Exploring undergraduate EFL students' perceptions on the use of Duolingo application in enhancing vocabulary

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Abstract

This study aims to explore undergraduate students' perceptions on the use of Duolingo application in learning English language vocabulary. A mixed-methods study was used; data were collected through a questionnaire and a semi-structured interview. 90 students from the English department at Sabratha University participated in the study. The results indicate that students are willing and ambitious to use Duolingo application to learn a language and particularly vocabulary as it is easy, convenient and effective in an encouraging way that can motivate learning. Their reaction towards the application was overall positive and Duolingo can promote learning and developing vocabulary, but there are some limitations. However, there is no significant difference between students' academic level and their perception toward Duolingo application. Language learning applications are great tools to improve knowledge of a new language thus, it is recommended to encourage language learners of different levels to use Duolingo.

1. Introduction

Today technology plays a vital role in learning and teaching. AlTameemi (2017) believes that technology is developing fast and this has increased students' opportunities to take responsibility of self-learning. Learning a language requires various approaches and techniques, and education today focuses a great deal on technology to cope with the rapid development and change. Applications that assist in learning the language skills are beneficial.

In recent years, educational games have progressively aided learning. A lot of research has pointed out that games have a great impact on learning which offers a fun learning atmosphere , and encourages creative use of the language being learnt (Owen et al 2019; Chen, 2005).

Among many applications provided today, Duolingo is an application used on smart devices that offers learners with a different learning experience. It combines both learning and playing by involving learners in a game-form language learning device that is created and used online ((http://Duolingo.com).

Research aims

The current research aims to identify student's perception towards the use of Duolingo application in improving English language vocabulary. It also points out whether students have different perceptions towards the application according to their academic year/level. The study focuses on these two questions:

1. What is undergraduate students' perception toward the use of Duolingo application in enhancing English language vocabulary?

2. Does academic level/year influence students' perceptions towards the use of Duolingo application in enhancing English language vocabulary?

2. Literature Review

2.1 Vocabulary

Vocabulary is an important aspect of learning any language. It consists of learning the spelling, meaning and usage of the word. According to Richards and Renandya (2002), Vocabulary is considered a core component of language proficiency and shows how learners can use the language whether it is spoken or written. Learners use certain strategies to extent their vocabulary to be able to make use of language learning opportunities.

The importance of vocabulary learning cannot be overstressed, it requires hard work and persistence. Some learners may face some difficulty. According to Ma (2007), the reasons for learners facing difficulty is because most of them memorize vocabulary by writing and reading repetitively; learn vocabulary without any techniques; don't review the vocabulary learned frequently and a do limited reading of publications, newspapers and magazines.

The role of education level on vocabulary learning is notable due to the fact that learners should have more vocabulary as their level progresses. As mentioned by Lei (2018), according to the Education Ministry in China (2007) for college English teaching level, the basic requirement is 4795 words and 700 phrases, and the requirement at a higher level demands 6395 words and 1200 phrases whereas, the premier requirement is 7675 words and 1870 phrases.

The vast development of technology and smart devices offer numerous updated learning applications. These applications play a beneficial role in learning in general and language learning in particular.

2.2 Duolingo

Duolingo is a popular application for language learning, with over than 500 million users, it can be downloaded for free on different devices such as mobile phones, laptops and tablets. Duolingo provides language courses in many languages, for instance, English, German, Italian and Spanish. The users of the application can practice vocabulary, pronunciation and

grammar and it is considered an application with gamification characteristics for language learning (Aulia, Wahjuningsih, and Andayani, 2020; Duolingo.com, 2023).

There is also a special feature termed 'Duolingo available for school', the teacher can check on students' learning and progress and give them activities for homework (Stringer, 2016). Learners usually have the readiness to learn through the use of smart phone applications due to accessibility and convenience. These devices aid learners to expand their vocabulary and encourage self-regulated learning (Lei, 2018).

