# The Impact of the Voscreen Application on Vocabulary Achievement

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**Abstract**

Internet is such an indispensable phenomenon, especially in educational practices. However, many teachers and students cannot benefit from Internet technologies. The resources allocated by the Ministry of National Education to schools are very limited, especially in terms of listening. This study implements the use of Voscreen to increase listening and comprehension skills in the 4th grade. This study aims to draw attention to the fact that the use of Voscreen enhances students' listening and comprehension skills by exposing them to the target language outside the school. The sample consists of a total of 50 people, 25 experiment and 25 observation groups. The Pretest-posttest method was applied, and the Voscreen application was used in the experimental group for three days a week for five weeks. The findings reveal that the listening and comprehension skills of the students in the experimental group have been improved significantly through the interaction with the target language via this target application.

**Keywords:** Technology; mobile-assisted language learning (MALL); vocabulary achievement; Voscreen

## Introduction

Education and technology are two basic aspects that play a key role in making life efficient and productive for individuals (Bozkaya et al., 2012). The recent phenomenal shift in English teaching patterns has centered primarily on improving learners' language skills with the help of new technical resources such as hardware, software, the Internet, and mobile technologies (Singh, 2019). Due to the exponential developments of wireless and mobile learning technologies, the use of cell phones and other carriable devices is now starting to affect language teaching and learning worldwide. Likewise, recent advances in language learning technology have appeared to be activated, compact, and customized. Such developments have contributed to the transition of learning modes from conventional classroom learning to online learning (E-learning), mobile learning (M-learning), or ubiquitous learning (U-learning) (Begum, 2011).

Arising as creative approaches to the problem of "how can I learn more effectively, educational innovations " change as a result of day-to-day external factors (Göktaş et al., 2012). Mobile learning is efficient and versatile among all noble types of learning; that is, mobile learning can resolve time and space constraints, allowing learners to study whenever and wherever possible (Chen & Chung, 2007). Learning through mobile phones or M-learning offers learners the ability to study, for instance, as they commute to work or at their workplaces doing their part-time jobs; indeed, time and space of learning can hardly be regarded as constraints (Nezarat & Miangah, 2012). However, Saran and others (2009) point out the insufficiency of research on the use of smartphones in the light of language learning.

As the access to wireless networks grows and the ownership of smartphones that can connect to these networks increases, mobile devices in support of language learning are becoming more and more common. Mobile-assisted language learning (MALL) differs from computer-assisted language learning (CALL) in the use of portable tools to require new ways of learning to emphasize the consistency or spontaneity of access and interaction through various user contexts (Kukulska-Hulme & Shield, 2008). When high-capacity mobile phones reach all areas of human life, this wireless computing system is expected to quickly become available to both urban and rural areas of each nation. So, broad access to such an affordable and elegant device has in many ways changed the landscape of e-learning. Mobile devices are not alternative for current teaching devices but serve as an enhancement for learning in new environments with new features (Miangah & Nezarat, 2012). The integration of such technologies into teaching and learning has been more incremental. Teachers need to comprehend how they can be used effectively to support different types of learning and develop effective methods and materials for mobile-assisted language learning (MALL) (Viberg & Grönlund, 2012).

Web 2.0, on the other hand, a second-generation of World Wide Web, a possible way to communicate and share information online easier, is a web technology developed to enhance creativity, content exchange, and user participation. The keywords in this definition of creativity, exchange of knowledge, and teamwork also reflect how English language instruction should be used in education in this situation. Teachers will consider a great many Web 2.0 resources on the internet that can be used in language teaching. Such tools can make language teaching and learning experiences engaging and interactive (Başal & Aytan, 2014). One of these tools is Voscreen. It is a highly innovative way to help learners improve their English language skills on their own, without the express need for outside instruction. Moreover, it can also provide teachers the tools needed to develop their students' language skills in an engaging, interactive, and challenging way (Saran et al., 2009; Taylan, 2018; Verdugo & Belmonte, 2007; West & Turner, 2010).

Besides the skills, English vocabulary establishes an incredibly important part in language acquisition and learning. Numerous learners consider it difficult to memorize English vocabulary, particularly when long, complex, and infrequent words are concerned. A poor vocabulary also leads to confusion or poor comprehension of the content. Inasmuch as English has become the most important second language in non-English speaking countries, a key issue in the field of English language education has been the development of modern assistive learning forms or resources that promote the successful acquisition of the language. Recently, several mobile learning strategies have been actively suggested to aid out-of-class language learning initiatives and use cell phones to promote language learning (Chen & Chung, 2008).

