

Duolingo as a Bilingual Learning App: a Case Study

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Abstract

Due to the evolution of technology, this study focuses on the use of technology in order to promote language learning. Duolingo is one of the modern applications that facilitate acquiring a second language. Hence, the study aims to confirm the hypothesis that Duolingo helps promote acquiring two languages simultaneously for beginners. It is a mixed-method study including observation, assessment, and interview. It is also a case study that involves one participant who used Duolingo to learn Spanish and English simultaneously for two months. The participant is a male school student whose age is 12 years old, and he lives in Riyadh, Saudi Arabia. After collecting the data, they were analysed and described to have the final results. At the end, the results displayed that Duolingo can promote acquiring two languages for beginners, but it has limitations. Thus, it is recommended to develop Duolingo for advanced levels as well as for English language learners.

Keywords: bilingual app, Duolingo, English, language learning, Spanish

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Introduction

Technology has been used as a technique to improve education and teaching methods. Accordingly, mobile applications have been used extensively in learning the second language since smartphones and tablets are available most of the time. One example is Duolingo; it is an online app and website that was created to facilitate learning various languages, such as Spanish, German, and Chinese. The main method of the app is Direct-Translation Method. In addition, it provides the learner with a track of his/her improvement over time as well as a reminder to follow up with the learning process. The learner also can specify the duration of daily studying, such as studying for fifteen minutes or for twenty five minutes per day. To illustrate, Duolingo was dedicated only for native speakers of English at the time of the study, but the participant of this study is a native speaker of Arabic. Hence, this study was conducted to examine how Duolingo can promote acquiring two languages, which are English and Spanish, simultaneously for beginners.

Vesselinov & Grego (2012), have done a study to investigate the effectiveness of Duolingo in learning Spanish. The results showed a significant improvement of the participants during two months. Thus, it has proven that Duolingo promotes learning a second language. However, Garcia (2012) reported that Direct-Translation Method that is adopted by Duolingo is helpful, but it is more challenging for upper levels. As an illustration, Direct-Translation Method proves its capacity to learn a second language, but it will be more difficult while levelling. On the other hand, this research paper aims to discover in depth how a beginner can learn English and Spanish by using Duolingo, which is created for learning only one language at a time. Hence, the purpose of the study is to improve learning techniques by using technology, primarily apps.

Literature Review

Learners, nowadays, can easily access to a numerous sorts of language learning apps, especially with the existence of smartphones. However, Duolingo¹ was created in 2010 as an online web, and then it became available on Android and IOS. Its rapid development led to registration of over 100 million users (Duolingo, 2016). The application's potential and limitation were evaluated in several studies.

The Effectiveness of Duolingo

According to Vesselinov & Grego (2012), the motivation for learning a new language plays a primary role in the progress of the learners' levels. To illustrate, people who are motivated are more likely to follow the program's regulations. 196 participants were included in the study. The researchers set certain criteria to choose the suitable subjects, such as the age of 18, native speakers of English, and live in U.S. (Vesselinov & Grego, 2012). The participants had to learn Spanish for two months by depending on Duolingo though some of them were not committed to the program. The findings displayed that the majority of learners developed over time without any external sources or assistance. The results indicate the importance of being determined and having an incentive in order to learn energetically and independently by using online websites and apps, such as Duolingo.

The Translation Method

Garcia (2012) claims that the main approach to learning a language in Duolingo is translation. The translation method was rejected, and now it returned to be used in software

programs. In Duolingo, this method succeeded primarily for beginners, but as levelling, it becomes more challenging. What makes this app distinctive is the human's control of the translation process in opposed to translation machine. Thus, it was proven that Duolingo is one of the leading programs that help the users learn the language effectively. This study gives an evidence of the limitations of language learning applications though they have improved recently. These programs are a valuable step to improve the teaching methods and to give the learners an incentive to learn since they are accessible.

Learning a Language through Media

According to Gilson, Wells, & Tatro (2012), a large number of people have been recently depending on smartphones, tablets, and computers to learn a new language. Duolingo is one of the most popular applications for learning languages among people in addition to Babbel and 24/7 Tutor. These types of apps have advantages that the traditional teaching lacks. For instance, Duolingo motivates the learners to learn independently without the teacher's instructions. It encourages the users to review what they have learned as well as relearning what they have forgotten. However, teaching language applications still have some limitations, for example, Duolingo does not provide English language. Moreover, it shows that using applications for learning the second language is beneficial for different ages though these apps do not substitute the teacher's role. To conclude, it was demonstrated that Duolingo is a useful app for beginners as they can step ahead in learning autonomously.

