EXPLORING UNDERGRADUATE STUDENTS' PERCEPTION TOWARD THE USE OF DUOLINGO IN LEARNING ENGLISH

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Abstract

Purpose of the study: This study was aimed at investigating the students' attitudes and perception toward the use of Duolingo in Learning English

Methodology: A mixed-method design (quantitative-qualitative) was employed in this study. 60 undergraduate students of Syiah Kuala University participated in this study. They were chosen by using purposive sampling techniques. In obtaining the data, questionnaires and interviews were implemented in this study. In the question area, there were 16 close-ended questions adapted from Yang (2012a) and Garcia Botero and Questier (2016) designed using the Likert scale method. Besides, 3 interview questions were asked to 10 chosen students to deeply reveal their perception in using the Duolingo.

Main Findings: The result indicated that most students have a positive perception of the use of Duolingo in learning English (Mean=4.0). This study has found that students view Duolingo as a useful and helpful application and a motivational tool in learning English. One of the more significant findings to emerge from this study is the inconsistency between the students' perception and their acts in using the application. Their positive view on the use of Duolingo was contrary to the fact that they are lacking time in using the application.

Applications of this study: This study is intended to shed some lights on how the students perceive their experiences in learning English after using the Duolingo as a part of their out of class engagement.

Novelty/Originality of this study: The students' motivation to learn English outside of the classroom can be enhanced through the use of the Duolingo in mobile phones.

Keywords: Attitude, Perception, Duolingo, Mobile-assisted Language Learning.

INTRODUCTION

English as an internationally recognized language, with more than 1.5 billion speakers around the world, has become the biggest and the largest lingua franca in the world (Melitz, 2016). People from different countries can speak across nations by using the language. Besides, Harmer (2015) predicted that English would remain a dominant world language and a vital means of communication for many business people, academicians, tourists, and other groups of citizens of any nationalities in the world. It leads to other languages in every aspect of life.

In university life, English is still one of the important subjects to be taught. In Syiah Kuala University, English is one of Mata Kuliah Umum (MKU) subjects which is taught in semester 1. One class can consist of 45 students. The big size class does not seem ideal for a language class. The students said that the big class inhibits them from having proper time to practice English in the classroom. The class becomes monotonous and the students are bored. Therefore, students need a solution to overcome their problems. One of their efforts is by learning English through a tablet or mobile phone. Besides, students and teachers, today are anticipated to use various ICT available for learning (Febriani & Hafifah, 2019; Tolstoukhova, et al., 2019).

Technology has been used as a technique to improve education and teaching methods (Ahmed, 2016; Al-Mashaadani & Al-Rawe, 2018; Nami, 2020). Progression in mobile communication technology will push more educational environments into interactive communities (Barati & Zolhavarieh, 2012). The rapid development of mobile technology has extended the learning opportunities inside and outside of the classroom. One of the ways is by using the application on the mobile phone. A preliminary survey was carried out to seek the common application used by the students of Syiah Kuala University when they are learning English out of the classroom. The survey reported that many undergraduate students installed and used Duolingo as the application to learn foreign languages. This result, thus, drove the researchers' attention to seek to examine those students' attitudes and perceptions after using the Duolingo in learning English.

LITERATURE REVIEW

Gamification

The gamification concept has a broad scope and encompasses various contexts such as education and training (Inchamnan, 2018). Gamification is the application of game-based elements and game design techniques in non-game context (Boyinbode, 2018; Bagunaid, et al., 2019; Duy, 2018; Inchamnan, 2019; Ryder & Machajewski, 2017; Zakaria & Rosli, 2019). The use of gamification in a learning environment is seen as an important additional tool in one's learning experience (Mohammad, et al., 2019). In gamified learning experiences, students are responsible to evaluate their learning progress. It, thus, can promote independent learning among students consequently, motivating them to be more confident in learning (Baharudin & Yunus, 2018).

A joyful environment will make students enjoy and feel pleasant to learn; they will enjoy their time in the learning process. (AlTameemy, 2017). Games that embody educational objectives are considered to make learning more enjoyable, interesting, fun, and more learner-centered thus making it more effective (Tahir & Wang, 2017). Ryder and Machajweski (2017) inserted that games can bring motivational benefits to students. Learner motivation remains a primary concern of game-based mobile learning initiatives, with developers and educators alike trialing different approaches of introducing game elements into the learning process (Pechenkina, et al., 2017). Also, gamified learning can extend students' opportunities to learn anywhere and anytime (Lin, et al., 2016; So, 2014).

