AUTONOMOUS MOBILE-ASSISTED LANGUAGE LEARNING FOR YOUNG LEARNERS USING DUOLINGO

Nurul Annisa Saraswati*, Syafi'ul Anam, Oikurema Purwati
Universitas Negeri Surabaya, Indonesia

ABSTRACT

Learning English through Mobile-Assisted Language Learning (MALL) platforms has become a demand in English as a Foreign Language (EFL) and English for Second Language (ESL) learners globally, and one of the platforms is Duolingo. This case study was conducted in order to find out the impact of Duolingo, which is assumed to be useful in enhancing self-regulated learning for young learners and the parents' attitude in supporting the learning. This study used a qualitative method in data analysis, and the data were collected through observation and semi-structured interviews of the participant and the parents. The finding of this study revealed that the use of Duolingo could enhance the learner motivation and attitudes in learning English autonomously as well as actively practicing the language in a real situation. The participant showed active engagement in learning English autonomously with Duolingo, and the parents also found the platform to be useful in supporting the participant's learning process. Hence, in this study, learning English through the Duolingo application can support autonomous EFL learning without the barrier of space and time. However, as this research was a small-scale case study, and further research is recommended with a larger scale of participants and other MALL applications.

Keywords: *Autonomous learning; EFL; Learning Motivation; Mobile assisted Language Learning (MALL)*

ABSTRAK

Belajar bahasa Inggris dengan gawai dan aplikasinya telah menjadi tren secara global dalam pembelajaran bahasa Inggris sebagai bahasa asing (EFL) dan bahasa Inggris sebagai bahasa kedua (ESL), dan Duolingo menjadi salah satu contoh aplikasi gawai yang terkenal saat ini. Studi kasus ini dilakukan untuk mengetahui dampak Duolingo sebagai sarana belajar dalam meningkatkan kemampuan bahasa secara mandiri. Penelitian ini mengaplikasikan metode kualitatif untuk analisis data dan pengumpulan data dilakukan melalui observasi dan interview terstruktur pada subjek dan orangtua. Hasil dari penelitian ini menunjukkan bahwa penggunaan aplikasi belajar bahasa Duolingo berguna dalam menambah motivasi belajar secara mandiri dan mempraktekkan apa yang telah dipelajari dalam kehidupan nyata. Peserta menunjukkan keterikatan aktif dalam belajar bahasa Inggris secara mandiri dengan Duolingo dan orangtua dari peserta juga setuju bahwa aplikasi tersebut bermanfaat untuk mendukung proses belajar dari peserta. Karenanya, dalam penelitian ini, mempelajari bahasa Inggris dengan aplikasi Duolingo dapat mendukung pembelajaran bahasa asing secara mandiri tanpa batasan ruang dan waktu. Namun, karena penelitian ini adalah studi kasus berskala kecil, penelitian lebih lanjut diperlukan untuk penelitian dengan peserta berskala besar dan dengan menggunakan aplikasi pembelajaran bahasa secara online lainnya.

***Kata Kunci**: MALL; Motivasi; Pembelajaran Bahasa; Pembelajaran mandiri*

INTRODUCTION

The changing trend of information and communication by integrating technology has made the revolution in teaching and learning a second language. Continuous learning in this technology era requires several important skills such as learning and adapting to the recent innovation, digital literacy, as well as career skills for the user or learner to be able to make the best use of technology in conducting self-regulated learning (Sun, et al., 2017). The teaching and learning activities by integrating technology have become a huge trend especially in applying distance learning or online learning. The development of technology has enabled people to access various language resources online, including learning a new language to embrace English as a *lingua franca*. English as a lingua franca has made society becoming more multilingual (Kirkpatrick, 2011). Recently, society has become increasingly diverse due to globalization, and the demand for acquiring more than one language has increased. The huge growth in diversity contributes to a super-diverse society. Moreover, the essential need to be able to use English as a tool to interact globally has made the language learners attracted to the culture of the target language (Lamb, 2013). This diverse society can also be observed in the school domain where the diversity of the students is visible with the addition of various linguistics which makes the individual multilingual. Multilingual is related to a person's level of language competence. Commanaru and Dewaele (2015) stated that multilingual is the proficiency related to the acquisition of more than one language. There is no clear cut between bilingual and multilingual. Wei (2013) mentions that the common term of multilingual refers to someone who can use two or more languages in conversational interaction. Among multilingual, even if they acquired the same languages in the same community, their language preference might be different because of the difference in their proficiency level in each language.