Duolingo's Contribution to E-learning Education

Duolingo has been improving consistently concentrating on the details in which led to the users' satisfaction. In addition, it attracts the learners to remain engaged by adopting games methods. (Jašková, 2014). Czech learners were considered in the study as 118 participants had to fill in a questionnaire expressing their attitudes toward e-learning, and specifically toward Duolingo. The majority of the answers showed that Czech learners were not aware of Duolingo due to the absence of Czech language. Jašková (2014) states that "for the Czech learners it would be very beneficial to have the possibility to learn English via Czech." (p. 46). Therefore, it is recommended to improve the program with respect of adding more languages.

Using Duolingo in the Classroom

The study examined the efficiency of Duolingo in corporate with the traditional teaching method, and it was used in Spanish university courses, including two levels; beginners and intermediate (Munday, 2016). The first group (beginners) were asked to complete five lessons per week, whereas the advanced group were required to finish all Duolingo lessons during the semester. According to Munday (2016), the purpose of the study was not to cram for Spanish learning, but to enhance their learning process by not limiting them to a number of hours. At the end, it was shown that Spanish learners enjoyed the app, and achieved more than the required levels. However, advanced learners did not show an adequate development in comparison to first-level learners who improved rapidly through the course. Munday (2016) recommended that Duolingo should be used in the classrooms as the learners prefer to have it instead of homework. Furthermore, there are students who kept using Duolingo even after the end of the course (Munday, 2016). The results demonstrate that Duolingo could be more enjoyable and beneficial for basic level learners than the sophisticated levels.

Learning German via Duolingo or Traditional Course

Ratzlaff (2015) explored the difference between learning German through Duolingo and classroom that follows Communicative Teaching Approach. Entry-level Subjects were divided into two groups; 5 participants used Duolingo to learn German, and 10 participants attended the classroom. Then, they were tested to assess their proficiency of the language. Results proved that being involved in the classroom reinforces learning process effectively, in contrast to relying only on software apps. According to Ratzlaff (2015), no matter how many online apps are available, they are still not as effective as the real classroom since language learning requires human interaction.

Software Applications for Language Learning in Elementary School

Pourreau & Wright (2013) conducted a study to investigate the capability of mobile apps in acquiring a second language. Several apps were used in the study as a supplementary to the traditional learning based on English level and learners' ages. Duolingo was selected for learners from grade 2 to grade 8. According to Pourreau & Wright (2013), by looking to the abilities of Duolingo, it would be suitable for learning a second language up to the middle school level. Generally, it was proven that using software apps would engage and motivate the learners to progress in language learning (Pourreau & Wright, 2013).

Research Question and Hypothesis

How can the application Duolingo promote acquiring two languages simultaneously for beginners?

H1: Duolingo helps promote acquiring two languages simultaneously for beginners.

H01: Duolingo does not help promote acquiring two languages simultaneously for beginners.

Methodology***Research Design***

The present research paper is following a mixed-methods approach, containing qualitative and quantitative data collection. There is only one participant involved in the study, and he was observed intensely while using the app Duolingo to learn English and Spanish simultaneously. Hence, it is a case study that contains observation for two months, and then the subject was tested to assess his level, and interviewed to address his attitude toward the app. The scores of English and Spanish tests are the quantitative data, whereas qualitative information are collected through observing the learner during the sessions, and then conducting a semi-structure interview to conclude the study.

The Participant

The subject of the current study is a male student whose age is 12 years old. He is a native speaker of Arabic, and lives in Riyadh, Saudi Arabia. Additionally, he has a basic knowledge of English, and has not learned Spanish before being introduced to Duolingo. He was selected due to his basic level of English, and he showed a desire to learn Spanish via Duolingo.

Instrumentation

The assessment of the learner was based on two English and Spanish tests. They were created by the researcher depending on the content of Duolingo. The participant was tested in

present simple, present progressive, plural and singular forms, pronouns, articles (a, an, un, una...etc.), adjectives, and questions forms.

The first test was conducted after two weeks of learning, but it was not reliable due to its simplicity. Therefore, a second evaluation was required to estimate the learner's performance accurately. Each section of the second test (English and Spanish) includes identical question types which are 12 multiple choice questions and 8 picture recognition items.