Duolingo

Self-study is important in language learning and Duolingo is a useful language application that can provide learners with practical and systematic steps to learn a new language on their own (Nushi & Eqbali, 2017). Duolingo is a free application (used on various platforms, such as computers, mobile phones, and others) which offers courses in over 23 languages and has about 200 million registered users worldwide now. It was introduced in 2012 by Louis von Ahn and Severin Hacker from Cambridge Mellon University for learning and acquiring a foreign or second language that learners wish to learn (Jašková, 2014). Duolingo provides a language learning process using a mobile learning application with a gamification system that can be accessed by everyone from any gender and ages, at any time and any place (Mehtälä, 2015). In the Duolingo system, the four English skills are taught, i.e. listening skills, reading skills, speaking skills, and writing skills. The leaners can access the tremendous amount of materials from the provider and can choose any levels they like based on the pre-test they were taking when they registered in Duolingo (Nushi & Eqbali, 2017).

Originally, Duolingo aims to provide a free and enjoyable global language learning platform and was intended to be enriched by the translations of its learners (Duy, 2018). One of the important features in Duolingo is Badge. Badge, characterized as a requirement to obtain goals, make progress, and achieve results in a learning environment, is a representation of an accomplishment that is visual and available online (Gibson, et al., 2013). The main purpose of the badges is used to lift the motivation of learners when they study (Huynh, et al., 2018).

To use the application, the user needs to install the Duolingo application first, for Android users, Duolingo can be found in Google Play Store while IOS users can find it in Apple Store. The differences between Duolingo in Google Store and Apple store was on their rating in 2018, the Duolingo in IOS took over as top 3 application in education category which placed in the 3rd place with 4.8 stars rating from the IOS users while Duolingo in Android took over the 7th place in education category which get 4.7 stars rating from the Android users.

Table 1: Duolingo features (Liang, 2018)

Category	Quality, well-designed, and productive features
Curriculum Learning content is provided or not, topics, objectives, accuracy, content activities.	Learning content is provided. 55 units/topics, 21 vocabulary units and 34 other language skills, keywords, lessons, quizzes, translating, word matching, reading and recording sentences, word sentence, dictation for practice.
Pedagogy Learning activities, levels of difficulty, assessment and feedback, gamification, personalized learning, autonomous learning, Social aspects, interactions, contexts.	Improves another language skills on top of learning vocabulary , one level, and lesson becomes more advanced as the learner's progress, health bar, rewards (e.g.,gems, XP, badges), personal profile page to save progress, access language club and unlocked units, personalized progress repand reminders through email and phone screen notification, placement test, quizzes to unlock units, promotes self-directed learning, learned lessons can be accessed unlimitedly, Uses pictures related to everyday life, leaderboard: see the rank among friends, language club: need approval or even invitation code to join a club.

App Design	Lessons are accessible without an Internet, send feedback or requests through the link "Sending Feedback" in the app, online help center for Q&A, Choice of over 30 languages including English Remove ads and access quizzes off-line prolong playtime when purchasing tools with gems.
Multimedia, online/offline in-device and online support, interface languages, technical errors, ads, app transactions, in-app purchases, shop.	
General App Description	A game-style design with rewards and punishment 4+ out of 5 ratings in the iTunes and 4.7 out of 5 ratings in Google Play, 17775 (iTunes) rating (number of reviews not stated), more than 2 million users worldwide, 83% user satisfaction, The latest version at the date of data analysis was March 2018, Weekly updates on average App in a suite of apps for knowledge content, total number of users not stated.
Style, version and updates, ratings and number of users, stand-alone or app in a suite of apps.	

In Table 1, Liang (2018) presented her comprehensive evaluation of the Duolingo features in 4 categories, curriculum, pedagogy, application design, and general application description. In the curriculum category, the Duolingo provided the learning content with 55 units/topics with over 150 lessons, 21 vocabulary units, and 34 other language skills. The keywords are provided together with quizzes and lessons in each unit. In the pedagogy aspect, detailed lesson content is presented in the form of units that include learning activities such as translating, word matching, reading and recording sentences, a language club and a leader board, and immediate feedback. The users can learn the language skills in the Duolingo integrated. The user can choose their level once they start the application, and the level becomes more advanced as they progress. They can save their progress in their profile in the application, and the progress is sent to email and pop up as a notification on the phone screen. Using this application allows students to do autonomous learning. Duolingo can be accessed online and offline. The students can open the application and continue their progress in offline mode. They can proceed with any feedback should they want by sending or requesting feedback through the link 'sending feedback' in the application.

