

# The Impact of Using Technology in the ESL Classroom

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## ABSTRACT

Acquiring English as a second language is a difficult step for many students because they may not necessarily respond effectively to traditional classroom instruction and guidance. With the emergence of many mobile technologies, their application in the classroom has become increasingly prevalent. Therefore, teachers must examine these options as they build lessons to educate their students in a second language. The use of a mobile app known as Duolingo was examined as part of classroom instruction one day per week as well as practice four times per week outside of the classroom. Based upon a cross-sectional study and the administration of pre and post-tests in English vocabulary, most subjects in a ninth-grade class where Turkish is the primary language spoken improved their scores in English vocabulary. This study provides additional support in examining the use of mobile apps in classrooms and beyond to acquire English language skills for students across many age groups.

## Keywords

Technology, Duolingo, traditional classroom, second language, vocabulary

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## Introduction

Students learning the English language for the first time who primarily speak a different language require unique techniques and strategies that will have a unique impact on their learning potential. Learning a new language is a difficult process for some students and requires teachers to examine how technology-based tools will influence language acquisition and improve performance in second language acquisition. Technology serves to bridge gaps for learners, brings teachers and students together from different sides of the world, and supports the discovery of new opportunities to communicate and share knowledge across different platforms. Teachers should examine the different technological options that are available for use in the classroom and in the home environment to teach second language skills and to provide learners with new discoveries that will have meaningful impact in their lives. With the use of technology, many doors open for teachers to provide instruction to students in a second language; however, not all tools are created equal and selected options must be tested appropriately to determine their effectiveness and if they provide the appropriate learning opportunities for students seeking to learn a second language.

The use of the smartphone is an important tool in promoting student engagement because they are likely to own these devices and to use them as part of the daily routine. Therefore, the options with smartphone use should be further examined to ensure that students have tools in the classroom and in the home environment to learn a second language effectively. Therefore, the use of smartphone applications that are also available on a tablet are important in educating the target audience regarding how to learn English. For younger learners in the elementary grades, learning English requires traditional classroom lessons as well as supplemental resources to educate students in any location. Therefore, the use of a smartphone app may be effective in promoting continuous learning for teenagers. Specifically, the following study will examine the use of Duolingo, a popular smartphone app that is used by millions of people around the world, as a supplemental tool to learn

English in addition to the traditional classroom experience. The effectiveness of this tool will be examined with a class of ninth graders who are learning English for the first time. The outcomes of this discussion will provide additional knowledge and resources regarding the effectiveness of smartphone apps as a means of technology-driven language acquisition tool.

## Literature Review

### Technology as a Learning Tool

The use of technology to acquire knowledge and obtain new skills is an important step for many teachers to take in 21<sup>st</sup> Century classrooms and offers the opportunity for students to gain greater enthusiasm and understanding of their subjects with continued use (Chun, Kern, & Smith, 2016). In this context, technology serves a specific purpose for many teachers and functions as a driver and facilitator of learning over time (Chun et al., 2016). It is important for teachers to apply the same principles to acquiring skills in a new language, but it may be difficult to transition to this step because students are unfamiliar with the concepts of the language and may experience more obstacles than they are accustomed to (Chun et al., 2016). Nonetheless, technology is important in providing students with a level of comfort that they may not develop when they only receive traditional classroom lessons, as they are likely to use technology comfortably in their daily lives (Chun et al., 2016). Teachers, however, must develop an understanding of the tools that will be most practical, affordable, and applicable to learning a language and have the greatest benefit for second language students (Chun et al., 2016). Implementing a technology in classroom instruction and beyond requires an understanding of how it may be applied in a variety of ways and how learning can occur beyond the specific instruction given by the teacher, such as the use of texting and social media as supplemental options for students (Chun et al., 2016).

The portability of mobile technologies such as smartphone apps and tablets opens many doors for teachers and students to better understand a variety of subjects that they may otherwise struggle with. This process is important

in expanding how to learn new languages and for teachers to implement unexpected tools in the classroom and in homework assignments (Kukulska-Hume, Lee, & Norris, 2017). The concept of “mobile pedagogy” is worth noting because teachers may adopt atypical designs for their classroom lessons which also allow students to learn on the go and in the comfort of their homes (Kukulska-Hume et al., 2017). However, a mobile app can open new doors for students to communicate in a different language and enjoy themselves in the process because it is a tool that they already have experience with and are comfortable with using in other ways (Kukulska-Hume et al., 2017). Mobile apps may provide a new and transformational approach to learning that is not part of the normal framework and may allow teachers to increase their direct engagement with students who are enthusiastic when using apps for learning purposes (Kukulska-Hume et al., 2017). With this option, teachers can break through with their students to better understand what options are likely to create greater interest and allow students to embrace learning as part of the daily routine beyond the classroom because it is also achievable in a mobile setting (Kukulska-Hume et al., 2017).