2.3 Advantages and disadvantages of using Duolingo application

There is a number of benefits towards the use of the Duolingo application for language learners; it can help improve language skills, motivate learners to learn the language and be entertaining at the same time (Astarilla, L.2018). The Duolingo application is an interesting tool that helps to improve vocabulary understanding, and speeds up the process of learning English vocabulary (Jaelani, and Sutari, 2021). This application is chosen by many language learners, principally beginners (Husnut, 2021).

On the other hand, there are some disadvantages of using Duolingo application; that is, it is impractical to use it in the offline mode, and the learners are displeased with the advertisements that pop up during their practice. Another disadvantage, there are some issues that arise while using the application which may be fixed and updated in the future to make it a more enjoyable experience (Astarilla, 2018). Moreover, Duolingo does not display the user with clear explanation when wrong answers are presented (Tiara, Handrianto and Rahman, 2021). Nevertheless, it is still recommended that the application is used for learning.

3. Methodology

3.1 Instruments

The questionnaire was adapted from Muddin (2018) and Permatasari, and Aryani, (2023). It was a closed-ended questionnaire which included 26 items divided into five categories: easiness, usefulness, effectiveness, attitude and motivation. In addition, semi-structured interview with some students was also coducted to validate the findings from the questionnaire and to get a deeper understanding about their experience with Duolingo.

3.2 Participants

This research was conducted on undergraduate students from the Arts and Education College, Sabratha University. The population of the study were all 179 students from the English Department during the academic year 2022-2023. The questionnaire was created using google forms and the link was distributed through google classroom. All levels were included from first to fourth year to see if their perceptions are different according to the academic year/ level. The participants of the current research are 90 students 75.6% females and 24.4% males. They were divided throughout the years as follows (first year 48.9%, second year 16.7%, third year 20% and fourth year at 14.4%). Their ages ranged from 18-24 years.

3.3 Participants of the interview

Three students were randomly selected, by using the list of participants of the questionnaire, to take part in the interview. They were asked open-ended questions in regards to the Duolingo application and their experience and perception towards it.

Table 1 *Participants of the interview*

Abbreviations for the participants of the interview	Period of using the Duolingo Application	Gender
1 S1	Few weeks	Female
2 S2	Years	Female
3 S3	Over than one year	Male

3.4 Procedure

The research was conducted during the academic year 2022-2023. The students were asked to download the Duolingo application and use it for at least one month. After that, the students were given a questionnaire to fill in through google forms.

4. Findings and Discussion

4.1 The questionnaire

The questionnaire included 26 points divided into five categories answered according to a five-point likert scale namely, strongly agree, agree, neutral, disagree, and strongly disagree. The results from the questionnaire can be seen in the tables below:

1. The first four points were under the simplicity of the Duolingo application. It is shown in (table 2) that students strongly agree that they learn better when the learning is presented in a fun way. Furthermore, when the application is easy to use it encourages more learning.

Table 2: *Easiness of using Duolingo Application (simplicity)*

Easiness of using Duolingo Application (simplicity)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
I am interested in learning English when using Duolingo because it makes learning new vocabulary easier.	38.9%	45.6%	10%	3.3%	2.2%	100%
In my opinion, I am able to learn vocabulary better when it is presented in a fun way.	52.2%	36.7%	7.8%	2.2%	1.1%	100%
Duolingo makes understanding and practicing vocabulary more difficult for me.	17.8%	10%	14.4%	44.4%	13.3	100%
Duolingo is simple to use and	30%	45.6%	15.6%	6.7%	2.2%	100%

that encourages me to use it
more to learn new vocabulary.

2. The second category that is illustrated in (table 3) is the usefulness of learning the language through Duolingo. Students were asked about the practicality and convenience of the application. The majority of students (17.8%) strongly agree and 62.2% agree that Duolingo encouraged them to guess the meaning of new words and use them in their daily lives. Moreover, Duolingo offers students a chance to be more involved in learning, while some students believe that using the application is time- consuming when you are fully engaged. This is in line with Yana's (2021) study that shows even though students perceive the application to be encouraging, motivating and interesting, however, they also noted it is too colorful and there is a lot of word repetition.