The exercises in Duolingo, among others, include:

1. Translation exercise, which the learner needs to translate some phrases, words, or sentences into English or Bahasa Indonesia or reverse. For example, the learner was asked to translate the sentence "*dia bukan seorang pelayan, dia seorang koki*" into English, which the learner needs to choose the right word from a few words given to form the right sentence.

2. Matching exercise, which the learner matched a photo given with some word available. For example, the learner was asked about "*Anak Perempuan*" in English and the learners need to choose which of the pictures show "*Anak Perempuan*".

3. Listening exercise, which the learner heard a phrase or word in English and they have to type it correctly. For example in the application you will hear some sentences spoken by the system such as "they wear shirts" and you need to write down what it's spoken in the answer column.

4. Speaking exercise, which the learner heard some word or phrase in English and they have to say it correctly. For examples, the system orders the learner to said "the newspaper" then the learner should say "*the newspaper*" if the system find out the learner said the word with correct spelling and pronunciation then it counted as the right answer.

Previous Studies

As the Duolingo becomes a widely-used English learning application, there are many pieces of studies investigating the use of this application in language learning. Garcia Botero, et al. (2018) in their recent study revealed the inconsistencies between what students think about the app and what they do with it. The result of the questionnaires suggest that Duolingo can encourage out-of-class learning through fun activities, but the interviews reveal a lack of sustained motivation, self-monitoring, and self-management reflected in the low usage of the application. In their other writing, Garcia Botero and Questier (2016) added that self-directed learning in Mobile Assisted Language Learning (MALL) requires modeling and mentoring.

A recent study by Liang (2018) reported that most users (about 83%) consider Duolingo to be an effective language learning application because they could learn through playing different games and activities, which they commented were fun and easy to use. de Castro, et al. (2016) found that the Duolingo application contributed to increase the

vocabulary, improve pronunciation, and simple grammatical. It has also motivated the students to practice using the foreign language daily. Yang (2012b) explored the attitudes and self-efficacy of 58 second-year college students in Taiwan who had minimal experience of using mobile devices form-learning. The results note that students demonstrated a positive attitude toward mobile learning. Munday (2016) in his French class survey found that the students appear to find Duolingo an easy-to-use, helpful, and enjoyable app to practice French. However, Yang (2012b) and Munday (2016) have only focused on the use of mobile learning or Duolingo as the mandatory learning platform. The use of the application was under control. Meanwhile, Liang (2018) explored user views by calculating the ratings of the app. The users were not under control but it did not take into account the particular characteristics/demographics information of the users. While some studies have been carried out on the students' perception toward the use of Duolingo in learning languages, there have been few empirical investigations that seek to explore the students' perception based on uncontrolled use of the Duolingo as an application in learning English.

METHODOLOGY

This study was conducted using qualitative and quantitative research analysis. Qualitative research is characterized by its aims, which is related to understanding some aspects of social life, and its methods that (in general) generate words, rather than numbers, as data for analysis (Hancock, 2002). According to Creswell and Creswell (2018), mixed-method research is an approach integrating two forms of data, qualitative and quantitative, which can provide a more complete understanding of a research problem than either approach alone. This method is also called the discovery method because this method can be found and developed by various new science and technology.

This research was aimed at analyzing the students' attitudes and perceptions on the use of Duolingo to learn the English language as it could be a tool for students to increase their English language skills. Therefore, the result of this study was obtained by collecting the information from the students using a questionnaire and analyzed through a qualitative method to find out the means of Duolingo for students who used it in learning the English language.

The result was presented in a descriptive analysis method divided into numerical data for questionnaires and descriptive data for the interview. According to Muhson (2006), descriptive statistical analysis is a statistic used to analyze data by describing or portraying collected data as it is without intending to make conclusions that apply to general or generalization. This analysis is only in the form of accumulation of basic data in description forms only in the sense of not looking for or explaining mutual relations, testing hypotheses, making predictions, or making conclusions.

The subjects for this research were chosen by using purposive sampling. 60 undergraduate students of Syiah Kuala University participated in this study. They were chosen because they use Duolingo as a language learning application outside of the English classroom.

For this study, the writer gathered the data using questionnaires and interviews. The questionnaires were adapted from Yang (2012a), and Garcia Botero and Questier (2016). There were 17 questions in the questionnaire using the Likert-scale method which each statement answered from strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). The questionnaires were translated into Bahasa Indonesia to make it simple for the subjects in understanding the questions and in providing the answer. The questionnaires were distributed by using Google Forms to every student at Syiah Kuala University. To obtain valid answers from the subjects that fulfilled the criteria, the participants had to write down their faculty and year of being the student at the faculty. The questionnaire took a week to be distributed and 2 weeks to be analyzed by the researcher.