However, the interview contains five questions in which the subject was asked about his overall experience. First two questions were about Duolingo and how he benefited from using it. Then, he was questioned about learning Spanish as a second language besides English. Final question was about whether or not to rely only on Duolingo to acquire a second language.

Data Collection Procedure

After acquiring the participant's approval, the following data collection has begun. The data were collected by using the mixed-methods; qualitative and quantitative including observation and assessment of the participant as well as interviewing him. It is a case study that contains one participant whom is observed in depth during the learning sessions. The participant was learning English and Spanish simultaneously by using Duolingo. Accordingly, the duration of the study was two months as the subject practised four times a week. Each session was around 30 minutes, so the total was two hours per week. At the end of the study, the participant has practised 16 hours.

Furthermore, the participant was tested three times during the learning process (see the tests in appendix). The first test was an achievement test which is after two weeks of studying, but the test was basic-level. Therefore, the subject was tested another test after one month of studying, and then he was tested the same test eventually to obtain reliable results. It is essential to realize that the goal of the study is to discover how Duolingo can promote acquiring two languages simultaneously for beginners by using Direct-Translation Method. The second assessment and the interview took place at the end of the study to examine the development of the learner.

The Results

The results were analysed and described based on the scores of the three tests, the observation notes, and the interview to gain valid results.

Observation Notes

As it is known, Spanish has two grammatical genders, masculine and feminine in nouns. For instance, the article 'the' has two words in Spanish; *la* (feminine) and *el* (masculine). This distinction between English and Spanish caused a difficulty for the participant. While observing the learner, he anticipated that the articles (a, an) have two equivalents in Spanish which are (*un, una*). Conversely, *un* is for masculine as in *un niño* (a boy), and *una* for feminine as in *una niña* (a girl). However, after several times of practicing via the app, the subject could distinguish this difference between the two languages.

Another difficulty that the learner faced is the auxiliary verb *es* when it is positioned at the beginning of the sentence. The equivalent of this word in English is *it is*. For example, *es un libro* means in English *it is a book*. Thus, the participant used to translate the previous sentence as *is a book*. After a short time of training, the participant could realize how to translate it correctly.

Using the article ‘the’ in Spanish is different from English whether in gender or number. For instance, the phrase *the women* in Spanish is *las mujeres*, and *the men* is translated to *los hombres* which is not corresponding to the singular form (*el hombre, la mujer*). The participant learned this distinction quickly as it did not cause any difficulty because Arabic also requires various morphemes for plurality and gender.

Moreover, there was another complication in Spanish which is subject-verb agreement. In English, the only case where the subject requires verb agreement is third person singular ‘s’ whereas in Spanish, the verb has to change in most cases according to the noun or the pronoun. In particular, the verb *come* (eat) has different forms; *el come, yo como, ustedes comes, and nosotras comemos*. Therefore, these various forms demand an effort to be memorized. However, the participant has not faced much difficulty understanding and memorizing them since he started to learn Spanish. The reason behind being able to learn the forms fast is that Arabic also requires subject-verb agreement in many cases, so the learner could reflect on his native language.

The Assessment Scores

In addition to the observation notes, the tests proved the development of the learner cover the two months. The first test assessed what he had achieved during the first two weeks. It was out of 14, and the participant obtained 12 in both English and Spanish. Since the first achievement test was basic, there was a necessity for another test that contains what was learned and what was going to be learned, and then the same test was used at the end of the study to examine his improvement. Hence, the results of the test that was conducted twice are shown in the graph below.

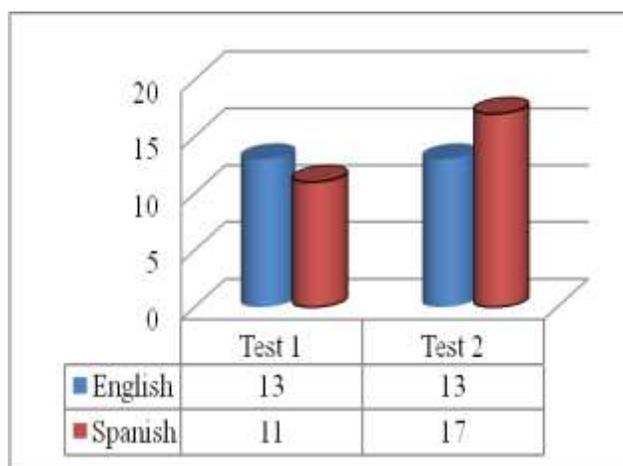


Figure .1 English and Spanish Tests Scores

Figure 1 depicts the scores of the test that the learner had to do twice during the study. The test is out of 20 marks, and it included two sections; English and Spanish. It is shown that the participant has developed in Spanish in contrary to English.