An individual acquires language input from different sources, settings, and their language preference change depending on the situation that they are in (Larsen-Freeman, 2015). One of the sources of learning to acquire additional language is by learning autonomously using technology. To support learners in acquiring a new language, integrating language learning with technology has shown positive outcomes in target language learning outcomes (Sylven & Sunqvist, 2012). Mobile assisted language learning (MALL) as one of the latest evolutions in technology has innovated the new possibilities in a new way of learning languages. The viewpoint and acceptance of MALL were discovered to be important in affecting the language learners' attitude and learning engagement (Yoo & Han, 2013). MALL is one of the important technologies in enabling the learner to acquire and learn language autonomously. Learner autonomy is divided into two important divisions: 1) the capability to apply self-regulated learning opportunities in a distinct situation, and 2) the willingness to direct oneself into learning in various settings and backgrounds (Stolk et al., 2010).

One of the most popular language-learning apps that can be used autonomously nowadays is Duolingo. Duolingo is a free language learning application that can be accessed over the web and mobile devices. Duolingo uses interactive illustrations, gamified design with point rewards and instructions. Translation from the first language or from English to another language is a crucial

part of this language learning platform. The user can choose many languages and learn more than one new language on it. Before Duolingo gives the learner task in order to be completed, the platform first asked the user if it is the first time the learner is exposed to the language or not. After that, Duolingo gives some questions for the students in the target language to know which level of the language that the student should learn. Inayati et al.'s (2021) study showed that the students expressed high awareness in practicing self-study outside of the classroom setting in order to support what they have been learned in the classroom. Having self-awareness in learning English is essential for the students to establish long-term language learning activities. The challenges that the students face are in terms of technical factors like limited study resources and assessing the learning activity. By using Duolingo, the learners can start to learn the language on their gadgets interactively and can explore various learning materials featured in the application.

In Duolingo, there are various kinds of English exercises. For example, one exercise demands learners to translate a sentence from the second language (L2) to their first language (L1). The sentence served in L2 needs to be translated to L1, and the learners are expected to do it by rearranging the jumbled words into a correct translation. Another exercise is a practice to match the word meaning from L1 and to L2 or vice versa. In addition, the other exercises involve a listening activity that asks the learner to listen to the word or sentence and type it on the application. Duolingo also gives the learners speaking exercises that ask them to say words or sentences that are written on the screen. The opportunity for the learner to try to pronounce words and to be given immediate feedback is really important in second language learning especially for young learners as they may have not learned the second language phonemic rules extensively.

Based on the example of the Duolingo application mentioned previously, unifying a technology with second language learning instruction can enrich the possibilities in making various learning activities that can accommodate different language learning preferences among the students (Hwang, Hsu, & Hsieh, 2019). A study conducted by Fehr et al. (2012) in vocabulary learning supported by computer-assisted language learning (CALL) showed that teaching English vocabulary by using CALL can improve the students' vocabulary scores. It was found that using computer-adaptive technology can be a convenient means in introducing the learner to words in order to increase students' vocabulary learning and mastery of a second language.