Table 3: *Usefulness of learning vocabulary through Duolingo (practicality-convenience)*

Usefulness of learning the language through Duolingo (practicality-convenience)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Duolingo is not useful for learning vocabulary.	6.7%	10%	10%	45.6%	27.8%	100%
Duolingo encourages me to guess the meaning of new vocabulary.	17.8%	62.2%	10%	7.8%	2.2%	100%
I cannot express my opinion about what I am learning, while using Duolingo.	6.7%	18.9%	35.6%	34.4%	4.4%	100%
Duolingo is time consuming.	4.4%	23.3%	27.8%	33.3%	11.1%	100%
Learning through Duolingo offers me the chance to be more involved in learning.	20%	56.7%	18.9%	3.3%	1.1%	100%
Learning English by using Duolingo allows me to use the new vocabulary I learn in my daily life.	30%	57.8%	10%	1.1%	1.1%	100%

3. Effectiveness was the third category that included six points. Students were asked if they learned new vocabulary through the use of Duolingo and whether it helped in developing the other language skills. The majority of students consider the application effective for developing the language skills which require vocabulary knowledge. They were consecutively in order from highest to lowest including agreeing and strongly agreeing; speaking 88.9%, writing 82.2%, and then reading with 71.1%. Furthermore, a large number of students indicate that they spend more time learning when using Duolingo and they can develop self-learning due to the ability to measure progress. (Table 4).

Table 4. *Effectiveness*

Effectiveness: After using Duolingo….	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
I am able to use new vocabulary when speaking.	35.6%	53.3%	7.8%	2.2%	1.1%	100%
I can use more new vocabulary when writing.	30%	52.2%	11.1%	3.3%	3.3%	100%
I understand better when reading different texts.	26.7%	44.4%	21.1%	4.4%	3.3%	100%
I can communicate more with my classmates outside the classroom.	5.6%	32.2%	34.4%	10%	17.8%	100%
I spend more time learning the language.	26.7%	45.6%	21.1%	4.4%	2.2%	100%
I can develop self-learning skills because I am able to measure my progress.	21.1%	55.6%	17.8%	3.3%	2.2%	100%

4. Table 5 illustrates that most students have a positive attitude towards Duolingo as it helps them practice the language while feeling confident using the vocabulary they learned. More than 70% of the students either disagree or strongly disagree that they feel bored when using the application. On the other hand, some students believe that there are other applications that help increase vocabulary learning more than Duolingo. In fact, 43.3% of the students consider these applications may be more useful than Duolingo.

Table 5. *Attitude towards the application*

Attitude towards the application	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
I am more confident in the classroom when using vocabulary after using the application.	20%	44.4%	32.1%	3.3%	1.1%	100%
I think Duolingo helps to practice my language.	34.4%	44.4%	13.3%	5.6%	2.2%	100%
There are other applications that are more useful than Duolingo.	13.3%	30%	41.1%	13.3%	2.2%	100%
I feel learning through Duolingo is boring and tedious.	4.4%	7.8%	16.7%	53.3%	17.8%	100%

5. Using Duolingo motivates more than 70 % of the students to learn the English language especially when they can choose the suitable time to learn according to their schedule. Moreover, the attractive appearance of the application motivates the students to use it more often inside the classroom but not necessarily outside the classroom (table 6).

Table 6. *Motivation*

| Motivation	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Duolingo can motivate me to learn English.	21.1%	54.4%	20%	3.3%	1.1%	100%
Choosing the suitable time for me to learn vocabulary with Duolingo, motivates me to learn more.	21.1%	56.7%	16.7%	3.3%	2.2%	100%
The appearance is attractive and interesting which motivates me to use it more.	14.4%	48.9%	26.7%	6.7%	3.3%	100%
I feel motivated to practice the language through Duolingo outside the classroom with friends and family.	5.6%	32.2%	34.4%	10%	17.8%	100%

4.2 Students' academic level/year

The results show that there is no significant difference in enhancing vocabulary among students based on their academic level/year. The results only show a small difference. For example, (table 7) shows that first year students generally perceive that the Duolingo application helps them improve their vocabulary and therefore, helps them in reading more than the other years/levels.