The score of the first test is 11 out of 20 in Spanish, and 13 out of 20 in English. After conducting the same test at the end of the study, the score of the learner displayed a high rate of improvement in Spanish as he obtained 17 out of 20. However, the participant's score in English remained 13; equal to the first score.

To sum up, the results of Spanish demonstrate the learner's development over the two months whereas the results of English do not show any improvement.

The Analysis of the Interview

The questions of the interview are displayed below:

1. Can you speak about your experience with Duolingo?
2. What have you learned in the past two months?
3. Are you planning to continue learning Spanish and English?
4. Have you ever thought of learning Spanish before using Duolingo?
5. If you want to be competent in Spanish or English, will you rely only on Duolingo?

The interview consists of five questions regarding the learner's development, attitude, and plan. First, the participant was asked to speak about his experience in using Duolingo. He declared that Duolingo is an app that everyone can enjoy while learning a language in contrast to the traditional way. He also recommended second language learners to take Duolingo into consideration since it is not complicated.

The second question was about what the participant learned during the past two months. He answered that he could learn several grammatical rules and various vocabulary in English and Spanish. However, the sentence structure was one of the complications he faced. For example, the word order in Spanish and English is distinct in some cases. He gave an example of the phrase *a red colour* and its equivalent in Spanish is *un color rojo*. Literally, this phrase is translated *a colour red*. Thus, he had to make several mistakes and trials in order to learn it. He also added that the pronunciation and spelling in Spanish are less complicated than in English because in Spanish, every single letter is pronounced and written.

After that, the learner was questioned whether or not he is planning to continue learning the both languages. He conveyed that he is planning to learn the two languages, but he would focus on Spanish as he prefers it rather than English. Then, the fourth question was about the learner's plans before discovering Duolingo. He claimed that he had not thought of learning Spanish before uploading the app on his iPad. Duolingo entertained and motivated him to learn about the language.

Finally, he was asked if he would rely only on Duolingo to be competent in the two languages; Spanish and English. He acknowledged that he would not depend only on Duolingo to be 'expert' in a language, so he would refer to additional sources, such as Google, YouTube, and even the school.

Discussion

According to the results, it was demonstrated that Duolingo can promote acquiring two languages simultaneously, but there are limitations. Garcia (2012) reported that Duolingo is a

satisfying app to start learning a new language, but it cannot be relied on for higher levels due to the Direct-Translation Method. Indeed, the limitation of Duolingo was displayed during the learning sessions. For example, the learner was confused about the sentence structure since he had to translate every single word. In addition, the learner could not recognize some vocabulary during the assessment even though he had learned them via Duolingo. The app usually provides pictures for the new vocabulary. However, there are certain vocabulary that are taught through a direct translation without a visual image, so the participant did not know the meaning of many words.

In despite of the fact that Duolingo has limitations, it improves the knowledge of the language regarding pronunciation, vocabulary, and grammar. To illustrate, Vesselinov & Grego (2012) proved that people who participated in the study developed in Spanish without referring to other sources. Hence, the participant of this study improved in both languages English and Spanish, but he obtained higher scores in Spanish comparing to English. Thus, Duolingo could assist the learner to learn more effectively, but it still needs an evolution regarding the English language.

Duolingo proved that it motivates the learners to continue learning the second language, and even to consider learning a new language. In particular, when the participant was asked about Duolingo, he answered that it made him motivated to learn a new language that he had not thought of, which is Spanish. According to Gilson, et al. (2012), language learning applications have an advantage over the traditional education which is encouraging the students to learn independently. Therefore, the students will learn how to refer to other sources with the assistance of the teacher. These kinds of apps are available and accessible at any time and any place which gives the learners an opportunity to practice their language constantly.

According to Munday (2016), “Duolingo can still be a valid addition to any course online or face-to-face, since students are able to review the language at their own level” (p. 97). The existence of engaging apps would enhance the performance of the students during the course. The participant mentioned in the interview that he would continue learning Spanish using Duolingo, yet traditional school cannot be replaced by online or software apps. Therefore, using these apps as a complementary to the curriculum leads to the increase of students’ performance and motivation.