Fisher (2012, p. 27) states that the "use of questionnaires alone is not a reliable source of information about student use of software and should be avoided as a single source of information". Therefore, to deeply investigate the students' perception of the use of Duolingo in learning English, the researcher conducted a semi-structured interview. 10 participants were randomly chosen. There were 3 questions posed to the participants. The semi-structured interview was carried out in Bahasa Indonesia. The interviews with the participants were recorded using a mobile phone to avoid inaccuracy in collecting and analyzing the data. Then the recording was transcribed into written form.

RESULTS

The data were analyzed according to the themes of the questionnaire items and interview questions. The items were grouped into 3 themes i.e. usefulness, motivational tool, and language skill practice items.

Usefulness

Table 2: Usefulness

Items	N	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	M	SD
Duolingo is simple to use	60	1 (1.6)	0	7 (11.6)	36 (60)	16 (26.7)	4.1	.73

Items	N						M	SD
Duolingo is easy to access	60	0	0	8 (13.3)	38 (63.3)	13 (21.6)	4.0	.71
Duolingo is a helpful tool for learning English	60	1 (1.6)	0	25 (41.7)	21 (35)	19 (31.7)	3.8	.86
Duolingo features are interesting and variative	60	0	0	9 (15)	34 (56.7)	17 (28.3)	4.1	.65
I can use Duolingo independently without others' help	60	1 (1.6)	0	13 (21.7)	36 (60)	10 (16.7)	3.9	.73

Table 2 depicts the mean of the highest variables i.e. 4.1 which represent item number1 and 5. In item no 1, 36 students responded and 16 students strongly agreed to the statement, 7 students reported neutral, and only 1 student strongly disagreed. Meanwhile, in item no 5, 34 students agreed with the statement, and 17 students gave strongly agreed responses. Also, 9 students reported their neutral stance. The lowest mean of 3.8 represents item number 4, 25 students responded neutrally while 21 students gave their 'agree' to the statement. The remaining 19 students strongly agreed with only 1 strongly disagreeing.

The highest mean of this theme is that Duolingo is a simple application that offers interesting and variative features. This finding was supported by the students' answers in the interview. Most participants (8) indicated that Duolingo is very easy and useful. It can help them learn the languages wherever and whenever at their ease.

The application is easy to use. If we open it, we immediately understand the translation. Because I've used it for a long time. The point is, it's easy, it can be anywhere, it can be directly on the laptop maybe, on the mobile phone, so, yes, easy. [R3]

In my opinion, the Duolingo application is simple and easy to use. It can be freely downloaded from the Google Play store. The contents are organized, from basic to advanced. We can find many things there. However, I think it has a disadvantage for me. When we want to learn one skill discreetly, we cannot find the separate materials for the skill as all the skills are integrated. [R10]

Motivational Tool

Table 3: Motivational tool

Items	N	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	M	SD
Duolingo encourages me to spend more time learning English outside of the classroom	60	0	0	5 (8.3)	33 (55)	22 (36.7)	4.3	.61
Duolingo can bring many opportunities for me to learn English	60	3 (5)	0	14 (23.3)	33 (55)	10 16.6)	3.8	.90
Duolingo encourages me to learn English independently	60	1 (1.6)	0	2 (3.3)	37 (61.7)	20 (33.3)	4.3	.68
Duolingo can help me improve my English	60	0	0	2 (3.3)	39 65)	19 (31.6)	4.3	.52
Duolingo make English learning more enjoyable and interesting	60	1 (1.6)	0	5 (8.3)	39 (65)	15 (25)	4.1	.69

It is more fun to practice English using Duolingo in the smartphone than in the classroom	60	1 (1.6)	0	7 11.7)	36 (60)	16 (26.7)	4.1	.73

Table 3 visualizes the highest mean of this theme representing item number 7, 8, and 9. 22 students responded strongly to the statement saying that Duolingo encouraged them to spend more time learning English outside of the classroom., while 33 students answered in agreement, and 5 students were neutral. Also, 39 students agreed, and 39 students gave them a 'strongly agree' answer to the statement saying that Duolingo helps them improve their English. Meanwhile, 37 students agreed and 20 students strongly agreed that Duolingo encourages them to learn English independently. The lowest mean is 3.8 representing item number 2. 33 students agreed that Duolingo brings many opportunities for them to learn English while 10 students responded strongly agree, and 14 students gave their neutral answer to this statement. Unfortunately, 3 students strongly disagreed with this statement.