The use of mobile devices such as smartphones has become increasingly common across many groups and offers new tools for learners seeking new forms of knowledge, including the skills required to learn a second language (Cavus, 2016). It is believed that the availability of smartphone apps which may also be used with tablet computers, are an important supplemental option for language learners and will provide additional knowledge for students (Cavus, 2016). It is known that the “most important features of mobile learning are portability, mobility, connectivity, flexibility, interactivity, context sensitivity, individuality, and accessibility” (Cavus, 2016, p. 366). With this option, teachers may implement the use of apps to motivate students, to provide a fun and engaging platform for learning, and strengthen a student’s language skillset with regular practice (Cavus, 2016). Based upon existing feedback from teachers and students, smartphone apps have been well-received as a viable tool for language learners (Cavus, 2016).

Understanding English is difficult for many people who speak another language; therefore, it is necessary to ensure that students are motivated and enthusiastic regarding English during their lessons (Mindog, 2016). When using smartphones, their ease of use, mobility on the go, and ability to connect easily make them effective learning tools when the appropriate applications are available (Mindog, 2016). In a study involving four Japanese students, apps were effective in understanding how to read English, listen to the language, speak the language, and write words (Mindog, 2016). There are many opportunities for learners to gain easy access to the appropriate tools using smartphones, and teachers should be advantageous when evaluating the different options that are available (Mindog, 2016).

Mobile learning is only part of the equation for teachers providing instruction in a second language because it is likely that a blended learning environment is most appropriate for students learning English (Avci & Adiguzel, 2017). Today’s teachers seek “‘optimal’ conditions to

enhance opportunities of engaging in the target language” (Avci & Adiguzel, 2017, p. 1). In this context, learning with a mobile language app is not entirely feasible on its own as a valuable learning tool but combined with classroom lessons and discussion, it is likely that students will better understand the language and develop improve their skillset (Avci & Adiguzel, 2017). Students using the app are likely to learn new vocabulary words as well as phrases and by supplementing these experiences with classroom lessons, students will begin to see the larger context of the English language and become more comfortable as time passes (Avci & Adiguzel, 2017). Students are less likely to be effective English language speakers if they only receive traditional classroom instruction or only use the smartphone app, but a combined approach may serve as the breakthrough that students need to be successful in learning English over time (Avci & Adiguzel, 2017).

An examination of social media as a viable learning opportunity has become increasingly important to teachers and students because the use of social media for personal reasons is significant (Sobaih, Moustafa, Ghandforoush, & Khan, 2016). However, implementing social media in the classroom as part of educational instruction is challenging based upon existing barriers in some countries, such as developing nations where infrastructure is limited (Sobaih et al., 2016). Social media as a valuable learning tool requires an understanding of socio-cultural learning as it applies to individual students, but it also relates to how they interact with teachers in the classroom (Sobaih et al., 2016). Students will likely respond well to social media when teachers use it as a classroom tool so that they will respond effectively and improve their performance (Sobaih et al., 2016). Through social networking, it is possible that students will respond effectively to a variety of tools such as YouTube, Facebook, and others to stimulate learning and to facilitate effective performance in acquiring new language skills (Villafuerte & Romero, 2017).

Based upon the socio-cultural approach to learning, acquiring second language skills should be conducted in a culturally appropriate environment where students are comfortable with their surroundings (Ma, 2017). It is believed that “prevailing mobile technologies are becoming an indispensable tool to mediate how individuals learn an L2 while interacting with other agents and engaging in socio-cultural activities” (Ma, 2017, p. 2). Under these circumstances, students learning a second language will benefit from mobile applications because they can use them in safe spaces such as their cultural surroundings where they can openly communicate and share information with others (Ma, 2017). It is also evident that with the use of mobile technologies, students will acquire new forms of knowledge in a non-traditional learning environment and promote greater engagement with the outside world (Traxler, Barcena, & Laborda, 2015).