Furthermore, mobile-assisted language learning (MALL), as a part of CALL, is considered to be reliable language learning aid by the users as it can improve the language skill mainly vocabulary and increase learner engagement in the learning process. In the study conducted for young learners, the mobile application provides chances for the participants to learn English enjoyably and can be accessed on their own. The language learning applications were wrapped in an attractive fun game with several levels of difficulty and there were rewards if the user got the right answer. MALL applications helped the English teaching beyond the classroom for you learners (Chik, 2014) Mobile device game-based learning not only can increase the student's performance in learning in a fun way but also can raise the student's motivation as it generates new experiences to enhance the student's interest during the learning process (Chen, Liu, & Huang, 2019). MALL is one of the convincing tools

that is supporting self-regulating learning in a way that the learners can access the learning material and exercises based on the subject or topic that is interesting for them. In recent studies, MALL is proved to be a favorable way of teaching and learning the target language, and the learners' attitude towards it holds a vital role in its practice (Metruk, 2019).

Mobile technology allows learners to download various learning resources as well as gives them a sense of control over their learning choices with the support of the instructor and another fellow learner. Given the freedom to choose what they want to learn based on their interest will give the learner the autonomy and possibility to learn the language in an enjoyable way as there is less pressure as they can also learn outside the school. In addition, it can also enhance students' motivation and confidence which results in a positive language learning attitude and achievement (Hao, Lee, and Sim, 2019). The application of technology for media in supporting language learning such as video, flashcards, PowerPoint, and other picture-related media enhance the students' engagement in learning English in the classroom (Sudiran, 2017). Vocabulary teaching by using gamification such as the game computer of snake and ladder was found to be useful in building up students' vocabulary comprehension for students (Fitriana & Maro, 2018). Learning language using mobile technology enable the learners to expand their learning process outside of the classroom and can be accessed everywhere without the limitation of space and time (Looi et al., 2016) compared to traditional learning activity which only depends on face-to-face classroom meeting and the material source is only the printed book. İn integrating the technology by using laptops and smartphones, Duolingo is one of the popular language-learning applications or platforms that can be accessed by the learner of the target language. A study about the effect of a mobile application for young learners to improve speaking skills showed that mobile technology helped in improving young learners' English-speaking skills because it helped the young learners become more engaged in learning English, decrease anxiety, and made the learning process more fun (Sun, et al., 2017).

Regarding the Duolingo application as a currently popular MALL applications, three elements are provided by the application to help learners master the second language: (1) Spaced repetition, (2) interleaving, and (3) automatic feedback. Interleaving is multiple variations of tasks that are provided by Duolingo. Interleaving tasks will support the learner to get a better result in vocabulary learning for instance in collocation where the learner can draw a connection between words rather than learn the word individually. Interleaving is accomplished through mixing the exercises in each session of level. In automatic feedback, Duolingo supports the learning element in two ways. First, it informs the learner if the answer is correct or not, and it also provided a simple explanation if the answer is incorrect. Strambi and Bouvet (2003) mention that knowing their mistakes will help the learners to be able to identify the error aspect of their interlanguage which can let them look for assistance from other sources.

However, it is important to understand that Duolingo is heavily related to the activity of translating from the source language to the target language. In order to use this platform, the learner is translating sentences that contain words that are used frequently. Focusing on the form instruction of translation results better in language acquisition compared to meaning-focused instruction (Laufer & Girsai,

2008). Duolingo teaches 3000 to 5000 lexemes in each course of each level. Each of the courses consists of five levels that can help the students strengthen their mastery of the target language. There are various studies about using technology in learning English, however, there were only a few pieces of research that discussed MALL that is applicable for autonomous learning by young learners. Therefore, this study tried to discover important learning factors of autonomous English learning using MALL applications, especially for young learners. This study specifically aimed to reveal the factors which make young learners willing to spend more time learning English by using Duolingo. To achieve the study's objectives, three research questions are formulated below.

1. What are the factors that motivate a young learner to learn English using Duolingo?
2. How does the learner perceive the use of Duolingo as a language learning platform?
3. How do parents involve themselves in their child's autonomous English language learning using Duolingo?