The highest means of this theme illustrate the students' positive perception that Duolingo can motivate them in learning English (M=4.1). The students were interested to use Duolingo because Duolingo can encourage them to spend more time learning English outside the classroom independently. It, thus, helped them to improve their English. These results were linear with their interview answers. All students stated that they were happy to use Duolingo to learn English as this application is fun. They also said that they enjoyed using Duolingo a lot when learning English as it is easy to be accessed.

Right from the start, I was given an option from the easy first. From easy to hard. So, From the beginning, it was very helpful. Other than that, we learn how easy way to learn. And then gradually increasing from the easy to the more difficult level. So, our abilities slowly increase. [R1]

I am very happy because with Duolingo I am more frequent to learn and also improve my English skills with certain levels and that makes it even more interesting. [R2]

I'm glad of course because I also often use this Duolingo application to teach children at English courses and from the response of the people, the people are happy to learn from Duolingo. Especially for children, right? We have fun in learning because Duolingo may not be boring compared to other learning methods. So, I think there is, how is learning, we give a question. Nice, exciting. So, certainly, it's fun, cool. [R3]

The students were also asked if any obstacles may prevent them from using Duolingo frequently. Most of the students (N=5) stated that they did not frequently use Duolingo to learn English because when they opened their phones, the social media temptations were stronger than the Duolingo. Once they started opening the Duolingo the notification from the social media popped up on the mobile screen, they started to alter their focus from the Duolingo to the social media. As a result, they closed the Duolingo. It happened again and again once they started learning using Duolingo.

There are several factors. For example, the application is a learning application, sometimes, and it is on the phone, sometimes we get distracted with other applications. For example, Instagram apps or people's chats. So, sometimes people get distracted by the activities on other social media. So, less focused on learning. That's it. [R1]

Some students (N=3) also reported that they did not have enough time to open the Duolingo though it was already installed on their mobile phone. Their activities made them have limited time to fully focus on the mobile phone. As the learning process needs focus and attention, the students argued that they have very limited time to sit and focus on opening the Duolingo application.

Then, the factor that makes me lazy maybe because of time. I'm not too lazy to open an application that has a very high educational value like this. It's only because I rarely have time so I rarely use Duolingo. [R2]

The other students said that a lot of advertisements made them reluctant to open the application, and the features do not meet with his learning expectations. When the student wants to learn to listen solely, he cannot find separated listening material in the Duolingo application. The listening materials are integrated with other skill materials.

There is, maybe the factor that makes us lazy to open Duolingo is not laziness, but it's more like. More like what? If we learn something, sometimes Duolingo doesn't have more specific material, like that. For example, we want to find out about grammar, specifically grammar, right, Duolingo doesn't have any specific material about it. So sometimes you go to, look for other media, go to google or go to, we will search, browse to other places right. There are some limitations that Duolingo doesn't have in it. The content is quite perfect but there is some content, there are some things from Duolingo that we have to look for in other media, for example, like Google or You-tube that may be easier. Because sometimes we don't have time to open the Duolingo application. [R3]

Language Skill Practice Items

Table 4: Language skill practice items

Items	N	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	M	SD
I can increase my vocabularies using Duolingo	60	1 (1.6)	0	5 (8.3)	26 (43.3)	18 (30)	4.1	.71
I can improve listening using Duolingo	60	1 (1.6)	0	4 (6.7)	32 (53.3)	23 (38.3)	4.2	.73
I can improve reading using Duolingo	60	0	0	1 (1.6)	38 (63.3)	21 (35)	4.3	.51
I can improve writing using Duolingo	60	0	0	1 (1.6)	38 (63.3)	21 (35)	4.3	.51
I can practice translating words and sentences using Duolingo	60	1 (1.6)	0	3	36 (60)	20 (33.3)	4.3	.69
I can learn grammar or language structure using Duolingo	60	1 (1.6)	0	4 (6.7)	38 (63.3)	17 (28.3)	4.1	.69

Table 4 shows that the highest variable means representing the items number 13, 14, and 15. Similarly, 38 students responded that Duolingo can improve both reading and writing skills. Also, 21 students strongly agreed that Duolingo helps them increase their skills in reading and writing. 36 students gave them an 'agree' answer for item number15 while the remaining 20 students strongly agreed to this. The lowest mean is 41. Representing item number 6 and 17. 26 students responded and agreed to item number 6. Also, 18 students gave strongly agreed answers while the remaining 5 students were neutral. Similarly, 17 students strongly agreed that they can learn grammar using this Duolingo while 38 students agreed to this. The remaining 4 students gave their neutral answer to item number 17.