#### **Perceptions or Beliefs Regarding Smartphone Apps in Education and Language Learning**

For students and teachers, the use of smartphones in the classroom and as part of learning is not necessarily the first choice because in many cases, these devices are used for personal reasons such as texting, social media, playing

games, and purchasing items. It is not always believed that they are practical as a learning tool and this concept remains relatively new in the educational spectrum because perceptions of these devices as effective learning tools are somewhat poor (Shraim & Crompton, 2015). When students have strong familiarity with smartphones and apps, they are more likely to engage in educational tools involving these apps; however, if students are not very familiar, it may contribute to an already difficult learning curve and cause challenges for students over time (Shraim & Crompton, 2015). It is believed that when “academic staffs are to enhance teaching and learning practice effectively by integrating emerging mobile technologies, they must understand their particular attributes, perceive self-efficacy in using them, have positive attitudes towards their pedagogical affordances and recognize challenges to implementing them” (Shraim & Crompton, 2015, p. 302). With this framework, teachers must be amenable to using smartphone apps in classroom exercises and for homework assignments and recognize that students may benefit from these tools as part of their routine activities (Shraim & Crompton, 2015).

The application of mobile learning (M-learning) may not be perceived by all teachers and students as an effective use of time and may not be attractive in all settings, as it may be difficult for some individuals to accept this option as appropriate for student learners (Al-Emran, Elsherif, & Shaalan, 2016). Since students use mobile technology so frequently throughout their daily activities, it is likely that they will be amenable to adopting their devices as learning tools; furthermore, it could transform how they communicate and learn a new language effectively (Al-Emran et al., 2016). In a 2012 survey by the Educause Center for Applied Research (ECAR), 67 percent of students already recognize the importance of mobile technology as part of the learning routine to supplement the classroom experience (Al-Emran et al., 2016). Therefore, M-learning can motivate students to attend their classes and to make the most of their learning experiences as well as expanding knowledge acquisition outside of the classroom (Al-Emran et al, 2016). Mobile tools can contribute to a variety of key learning characteristics such as critical thinking and solving problems; therefore, it is only natural that this option could be beneficial to students learning English as a second language (Al-Emran et al., 2016).

#### **Mobile Technologies in the Classroom**

Mobile applications may have important uses in the classroom to instruct students in learning English. Specifically, VIdeos for SPeaking (VISP) is an option that was tested with Turkish-speaking students and lessons learned are variable; however, the use of a mobile app was intriguing to students and provided a different means of language instruction that provided greater motivation and enthusiasm (Moreno & Vermeulen, 2015). Mobile technologies can bridge existing gaps and demonstrate that students using apps for mobile-assisted language learning (MALL) can improve their knowledge base and feel greater connectivity to other students and the teacher beyond the classroom environment (Bicen, 2015). From this perspective, students can apply the lessons learned to

communicate in a different language and improve their skills with practice and time (Bicen, 2015).

The concept of mobile immersion is important in improving English language acquisition, and specifically, learning new vocabulary (Shahbaz & Khan, 2017). From this perspective, students will likely gravitate towards mobile apps that are user-friendly and provide specific lessons; in addition, they will likely be an effective supplemental tool for teachers using traditional classroom lessons that independently may not have the same effect (Shahbaz & Khan, 2017). Learning opportunities should be creative and provide unique platforms for students so that they will improve their skills and achieve a greater understanding of the intent of the lessons provided (Shahbaz & Khan, 2017).

The use of mobile technologies such as smartphones provide an additional resource to support student-based collaborations and communication in the classroom and beyond (Ilic (2015). In this capacity, students will begin to demonstrate different perceptions of the time spent on lessons as well as how they share information with other students; in addition, they are likely to approach their studies differently in the future and explore different methods of information sharing that will have meaningful benefit (Ilic, 2015). The concepts of time and space are very important because they reflect the following: “The mobile phone supports this idea of time because it allows communication during previously unproductive periods of time... Likewise, space is less about localized presence as mobile technology separates space from place” (Ilic, 2015, p. 17). This is perhaps most important in examining why students often respond well to mobile learning tools because they have the potential to increase productivity and support non-traditional learning spaces (Ilic, 2015).