METHOD

This research employed a qualitative method. The qualitative research was applied to get detailed information related to the topic being studied (Cresswell, 2016), in this case, the autonomous learning of the participant using the Duolingo application. The data collection, observation, and interviews of the participant and the parents were done in natural settings. This study was being done by using a case study as it applied to get in-depth and various sources of data collection about a certain phenomenon. The participant of this study is a 9-year-old student and both of the parents to get additional data about the participant. The participant was chosen using convenience sampling. This sampling technique was used because the participant was available and convenient to be part of the study (Byrne, 2001). The participant was in 3rd grade and exposed to English at school as one of the school subjects. The participant has been learning English for 2 years and sometimes communicates using expressions in English with parents by mixing it with the participant's first language, Indonesian. The participant already accessed the language learning platform Duolingo for over 3 months over the pandemic situation which required the participant to do online school. The parents introduced Duolingo app for the participant to make the best use of using gadgets. They wanted the participant to learn the language in a fun way to enhance their English performance in school, which for now have been done online.

This study was designed to find out how the participant learns English independently using mobile-assisted language learning of Duolingo and the parent's behavior towards the participant's performance in learning the target language. Moreover, data collection is also being done to know the participant's and parents' perception of the importance of learning English with the online platform of Duolingo as well as the importance and participant's expectations in learning the target language of English as lingua franca. The participant was observed for 6 meetings in total which were scheduled when it was convenient for the participant and the parents.

The researcher took field notes in form of an observation sheet in every meeting when the participant accessed Duolingo. To get adequate data about the participant's performance and the application of Duolingo, a semi-structured interview was also implemented with the participant and the participant's parents. The qualitative data were analyzed using an interactive model by conducting data condensation, data display, conclusion drawing, and verification (Miles, Huberman, & Saldana, 2014). The interviews were recorded and then being transcribed. To check the interrater reliability, after the recording was transcribed, the transcription was handed to another rater. After that process, the result of the analysis was compared and presented.

FINDINGS

Here is detailed information about the results of the observations and interviews which answer each of the research questions of this study.

Factors That Motivate the Learner To Learn Using Duolingo

The data of the interviews showed that the participant used the Duolingo language learning app frequently as he stated that Duolingo has a lot of fun features such as mini-stories, interactive flashcards with moving pictures, and other interesting features. The participant expressed that accessing Duolingo was enjoyable because he could see various interactive pictures, listen to funny stories that he could share with his parents, and find various exercises. The interviews also had shown some factors that motivated the participant in accessing Duolingo. Because the participant is still young, parental guidance was still needed for limiting the mobile device screen time. As the parents allowed the child to access Duolingo, it made the participant excited because he could access Duolingo which seemed like a game to him. The participant also liked it that whenever he got the right answers in the Duolingo exercises, the app gave him stars which would help and motivate him to get to a higher level of the exercises. Moreover, the participant also mentioned that some words and phrases that he found while using Duolingo were also taught in his school's English lesson which made him eager to use Duolingo more as it helped him comprehend his school work. Some of the words were fruit vocabulary, such as "apple", and "orange", and phrases in greeting, such as "good morning" and "how are you?". During the data collection, the participant did not only access Duolingo on weekdays but also accessed it on the weekend. The parents mentioned, "On the weekend, my child only wants to play and does not want to have anything to do with learning, but he is okay to open Duolingo. He does not realize that it is part of learning language as well". Usually, the participant did not want to study during the weekend, but with Duolingo, the participant still wanted to learn. In process of learning by using Duolingo, sometimes the participant also asked his parents if he did not understand the exercise or the meaning of a word. The immediate feedback from the parents was beneficial for the participant in increasing his English skills because being able to apply it in real life would strengthen his lexical input. The compliment from the parents also increased the participant's motivation to do more in English learning using the app. The teaching and learning of English at home was observed to be useful for the child's second language

development especially in Covid-19 pandemic time as the participant spends most of the time at home.