These findings reveal that most students have positive perceptions (M=4.2) toward the Duolingo as a tool to improve their English skills. This was supported by the answers to the interview session.

In my opinion, using Duolingo can help the users to master foreign vocabularies which are rarely used in daily life. It assists the user with the pictures so we can match the words with the pictures. I think this is a smart application [R8].

Some students said that the Duolingo can assist them in mastering vocabularies. The contents are comprehensive as it levels the users from basic to advance. Meanwhile, one student declared that he was dissatisfied with the way the Duolingo classified the learning material. When the user wanted to learn to listen, there could not be found the separate listening material as the materials are integrated with the other skills.

DISCUSSION

From the participants' standpoints, the Duolingo application was positively perceived as a useful application for learning English. It is in line with Nushi and Eqbali (2017) who support that Duolingo is a useful language application that can provide learners with practical and systematic steps to learn a new language on their own. Moreover, the popularity of smartphones has increased the ownership of the device significantly. By facilitating anytime anyplace access to a wide range of learning resources and educational applications, mobile devices encourage a situated self-regulated computer-mediated learning experience and lend themselves well to constructivist approaches to teaching and learning (Nami, 2020). This brings to a phenomenon that everything is done everywhere by using mobile phones including learning English. The application enables the students to interact with educational resources while they are away from their

normal place of learning; mobile learning systems make it easier for learners to study when and where they want through mobile technology and devices to transport their learning material (Lin, et al., 2016).

Duolingo has the 'badges' element in the platform. The function of the element is important to lift the motivation of learners when they study. The findings reveal that Duolingo was positively perceived as a motivational tool. The students reported that they felt happy, fun, and were encouraged and motivated to use Duolingo in learning English outside of the classroom. This can be understood as Duolingo is a gamification product, which means that they use game elements to create enjoyment points in the learning environment (Huynh, et al., 2018). Ryder and Machajewski (2017) also agree that gamification brings motivational benefits; it encourages an incremental, rather than an entity theory of intelligence.

Although the students have a positive view of Duolingo, they do not use it daily. They argued that once they opened the application, they were distracted by the social media application on their mobile phone. They also explained that the busy situations inside and outside the academic life made them lacking time to access the Duolingo. This finding is consistent with Garcia Botero and Questier (2016) and Garcia Botero, et al. (2018). This result might be explained by the fact that the students are using the Duolingo out-of-the class engagement. The students cannot manage their time to do independent learning outside of the classroom. Garcia Botero and Questier (2016) in their previous research agreed that self-directed learning in using mobile-assisted language learning such as Duolingo cannot be done alone; it requires modeling and mentoring, which is why a teacher or tutor remains as an important aspect in learning by using Mobile-Assisted Language Learning. The rapid development of technology cannot replace the teacher position. The finding also revealed that when the students are outside of the classroom, their motivation to learn becomes low. They do not have any push to learn. They do not have any goals to achieve under specific conditions. It highlighted the importance of a context in which students are encouraged to take responsibility for their learning (Garcia Botero, et al., 2018). The students need to sustain their motivation both in and outside of the classroom. Thus, the interference of both extrinsic and internal motivation in learning English cannot be ruled out.

In Duolingo, the lessons are categorized into small sets which are called skills by part of speech or lesson vocabulary meaning (Huynh, et al., 2018). The students can adjust their competence to the level needed. The students can improve their language skills using Duolingo. However, language skill development cannot be separated from the essence of language as a means of communication. Although technology does affect the language learning process, it does not provide the silver bullet for that process (Nushi & Eqbali, 2017). Since Duolingo uses direct translation in teaching the users foreign languages, this application works on the level of words and phrases. It, thus, cannot deliver the communicative purpose of language. The students can learn the skills, but the application might fail to equip them with the communicative competences used at the conversational level.

CONCLUSION

In this investigation, the aim was to explore the students' perception toward the use of the Duolingo as an application in learning English. This study has found that students positively perceive that Duolingo is a useful and helpful application. It brings motivational benefits for the students in learning language skills. The findings of this investigation complement those of earlier studies (Garcia Botero & Questier, 2016; Garcia Botero, et al., 2018). The rapid development of technology has extended students' opportunities to have language classrooms in their hands. It is vital for learning that learners seek more knowledge than the one provided by teachers in the classroom (AlTameemi, 2017). However, technology cannot ultimately replace the essence of interaction and communicative purposes of language use in classrooms and societies. It is the responsibility of both teachers and students to use technology wisely.