A research study involving the use of Instagram to support foreign language instruction was conducted by Khalitova & Gimaletdinova (2016) to determine if mobile-assisted language learning (MALL) in the context of Instagram increases listening. Based upon an examination of 50 female university students whose first language is Russian and were evaluated based upon their listening skills in the English language, it was determined that the use of Instagram led to improvements in listening and specifically, comprehending opinions and other types of information (Khalitova & Gimaletdinova, 2016). From this perspective, students will likely respond effectively to the use of Instagram in learning English as a second language and will provide an authentic approach to the language that is typically acquired during communication in social settings (Khalitova & Gimaletdinova, 2016).

Finally, studies that evaluated the use of WhatsApp, another type of social media platform, were evaluated to determine the impact of this app on second language learners. Specifically, Yavuz (2016) examined the use of WhatsApp, a social messaging tool, is beneficial to students in listening and in learning pronunciation; however, it should not be used as the only educational option for students in acquiring a second language, as other options should also be explored to improve student learning outcomes (Yavuz, 2016). A blended or combined approach using WhatsApp and traditional classroom instruction may

be more useful for students in improving their second language skills (Yavuz, 2016).

Hamad (2017) examined the use of WhatsApp to improve English language skills among female college students. Through the use of questionnaires and observations by the teacher while students were in the classroom, it was determined that this mobile app offers important benefits for students and enables them to expand their understanding of the language, their enthusiasm for learning English, and their overall performance (Hamad, 2017). In this capacity, students are likely to be more engaged and increase their vocabulary levels with regular use of the app over time (Hamad, 2017). In addition, students are more likely to increase their verbal communication in the classroom, improve their writing skills in English, and to increase their self-confidence in learning English when they use the app regularly (Hamad, 2017).

In the junior high setting, students in an Iranian school were administered a pre- and post-test to learn English vocabulary in an English as a second language course (Jafari & Chalak, 2016). WhatsApp was evaluated against a secondary method of traditional classroom lessons to measure its effectiveness (Jafari & Chalak, 2016). It was determined after the post-test that students using WhatsApp had measured improvements in their English vocabulary versus students who received traditional classroom lessons (Jafari & Chalak, 2016). It is likely that by using WhatsApp as part of the regular curriculum, students will gain important benefits from this option and improve their English language skills with time; furthermore, they will improve their level of comfort with the language and will gain self-confidence in using the language more frequently (Jafari & Chalak, 2016).

### Research Questions

In evaluating the effectiveness of the Duolingo app, it is important to consider the following research questions:

- 1) How will students improve their language skills using the app as a supplement to traditional classroom instruction?
- 2) What lessons will teachers learn from the use of technologies such as smartphone apps as supplemental instruction tools?
- 3) How effective is Duolingo in bridging gaps in English language comprehension and communication for foreign language learners?
- 4) How can Duolingo be expanded into other classrooms to facilitate learning English as a second language?

Each of these research questions will be considered with the proposed intervention to use Duolingo in the classroom and as part of homework assignments.

### Methodology

The study design was cross-sectional to examine a single population over time whereby they were measured on their English vocabulary proficiency over two separate intervals. The study examined a single population of 20 ninth grade students, all of whom were administered an English vocabulary test at baseline (the start of the study) and were given the same test after six weeks of using the Duolingo app at least four times per week independently, 15

minutes per day plus one day per week in the classroom for 15 minutes. The use of the Duolingo app was necessary to determine if English language instruction would improve over a six-week period in conjunction with regular classroom lessons and one day of Duolingo use in the classroom.

Each study participant was given instructions and guidance regarding the study in their native Turkish prior to participation. Prior to the startup of the study period, students were given a presentation in the classroom to explain the study and to understand its purpose in supporting English language learning. Their participation was voluntary and required the signature of a guardian on the consent form. Once all consent forms were collected, the initial vocabulary test was administered in class. The scores from each subject were recorded by the teacher and were stored for future use. Each student had a smartphone or a tablet and downloaded the Duolingo app and after registration, all students were asked to complete the same lessons for consistency purposes so that the words and phrases learned were the same for each student.

After a six-week period, students were administered the same vocabulary test in English that was given at the start of the study. Once each test was completed and the scores were compiled, the teacher examined the scores for each student and measured any improvements or decline in English vocabulary proficiency that occurred. Upon examination of the two scores for each student, a follow-up survey regarding the study was also administered to students in Turkish to obtain feedback regarding the study. The feedback would be used in conjunction with the test results to summarize the benefits and challenges of the study as well as any limitations that were observed when working with the students.