Learner's Perception of Learning English Using Duolingo

The participant perceived Duolingo as more like a game rather than a learning app. The participant accessed Duolingo because he wanted to have fun, and was not fully aware that doing the Duolingo activities could help him in developing his English language acquisition. When accessing Duolingo, the participant answered the exercises by recalling what he has been learned and already understood. Then, he also applied his knowledge to answer the questions while using the newly acquired L2 knowledge. Since the beginning of learning using Duolingo, the participant actively sought help from the parents if he found some problems in completing the exercises as well as making sure that his comprehension of the material being taught was correct. The interview results from the parents showed that they were always trying to help the participant to get a clear idea about what was being learned and accommodate the participant with immediate feedback. They were also supportive of the participant's English learning process through the Duolingo platform. Although learning by using Duolingo can be done independently, the parents still believed that monitoring their child's learning process as well as the child's screen time was important. The parents also helped the participant to practice the lesson that had been learned to enhance the second language input by practicing it in real-life situations. The main reason that the parents encouraged the participant to learn a new language using Duolingo was that the participant spent a lot of time using the gadget in which they believed that Duolingo could make the best use of that screen time.

Parents' Involvement in Their Child's English Language Learning Activity

Parents have a crucial role in the development of the participant' learning, especially in making progress with his language learning. Based on the result of the observation, the parents mostly guide the participant in accessing the Duolingo platform because he has not had his gadget. The very first time the participant used Duolingo, he had no idea how to access it. Parents' involvement in accessing Duolingo makes the learning process meaningful as the participant did not only interact with the app but also has active interactions with his parents. The observation also showed that the parents usually take turns in helping the participant access the app. At the very first time when the parents introduced Duolingo to the participant, the parents guided the participant all the way through in using the app. For now, the parents usually helped the participant when he wanted to move from one type of exercise to another, such as from answering vocabulary tasks and moving to the reading parts. In addition, the parents also tried to build a suitable environment for the participant to get used to English. For instance, the participant has some posters about vocabulary in English and storybooks in English. When the participant watched television, the parents accommodated him with TV channels that used English. The interview showed that the parents were not excelled in English when they were still in school as English was being taught. None of the parents had experience in using English language applications before Duolingo. Both of the parents acquired English through the time

when they were still students and were sometimes exposed to it in their working environments. The parents revealed that they were aware that having adequate English skills would benefit their child in the long run. Therefore, they tried to introduce English to the participant at a young age to make him acquire the language easier and get used to it better.

In their household, although Indonesian was used most of the time, the parents still tried to use simple daily English expressions in conversing with the participant. For the participant to strengthen his English output through Duolingo, the parents also try to use vocabularies or expressions that the participant had been learned through Duolingo. By doing this, the parents were hoping that the child would have a lot of lexical inputs and could express them in real-life situations. Before using Duolingo, the parents have tried to introduce English at home to the child by buying the child's storybook in English to read for bedtime. The parents used to read the story to the participant then explained the content of the story using the participant's mother tongue. However, the parents found the method to be ineffective because the child did not produce any expression in English. In addition, when asking about the story, the parents and the participant used Indonesian. That was one of the reasons why the parents tried to find a way in supporting their child to develop his English at home in a way that the participant was interested in without the burden of having the task to study. Although the participant already got English lessons at school, the parents felt the need for him to have more English input outside of the school setting. In Indonesia, English lessons are usually taught only once or twice a week. By having more chances to get English input outside of the classroom, the chance to acquire the language is increased. Thus, the parents actively supported the participant in learning English using Duolingo by helping him move from one type of task to another and try to recall the English inputs that have been learned.