Table 7 *Improved reading*
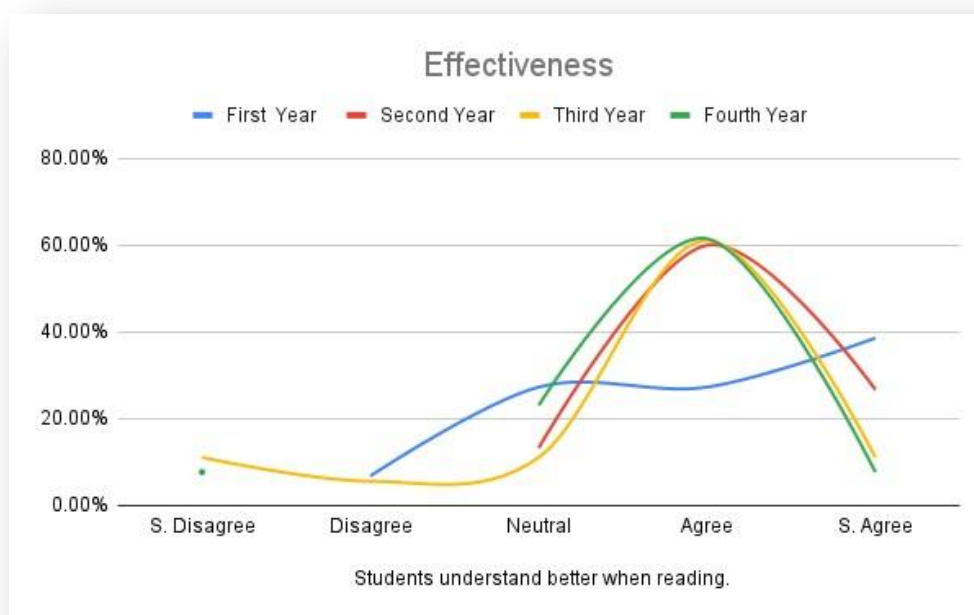
However, table 8 indicates that the higher the level/year of the students is, the more they agree that the ability to choose the appropriate time that Duolingo offers, and the more they are motivated to use it further and consequently, learn more. These results are inconsistent with the findings of Lei (2018) that indicated the higher the level of students, the more they gain vocabulary and therefore can influence students' perception towards vocabulary learning.

Table 8 *Choosing the suitable time, motivates learning.*
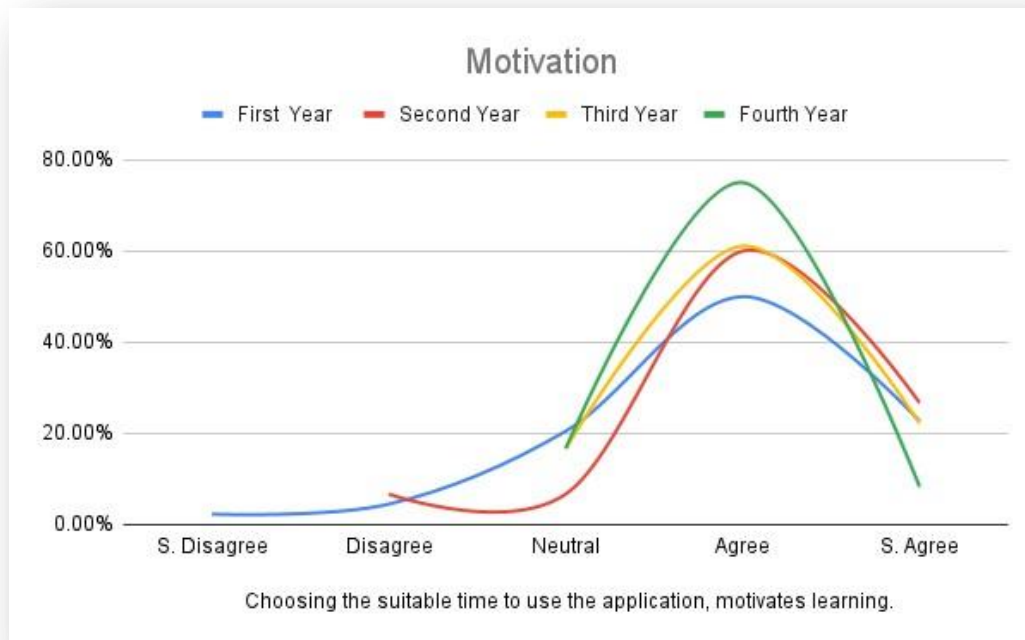
4.3 The interview