LIMITATION AND STUDY FORWARD

The study was limited by the small sample size and the lack of deep investigation of the students' motives in using the application. Notwithstanding the limitations, the study suggests that further research should focus on determining the correlation between perception and motivation in using Duolingo as an application in learning English.

AUTHORS CONTRIBUTION

Nurul Inayah managed the manuscript; wrote introduction and methodology, presented all the statistical analysis into the result section, provided and revised the discussion and conclusion section. Qismullah Yusuf wrote for the literature review, proofread, and reviewed the final manuscript, and Nurul Fibula conducted all statistical analyses.

REFERENCES

1. Ahmed, H. B. E. (2016). Duolingo as a bilingual learning app: A case study. *Arab World English Journal*, *7*(2), 255 – 267. https://doi.org/10.24093/awej/vol7no2.17
2. Al-Mashaadani, M. A., & Al-Rawe, M. F. (2018). The future role of mobile learning and smartphones application in Iraqi private universities. *Smart Learning Environment*, 5(28), 1-11. https://doi.org/10.1186/s40561-018-0077-7

3. AlTameemy, F. (2017). Mobile phones for teaching and learning: implementation and students' teachers' attitudes. *Journal of Educational Technology System*, *45*(3), 436-451. https://doi.org/10.1177/0047239516659754

4. Bagunaid, W., A., Meccawy, M., Allinjawi, A., & Meccawy, Z. (2019). The impact of gamification on self-assessment for English language learners in Saudi Arabia. *International Scholarly and Scientific Research and Innovation*, *13*(2), 117-122.

5. Baharudin, N. A. A. &Yunus, M. M. (2018). GRAMMODO: A platform in learning grammar among ESL learners in Malaysia. In *Innovation for Sustainable Growth* (pp. 106-108). International Invention and Innovative Competition (InIIC).

6. Barati, M., & Zolhavarieh, S. (2012). Mobile learning and multi mobile service in higher education. *International Journal of Educational Technology and Information*, *2*(4), 297-299. https://doi.org/10.7763/IJIET.2012.V2.135

7. Boyinbode, O. (2018). Development of a gamification based English vocabulary mobile learning system. *International Journal of Computer Science and Mobile Computing*, *7*(8), 183-191.

8. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage.

9. de Castro, A. P, da Hora Macedo, S., & Bastos, H. P. P. (2016). Duolingo: An experience in English teaching. *Journal of Educational and Instructional Studies in the World*, *6*(4), 59–63.

10. Duy, H. P. (2018). *Understanding the effect of game in an educational environment using game refinement measures.* Japan Advanced Institute of Science and Technology.

11. Febriani, G., & Hafifah, G. N. (2019). Teachers' beliefs and practices of using YouTube in the EFL context in Muhammadiyah senior high schools of Surabaya. *Humanities & Social Sciences Reviews, 7*(3), 389-397. https://doi.org/10.18510/hssr.2019.7357

12. Fisher, R. (2012). Diversity in learner usage patterns. In G. Stockwell (Ed.), *Computer-assisted language learning: diversity in research and practice* (pp. 14-32). Cambridge University Press. https://doi.org/10.1017/CBO9781139060981.002

13. Garcia Botero, G., & Questier, F. (2016). What students think and what they do in a mobile-assisted language learning context: new insights for self-directed language learning in higher education. *CALL Communities and Culture? Short Papers from EUROCALL 2016*, 150–154. https://doi.org/10.14705/rpnet.2016.eurocall2016.553

14. García Botero, G., Questier, F, & Zhu, C (2018). Self-directed language learning in a mobile-assisted, out-of-class context: do students walk the talk? *Computer Assisted Language Learning*, *31*(1), 71-97. https://doi.org/10.1080/09588221.2018.1485707

15. Gibson, D., Ostashewski, N., Flintoff, K., Grant, S., & Knight, E. (2013). Digital badges in education. *Education and Information Technologies*, *20*(2), 403–410. https://doi.org/10.1007/s10639-013-9291-7

16. Hancock, B. (2002). *An introduction to qualitative research.* Trent Focus Group.

17. Harmer, J. (2015). *The practice of English language teaching*. Pearson/Longman.

18. Huynh, D., Zuo, L., Lida, H. (2018). Analyzing gamification of Duolingo with a focus on its structure. In R. Bottino, et al. (Eds)., *GALA* (pp 268-277). Springer International Publishing. https://doi.org/10.1007/978-3-319-50182-6_24