DISCUSSION

The result of the study found that the participant spent a lot of time learning a language using the Duolingo platform as it was perceived as more fun and interactive for it served the user with pictures and interactive activities. The visual activity that is served by the application improves the participant's motivation in learning as it is full of pictures and colors. Teaching English vocabulary using technology can improve the learner's motivation to learn (Wang & Young, 2014). This is in line with Chen et al.'s (2018) study which found that the usage of English vocabulary learning using application makes the learners' learning performance better, and it also impacts higher learning motivation than those students who are not. In addition, it also makes the students engage more in independent learning or self-regulated learning. The participant also perceived that learning English through Duolingo was accessible and challenging. Therefore, teaching and learning English with the help of technology can improve the learning outcome of the target language. One of the reasons the participant kept up with answering the exercises from Duolingo was because Duolingo gathered all the participant's points and performances and turned them into ranks. This example of learning language through gamification was found to be beneficial for English learners, especially in vocabulary acquisition and the increase of the learner's will to study (Fitriana &

Maro, 2018). In addition, several aspects motivate people to learn a second language such as travel purpose, friendship, knowledge, and other reasons for language learning that are shared by the learner for their motivation to get in contact and identification with the speaker of the target language (Noels, Pelletier, Clement, & Vallerand, 2003). The result from the interview showed that the participant had motivation in learning English because he wanted to be able to communicate with parents or in the future talk with people who speak the target language.

The participant already used Duolingo to learn English often without the parents asking him. As for the participant's perception, English was considered fun to learn. This is the example of intrinsic motivation as the learner sees it as an enjoyable activity whereas extrinsic motivation is the behavior that is being done to achieve the language learning goals (Li & Han, 2018). In using Duolingo to learn English, the participant often accessed it even without his parents' commands which proved that mobile-assisted language learning can be an effective tool to make improvements in learners' attitude and learning engagement (Yoo & Han, 2013).

When accessing Duolingo, the participant answered the exercises by recalling what has been learned from the previous questions and explanations. Next, he continued further as he already understood the meaning of the words, phrases, or sentences, then applied his knowledge to answer the questions as well as used it in real-life situations. The process of acknowledging new knowledge, comprehending the information, then applying it in line with Bloom's taxonomy (Bloom, Krathwol, & Masia, 1984). The participant in this study showed the lower level of thinking that was shown by the act of recalling the information, being able to explain it, and using it in particular situations. This lower level can be found familiar in a beginner-level learner. As the participant was still a young learner, being able to retain this lower level of thinking skill is an advantage for him.

Parental supports played a significant role in a child's language learning process and outcome. As in this study, supports from the parents in introducing Duolingo to the participant and helping him in learning and practicing what has been learned in real-life situations showed to be beneficial for encouraging the participant to practice the language and engage in the English learning process. Wigfield et al. (2006) mentioned several parental circumstances affecting children's behavior in learning a second language in school achievement and motivation: (1) family and community characteristics (parental education level and profession); (2) parents' attitudes (parental association in supporting the children in academic aspect such as in school); (3) parenting style (ways that the parents raise the children, value of the child's achievement in the school); parents and children relationship and belief (parents' viewpoint of the children's proficiency, parents' outlook about the children's success in future). The study conducted by Goldenberg et al. (2008) showed that parents can support their children's second language acquisition by guiding their children's academic studies. For example, the parents can help by providing children with books and practicing the target language with the children to enhance the children's language input and make the children familiar with the target language being learned as the children are exposed to it as often as possible. These theories show that the parental factor affects the children's development in second language acquisition just as what has been shown in the

findings where the parents support the participant in learning English autonomously using Duolingo.

CONCLUSION

In conclusion, this study found that integrating mobile-assisted language learning in autonomous learning can improve learners' motivation in language learning. The participant perceived that learning a language through the Duolingo app on a smartphone is a fun and game-like activity. In addition, learning using this integrated technology was revealed to be useful in increasing language learning engagement as the learner focused on the learning which resulted in positive lexical input. For the young learners, the learning process using technology and the internet should be done under parental guidance to get the best use of it, in addition to the parents' actions in supporting self-integrated learning outside of the classroom. As this study was a case study of a single participant; therefore, the result of this study might be different if it carries out in different settings, with different participants, or with any differences in other aspects. Thus, for future research, it suggested conducting research that involves a bigger population in other age groups and another language app that can use to support the learning process.