### Findings

The study included 20 student participants including 11 females and 9 males. All study participants (100 percent) completed both vocabulary tests as well as the feedback survey. Of the 20 students, 80 percent, (n=16), including 9 females and 6 males, improved their vocabulary scores from the first test at the onset of the study. In addition, they reported on the survey instrument that the Duolingo app made a significant difference for them in learning the English vocabulary more effectively. They also believed that with continued use of the Duolingo app in the classroom and on their own time, their vocabulary would expand greatly in the future. At the same time, they noted that teacher instruction is important to them and that a structured environment is necessary to learn the language and to ask questions of the teacher that will guide them in improving their language skills.

For the 4 students (20 percent) who did not perform better on the second test, their test scores remained the same or slightly declined from the first test. In addition, they reported on the feedback survey that while they enjoyed using the app, they did not believe that it was entirely successful in improving their English vocabulary. For the students who did not improve, some of the same words were missed consistently on each of the four tests and they appeared to confuse words that were close in spelling and pronunciation. The feedback surveys for these students



indicate some degree of frustration and the need for additional instruction because they believe that learning the language is very important and necessary in their lives.

### Discussion

In the study, the use of Duolingo several times per week independently as well as once per week in the classroom was effective in improving English language proficiency for most students. Based upon the 20 student participants, 80 percent (n=16) improved their scores when administered a brief, written vocabulary test of 15 words based upon the scores of the same test given at baseline. The results indicate that many of the students benefit from the use of the Duolingo app in the classroom and on the go because it allows them to practice English vocabulary at home or in another location where they feel comfortable. It was also evident that for the students whose test scores stayed the same or declined, additional instructional options must be available to enable them to better grasp the English vocabulary or to have additional time using the Duolingo app beyond what was required.

Learning a second language such as English may be very difficult for some learners who are only comfortable with their primary language and have not gained adequate exposure to English in their daily lives. Therefore, students may not understand where to begin when learning a new language and how classroom instruction will translate into real-world settings. With this challenge, it is important for teachers to consider different options in teaching English that will motivate students and provide them with the resources that are necessary to learn the language effectively and to gain greater comfort with it at school, at home, and in other social settings. Based upon this study, it is evident that the adoption of smartphone apps provides significant value to students and enables them to gain greater comfort with a foreign concept using a device with which they are very familiar. The smartphone language app allows students to apply what they learn in the classroom to their learning elsewhere and by using their phones or tablets to do so, they will learn the language with greater ease.

The development of English language skills requires continuous practice to enable students to build upon the lessons learned and to take on the language in a complex manner. However, this process is not expected to be instantaneous and requires significant time and effort by the student during personal time as well as with classroom guidance. Proper instruction prior to using the app is of critical importance and it is important for students to apply their knowledge in gaining comfort with English in their daily lives. Practicing English words in speaking with teachers, students, and family members is important and by applying the lessons learned using the app, it is possible for students to increase their English proficiency over time.

### Conclusion

Learning English as a second language is a very challenging prospect for many students who have mastered their native tongue but have not acquired secondary language skills. Teachers have many creative options available to them to educate their students in English, including the ability to blend traditional classroom instruction with different technologies. It is likely that students will improve their skills with technologies when

they are integrated appropriately into the instructional model. Therefore, mobile apps that are available on smartphones and tablets have become increasingly popular to supplement traditional instruction in the classroom and in the home environment. The application of a mobile app to acquire English language skills may be highly beneficial for students who are comfortable with using smartphones and can allow for continued instruction beyond the classroom experience.

In evaluating the use of the Duolingo app by a group of ninth grade students learning English, it was determined that this type of application is effective in supporting students' English language skills as a supplemental option. The app enabled students to learn new words and phrases and to improve their pronunciation skills. The use of Duolingo several times per week on the go as well as once per week in the classroom, increased students' comfort with the English language and in improving their understanding of some of the most commonly used words and phrases. Despite the benefits of this app with continued use, it should not serve as the only source of instruction to learn the English language. Rather, it should serve as a supplemental tool to enable students to grasp the language and to improve their skills throughout the course and beyond. Duolingo and other applications should be evaluated closely by teachers providing instruction in English as a second language because it can play a valuable role in shaping the learning dynamic for students who do not speak English as their primary language.

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