19. Inchamnan, W. (2018). Therapeutic strategy in gamification and game-based learning for elderly people in Thailand. *Humanities and Social Sciences Review*, *6*(1), 44-52. https://doi.org/10.18510/hssr.2018.618

20. Inchamnan, W. (2019). Gamification design process for the aging society in Thailand. *Humanities and Social Sciences Review, 7*(1), 47-54. https://doi.org/10.18510/hssr.2019.716

21. Jašková, V. (2014). *Duolingo as a new language-learning website and its contribution to e-learning education.* (Bachelor's thesis). Masaryk University, Brno.

22. Liang, L. (2018). *Exploring language learning with mobile technology: A qualitative content analysis of vocabulary learning apps for ESL learners in Canada*. The University of Ontario.

23. Lin, H., Wang, Y., & Li, C. (2016). Assessing mobile learning system success. *International Journal of Information and Educational Technology*, *6*(7), 576-579. https://doi.org/10.7763/IJIET.2016.V6.754

24. Mehtälä, H. (2015). *The affordances of Duolingo for mobile-assisted language learning: A sociocultural and ecological perspective*. (Master's thesis). University of Oulu, Oulu.

25. Melitz, J. (2016). English as a global language. In V. Ginsburgh & S. Weber (Eds)., *The Palgrave Handbook of Economics and Language* (pp. 583-615). Palgrave Macmillan. https://doi.org/10.1007/978-1-137-32505-1_21

26. Mohammad, A. F. K., Zubir, N., Z., Mohamamd, M., & Yunus, M. M. (2019). Benefits and challenges of using game-based formative assessment among undergraduate students. *Humanities and Social Sciences Reviews*, *7*(4), 203-213. https://doi.org/10.18510/hssr.2019.7426

27. Muhson, A. (2006). *Teknik Analisis kuantitatif* [Quantitative analysis technique]. Universitas Negeri Yogyakarta.

28. Munday, P. (2016). The case for using Duolingo as a part of the language classroom experiences. *RIED, 19*(1), 83-101. https://doi.org/10.5944/ried.19.1.14581

29. Nami, F. (2020). Educational smartphone apps for language learning in higher education: Students' choices and perceptions. *Australasian Journal of Educational Technology*, *36*(4), 82-95. https://doi.org/10.14742/ajet.5350

30. Nushi, M., & Eqbali, M. H. (2017). Duolingo: A mobile application to assist second language learning (App Review). *Teaching English with Technology*, *17*(1), 89–98.

31. Pechenkina, E., Laurence, D., Oates, G., Eldridge, D., & Hunter, D. (2017). Using a gamified mobile app to increase students' engagement, retention, and academic achievement. *International Journal of Educational Technology in Higher Education, 14*(31), 1-12. https://doi.org/10.1186/s41239-017-0069-7

32. Ryder, R & Machajewski, S. (2017). The UIC German game app for the enhancement of foreign language learning: Case Study. *International Journal of Educational Technology*, *4*(1), 1-16.

33. So, S. W. W. (2014). Mobile learning: Topography and research. *International Journal of Educational Technology and Information, 4*(4), 340-344. https://doi.org/10.7763/IJIET.2014.V4.426

34. Tahir, R. & Wang, A. I. (2017). State of the art in Game-Based Learning: Dimensions for evaluating educational games. In *European Conference on Games Based Learning* (pp 641-650). Sonning Common, Academic Conferences International Limited.

35. Tolstoukhova, I. V., Kryucheva, Y. V., Iakobiuk, L. I., & Kulikova, S. V. (2019). The use of mobile technology in the professional education of students. *Humanities & Social Sciences Reviews*, *7*(4), 899-905. https://doi.org/10.18510/hssr.2019.74120

36. Yang, X. (2012a). Attitude and motivation in L2 learning among um master students. *International Journal of Management and Sustainability*, *1*(1), 13–22.

37. Yang, S. (2012b). Exploring college students' attitudes and self-efficacy of mobile learning. *The Turkish Online Journal of Educational Technology*, *11*(4), 148-154.

38. Zakaria, Z., & Rosli, D. B. (2019). Adaption of the Gamification Hexad player types and cognitive awareness in an engineering student. *Humanities and Social Sciences Reviews*, *7*(5), 626-638. https://doi.org/10.18510/hssr.2019.7572