REFERENCES

Bloom, B. S., Krathwol, D. R., & Masia, B. B. (1984). *Bloom taxonomy of educational objectives.* Pearson Education.

Byrne, M. (2001). Sampling for qualitative research. *AORN Journal, 73*(2), 494-494. Retrieved from https://link.gale.com/apps/doc/A70871448/AONE?u=anon~b4288e3f&sid=googleScholar&xid=99ead073

Chen, C. M., Liu, H., & Huang, H. B. (2019). Effects of a mobile game-based English vocabulary learning app on learners' perceptions and learning performance: A case study of Taiwanese EFL learners. *ReCall, 31*(2), 170-188. https://doi.org/10.1017/S0958344018000228

Chik, A. (2014). English language teaching apps: Positioning parents and young learners. *Changing English, 21*(3), 252-260. https://doi.org/10.1080/1358684X.2014.929285

Comanaru, R. S., & Dewaele, J. M. (2015). A bright future for interdisciplinary multilingualism research. *International Journal of Multilingualism, 12*(4), 404-418. https://doi.org/10.1080/14790718.2015.1071016

Cresswell, J. W. (2016). *Qualitative inquiry and research design: Choosing among five approaches.* Sage publications.

DeKeyser, R. (2008). 11 implicit and explicit language. *The handbook of second language acquisition*, 313.

Fehr, C. N., Davidson, M. L., Graves, M. F., Sales, G. C., Seipel, B., & Sekhran-Sharma, S. (2012). The effects of individualized, online vocabulary instruction on picture vocabulary scores: An efficacy study. *Computer Assisted Language Learning, 25*(1), 87-102. https://doi.org/10.1080/09588221.2011.586640

Fitriana, D., & Maro, R. K. (2018). Teaching vocabulary through snake and ladder in the tenth grade of SMA Muhammadiyah 1 Malang. *Celtic: A Journal of Culture. English Language Teaching, Literature and Linguistics, 3*(1). https://doi.org/10.22219/celtic.v3i1.7861

Goldenberg, C., Rueda, R. S., & August, D. (2008). *Sociocultural Contexts and Literacy Development.* New York: Routledge.

Hao, Y., Lee, K. S., Chen, S. T., & Sim, S. C. (2019). An evaluative study of a mobile application for middle school students struggling with English vocabulary learning. *Computers in Human Behavior, 95*, 208-216. https://doi.org/10.1016/j.chb.2018.10.013

Hwang, G. J., Hsu, T. C., & Hsieh, Y. H. (2019). Impacts of different smartphone caption/subtitle mechanisms on English listening performance and perceptions of students with different learning styles. *International Journal of Human-Computer Interaction, 35*(4-5), 333-344. https://doi.org/10.1080/10447318.2018.1543091

Inayati, N., Karifianto, D. M., & Jarum, J. (2021). Student awareness, attitude, affordances, and challenges in online autonomous English language learning. *Bahasa dan Seni: Jurnal Bahasa, Sastra, Seni, dan Pengajarannya, 49*(1), 28-39. https://dx.doi.org/10.17977/um015v49i12021p028

Kirkpatrick, A. (2011). English as an Asian lingua franca and the multilingual model of ELT. *Language Teaching, 44*(2), 212-224. https://doi.org/10.1017/S0261444810000145

Lamb, M. (2013). Your mum and dad can't teach you! : Constraints on agency among rural learners of English in the developing world. *Journal of Multilingual and Multicultural Development, 31*(1), 14-29. https://doi.org/10.1080/01434632.2012.697467

Larsen-Freeman, D. (2015). Saying what we mean: Making a case for language acquisition to become language development. *Language Teaching, 48*(4), 491-505. https://doi.org/10.1017/S0261444814000019

Laufer, B., & Girsai, N. (2008). Form-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. *Applied Linguistics, 29*(4), 649-716. https://doi.org/10.1093/applin/amn018

Li, Y., & Han, Y. G. (2018). *Young learners' motivation for learning English.* Routledge.