The results from the interview show students agree that Duolingo is an interesting and simple application that includes many fun images and figures that attract the attention of learners and encourage them to use it more. (S2) indicated that 'Duolingo is so colorful, attractive and easy to use. My siblings and I use it on a daily basis because they think it is just like playing a game. However, it requires internet connection which is not available at all times.'

Duolingo is a useful tool in learning the English language. It is practical and helpful in learning many language skills, particularly enhancing vocabulary and grammar. (S3) 'I have used Duolingo for quite some time now and my vocabulary has improved so much and I'm able to build better sentences'. (S2) added that 'this application helped me a great deal in the reading skill because it has assisted me in building up my vocabulary throughout the years and made it easier for me to understand what I am reading'. On the other hand, (S1) pointed out that, as a new user of the application, it can be more beneficial for younger learners because it is considered as a game and not many grown-ups like to spend a lot of time playing games even though the aim is learning a language. She adds that 'we should be careful when using the smart gadgets because learners sometimes get distracted and use other applications

on the device and therefore, they require close supervision.' While, (S3) mentioned that one weakness is that the words used in the application keep repeating and it gets annoying after a while. This is consistent with the study done by Yana, (2021).

It incorporates some gamification components to motivate and involve students (Tiara et al., 2021; Munday, 2016). Aulia et al. (2020) point out that using language learning application helps accomplish higher scores in vocabulary learning and therefore, has a significant effect on the vocabulary level of the learners.

AlTameemi (2017) asserts that it is crucial for learners to obtain more knowledge than just what is offered by the teacher in the classroom. The results of the study are consistent with Husnut (2021) and Ajisoko (2020) which state that Duolingo is one of the desirable applications in developing the English abilities particularly for beginners as it has enhanced their vocabulary storage massively. Furthermore, Muddin (2018) shows that students learned new vocabulary through Duolingo, but it mainly benefited learners at a beginner level. Astarilla (2018) adds that this application increases learners' language skill and motivates them by experiencing a comfortable and enjoyable learning experience. The findings of this study complement those of former studies by (Garcia Botero and Questier, 2016; Garcia Botero, et al., 2018; Inayah et al, 2020) stating that Duolingo is a valuable and helpful application that brings motivational assistance for language learners.

5. Conclusion

Technology can support learning but cannot totally replace the principle of interaction nor provide the communicative purpose of language learning inside the language classroom. It is important to combine classroom learning and teaching wisely with what the state-of-the-art technology offered today.

The results of the current study show that learning a language by using technology is desired and chosen by many learners. Among other applications, Duolingo is a valuable application that provides fun and an interesting way to learn vocabulary. It is motivating and easy to use by learners and can also eliminate boredom while encouraging learners to use a modern tool for language learning.

However, there are some obstacles to the application such as the availability of smart devices, applications and internet, which may not be affordable by all learners in undeveloped countries. Another weakness is the advertisement that appears on the screen and the repetition of words may become annoying. Nevertheless, it is preferable to use the application to enhance vocabulary whenever available to learners and it is crucial to highlight the importance of using such tools alongside with the common learning methods and tools used today.

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