Recommendations and Conclusion

This study showed that Duolingo is an app where every beginner can start with for learning a second language as it motivates him/her to keep progressing. However, Duolingo still needs improvement to cover more vocabulary, grammar rules, and languages, primarily English since it is the lingua franca of the world. It also should be promoted to be used for higher levels. In addition, Duolingo should not completely rely on the Direct-Translation Method as it can use extra visual tools.

In conclusion, Duolingo is recommended to be adopted at schools to entertain the students while learning since it is similar to a video game. Indeed, this research paper proved that the language learning app; Duolingo is beneficial for learning the second language. Furthermore, it prompts the desire of learning a new language.

Notes

¹ Since Duolingo is being modified and improved, it currently supports learning English via Arabic. However, the focus of the present paper was learning Spanish and English simultaneously via Duolingo without referring to the mother tongue (Arabic).

About the Author:

Heba Ahmed graduated from Prince Sultan University in 2016 with first honor. Her major is Applied Linguistics. During her academic studies (2011-2016), Heba produced different leading research papers in linguistics, sociolinguistics, and technology in education. She has experience in teaching, research, and project management. Heba is interested in continuing her graduate studies in linguistics, sociolinguistics, and psycholinguistics.

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Appendix
The First Test Sample

English Test (14/-----)

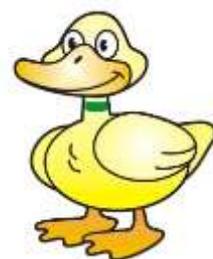
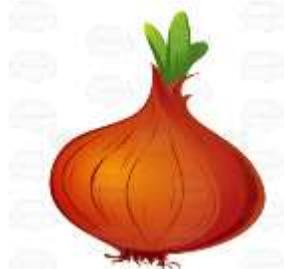
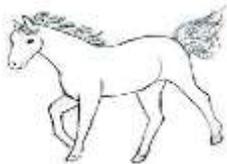
The participant will be tested in:

- Pronouns.
- Plural and singular forms.
- Articles (a, an).
- Present simple & progressive.

1) Choose the correct answer: (8/-----)

1. (He, It, She, They) is a girl.
2. This is (a, an, the) apple.
3. The cat is (drinking, drinks, drink, drank) water.
4. (They, He, She, It) is a boy.
5. (Bear, Bears) drink water.
6. Many birds (are, is, am) on the tree.
7. We are (boy, boys, man).
8. I (is, are, am) drinking milk.

2) Write down the name of the picture: (6/-----)



Spanish Test (14/-----)

1) Elegir: (8/-----)

1. Yo (come, comes, como) el pollo.
2. Las ninas comen un (tomate, salsa, comida).
3. (Tu, Yo, El) lees la carta.
4. Ela come (un, una) manzana.
5. Los ninos (escriben, escribe, escribe).
6. (Los, Las) hombres leen.
7. Las (tortugas, gatos, gata) beben leche.
8. (La, El, Un) mujer.

2) Escribir: (6/-----)



The Second Test Sample

English Test (20/____)

A. Choose the correct answer:

(12/____)

1. (They, He, She) is a boy.
2. The cat is (drinking, drinks, drink) water.
3. His cats (are, is, am) eating.
4. The horse is (me, mine, my).
5. (Who, What, Which) do you read?
6. (How, What, Why) are you?
7. Ahmed wears a white shirt as well as (its, her, his) pants.

8. The egg is (red, white, black).
9. She (eats, eat, eating) her breakfast every morning.
10. They (is, am, are) writing.
11. (What, Which, Who) animal do you like?
12. The sun is (white, orange, yellow).

B. Write the correct word:

(8/____)



Spanish Test (20/____)

A. Elegir:

(12/____)

1. (La, El, Una) hombre.
2. (Nosotras, Nosotros, Ustedes) somos mujeres.
3. (Quien, Cuales, Que) es ella?
4. (Que, Como, Cuales) animals?
5. Los ninos (escriben, escribe, escribes) libros.
6. Yo como una fresa (roja, blanca, negro).
7. Los zapatos (rojo, blancas, negros).
8. (Mis, Mi, Tu) libros.
9. Yo leo (tu, mis, tus) carta.
10. Ella come (un, una, el) manzana.
11. El (bebe, bebo, bebes) leche.
12. Las (gata, gatas, gato) beben agua.

B. Escribir:

(8/____)