Looi, C. K., Lim, K. F., Pang, J., Koh, A. L., Seow, P., Sun, D., & Soloway, E. (2016). *Bridging formal and informal learning with the use of mobile technology.* Singapore: Springer.

Metruk, R. (2021). The call of the MALL: The use of smartphones in higher education. *Educacion, Plotica y Valore, 6*(3). Retrieved from: https://www.researchgate.net/publication/332780975_The_Call_of_the_MALL_the_Use_of_Smartphones_in_Higher_Education_A_Literature_Review

Miles, M., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.).

Noels, K. A., Pelletier, L. G., Clement, R., & Vallerand, R. J. (2003). Why are you learning a second language? Motivational orientations and self-determination theory. *Language Learning, 53*(1), 33-64. https://doi.org/10.1111/0023-8333.00111

Reinders, H., & Darasawang, P. (2012). *Diversity in learner support.* Cambridge: Cambridge University Press.

Stolk, J., Martello, R., Somerville, M., & Geddes, J. (2010). Engineering students' definitions of and responses to self-directed learning. *International Journal of Engineering Education, 26*(4), 900. doi:10.18260/1-2--3943

Strambi, A., & Bouvet E, J. (2003). Flexibility and Interaction at a Distance: A Mixed-Mode Environment for Language Learning. *Language Learning and Technology, 7*(3), 81-102. doi:10125/25215

Sudiran, S. (2017). The implementation of media in teaching English for young learners (EYL). *Celtic: A Journal of Culture, English Language Teaching, Literature and Linguistics, 1*(1), 1-15. https://doi.org/10.22219/celtic.v1i1.4654

Sun, Y., & Dong, Q. (2004). An experiment on supporting children's English vocabulary learning in multimedia context. *Computer Assisted Language Learning, 17*(2), 131-147. https://doi.org/10.1080/0958822042000334217

Sun, Z., Lin, C. H., You, J., Shen, H. J., Qi, S., & Luo, L. (2017). Improving the English-speaking skills of young learners through mobile social networking. *Computer assisted language learning, 30*(3-4), 304-324.

Sylven, L. K., & Sundqvist, P. (2012). Gaming as extramural English L2 learning and L2 proficiency among young learners. *ReCALL, 24*(3), 302-321. https://doi.org/10.1017/S095834401200016X

Trilling, B., & Fadel, C. (2009). *21st Century Skills, Enhanced Edition: Learning for Life in Our Times.* John Wiley & Sons.

Wei, L. (2013). Conceptual and methodological issues in bilingualism and multilingualism research. *The handbook of bilingualism and multilingualism, 2*, 26-53. Retrieved from https://books.google.co.id/books?hl=en&lr=&id=b3PYAwAAQBAJ&oi=fnd&pg=PA26&dq=Wei,+L.+(2013).+Conceptual+and+methodological+issues+in+bilingualism+and+multilingualism+research&ots=GUpuBoVJa2&sig=OKwE4rAbE5dkge0pwfh_wVyfI08&redir_esc=y#v=onepage&q&f=false

Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). Development of achievement motivation. *Handbook of child psychology, 3*.

Yashima, T. (2002). Willingness to communicate in second language: The Japanese EFL context. *The Modern Language Journal, 86*(1), 54-66. https://doi.org/10.1111/1540-4781.00136

Yoo, S. J., & Han, S. H. (2013). The effect of the attitude towards e-learning: The employees' intention to use e-learning in the workplace. *International Journal on E-Learning, 12*(4), 425-438. Retrieved October 23, 2021, from https://www.learntechlib.org/primary/p/38480/.