stimulus will only happen when we are doing activities that encourage us to move actively, search and learn new things in three dimensions in the real world. Reading a text in front of screen to "sharpen

the brain" might have a slight positive effect, but it won't help improve the brain function. This study noted the stimulus given to participants is reading various texts from open-access libraries being installed on mobile cellphone. On each reading, they are ordered to find the central theme or idea, and make conclusion. It aims to train and improve the level of concentration in cognitive because it did in an online open-access library.

Similar with RQ.2, one effort to improve students' cognitive abilities is the selection of appropriate learning media. This study noted that mobile cellphone as compatible medium of current technology will ne helpful for students' learning activities. In more detail, it is shown in this research that students' cognition as the subject of this research shows significant difference scores on reading comprehension skills. Four indicators are assessed, namely 1) fluency, 2) accuracy, 3) pronunciation and 4) intonation (Majid, 2009) (Guo & Xiaoqing, 2009) (Lin, C. J., Hwang, G. J., Fu, Q. K., & Cao, Y. H, 2020) (Yang, Q. F., Chang, S. C., Hwang, G. J., & Zou, D, 2020).

Other opinions reveal that writing or reading helps students to develop their cognitive abilities. By providing a variety of reading topics as training material, students will improve their cognitive abilities, because the processing of new information will increase the size and structure of neurons and the connections between neurons that continue to develop during routine learning. Active brain will reduce the severity of cognitive disorders that are difficult to prevent such as Alzheimer's, and increase the resilience of cognitive function (Blumberg, FC, Deater-Deckard, K., Calvert, SL, Flynn, RM, Green, CS, Arnold, D., & Brooks, P. J, 2019).

In short, MALL's connection with student's cognitive can be illustrated. McDonough (1981) cited in Ampuni, S, (1998) said that one element influential to the level of understanding the texts in foreign language is the cognitive level and reading character. In connection with the reading characters, this research focuses on the reading text material introduced to experimental class, which all related to the English language education. It aims to make easier the students to understand the explicit and implied meaning to make a conclusion. In this case the ability of a participant will be highly tested. Reading comprehension as cognitive work involves a complex set of processes, including processing concepts in memory, making conclusions, and schematizing the essence of reading. There are three main cognitive tasks in the process of reading comprehension. The three tasks are 1) selecting information suitable with the needs, 2) building an internal relationship between one idea with another idea in the reading, and 3) building relationship between the information contained in the reading passage with stated information (Mayer, 1989 as cited in Ampuni, S, 1998). From Mayer's explanation, it can be seen that besides having to actively process the reading being studied, the students must also activate his old knowledge so that he can understand the reading passage. In specific this skill is driven by the brain to process the new information received by sequential way of reading, paying attention, learning, thinking, reasoning and drawing conclusions from a topic. The research also states that during the research process participants take part in optimizing their cognitive work, (Taub, M., Azevedo, R., Rajendran, R., Cloude, E. B., Biswas, G., & Price, M. J, 2019) (Law, K. M., Geng, S., & Li, T, 2019). Referring to Bloom's taxonomy that one of the goals of education is the cognitive domain. Furthermore (Bloom, B. S. ed. et al., 1956) classifies cognitive into six levels: 1) knowledge 2) comprehension 3) application 4) analysis 5) synthesis and 6) evaluation. Every educator should be able to improve the cognitive realm of each student by interpreting the cognitive domain in the form of operational ape words in reading subjects, e.g. explained, identified, showed, named, memorized, noted, and searched. All of the above functional verbs have significant potential in increasing the level of participant understanding in the instructed subject (Soemer: & Schiefele, U, 2019) (del Pilar Jiménez Alarcón & de Vicente-Yague I, 2019) (Halamish, V., & Elbaz, E, 2020).

6. Conclusion

Overall, mobile assisted language learning is potential to improve student's score in reading and listening. Moreover, it is also proven to be able to develop students' cognitive. Interestingly, the research states that the students feel more comfortable, flexible, freely chosen topics. In addition, compared to the conventional learning, mobile-assisted learning allows more opportunities for informal collaboration and interaction between learners. MALL is a unique learning process because learners can access learning materials, directions and applications related to learning materials, anytime and anywhere. This will increase attention on learning material, make learning pervasive, and can enhance learner motivation for lifelong education.

This research implies for the curriculum designers and lecturers to develop the interactive and autonomous learning beyond the classroom context (Saputra, Myartawan, & Saputra, 2019). In addition, this research is needed to investigate in-depth the impact of mobile-based language learning with two skills, writing and speaking. Sung, Y. T., Chang, K. E., & Yang, J. M. (2015) and Moreno, A. I., & Vermeulen, A. (2015) implied that mobile-based learning developed student's speaking ability by using video description application. In contrary, the prior research conducted by Butarbutar, R., Uspayanti, R., Manuhutu, N., & Palangngan, S. T. (2019) asserted an effective way to teach English for the young learner was using a flashcard-based local culture due to young learners are still in cognition growth. It is the best practice to introduce local culture to young learners. As a creative English teacher, besides ability to harmonize technological advances in language learning is required, we must also be able to combine local culture with the learning models students interested in.

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