As previously stated, educational research stresses that in-class tasks are not adequate for successful learning and that training and practice procedures should often be performed outside the classroom (Koren, 1999). Although many teachers share this issue, students do not make much effort to study outside of class. The biggest factor for this may be the lack of intrinsic incentive for the learners to start learning. Many educators communicate the importance of motivation for successful learning. As such, for many students, the push element of smartphone technology will break down certain motivational barriers to learning. Thanks to their widespread use and features such as networking, localization, and personalization, smartphones provide enormous potential for out-of-class learning. (Saran et al., 2009).

A number of online applications, along with all these innovations, have begun to appear in foreign language education. One of them is Voscreen, which is a highly creative way to help learners develop their English language skills by themselves, without the need for external guidance. Moreover, it can also provide teachers with the tools needed to develop their students' language skills in an engaging,

interactive, and challenging way. Voscreen is based on its own method of learning and approach built by careful work on the process of learning the native language and the acquisition of environmental languages.

There seems to be little research about the use of smartphones in the language learning context (Saran et al., 2009). Throughout these ways, this research seeks to make a valuable contribution to the literature. Thus, the current study's main goal is to examine the possibility and efficiency of using smartphone applications in foreign language education. More precisely, the results of using Voscreen via smartphones to improve the vocabulary achievement of the 4th-grade young learners. Parallel to these, this research seeks to answer the following questions:

- Is Voscreen application an effective tool to improve 4th-grade young learners' vocabulary achievement?
- How does the Voscreen application have a feature of being an educational innovation on the 4th-grade experiment and observation groups in terms of vocabulary achievement?
- To what extent do some variables (such as *group, gender, technological device possession, and taking extra classes)* have an impact on the 4th-grade experiment and observation groups in terms of vocabulary achievement?

## Method

### *Research design*

A quasi-experimental design in which "the participants are not randomly assigned" is used in this study (Creswell, 2014, p. 215). Furthermore, *combination designs*, one of the quasi-experimental designs that require a pre-test/post-test both on experiment and observation group, have been followed as procedures. The reason for *combination designs'* supremacy does not lie behind whether the treatment improves the experimental group's conditions but whether the experimental group participants improve *more* than the participants in the observation group, which is the way to apply the pre and post-tests for each group. In addition to these, quantitative data collection often involves gathering data, usually numerical, and aims to use statistical models as the technique for interpreting the results has been utilized to quantify and statistically process information with a view to support or refute alternative claims to knowledge (Williams, 2007).

### *Participants*

The study comprised 50 4th-grade students who received education at a public primary school in Turkey. Participants were randomly selected to gather a representative sample for this study. The participants had been taught English for 2,5 years. The participants were between 9 and 10 years of age. The participants were divided into two groups: the 25-student experimental group and the 25-student control group. While students in the experimental group were exposed to Voscreen, the independent variable of the study, students in the control group were not exposed to this independent variable. The vocabulary teaching and learning practices in the control group were conducted conventionally as normally without including any technological applications in or out of the classroom.

The total number of girls and boys in the study is almost equal, and gender distribution in the groups showed random parallelism (Table 1).

**Table1.** Groups and gender crosstabulation

| Gender in Groups | | | Female | Male | Total |
|---|---|---|---|---|---|
| Group | Experiment | f | 12 | 13 | 25 |
| | | % within gender | 48 | 52 | 50 |
| | Observation | f | 13 | 12 | 25 |
| | | % within gender | 52 | 48 | 50 |
| | Total | f | 25 | 25 | 50 |
| | | % within gender | 100 | 100 | 100 |

It is understood from this table that the gender distribution between groups is parallel in this direction, as well as the total number of girls and boys is almost equal. As the table shows, the experimental group consists of 48% female students with the frequency of 12, while 52% of them with the frequency of 13 are male students. This information is followed by female students with 52% frequency 13 information and male students with 48% 12 frequencies of the observation group.

The students in the groups were asked whether they had a tablet or a personal computer in their home to understand how close they were to technology (Table2).

**Table2**. Technology and group crosstabulation

| Technological Devices the Participants Have | | | Group | | Total |
|---|---|---|---|---|---|
| | | | Experiment | Observation | |
| Technology | No PC or Tablet | f | 3 | 8 | 11 |
| | | % within group | 12 | 32 | 22 |
| | PC or Tablet | f | 22 | 17 | 39 |
| | | % within group | 88 | 68 | 78 |
| | Total | f | 25 | 25 | 50 |
| | | % within group | 100 | 100 | 100 |

As can be seen in the table, 88% of the experimental group, with a frequency of 22, has their own PC or tablet; but only 12% with a frequency of 3 do not have their own PC or tablet. In the observation group, the difference between the variables is relatively less with the values of having a PC or tablet 68% with the frequency of 17 and not having a PC or tablet 32% with the frequency of 8.

The students were asked whether they had any course or went to a study center where they took English lessons outside the school to be able to predict their interaction with the language (Table 3).

**Table 3.** Courses and group crosstabulation

| Students Attending an out-of-School Course | | | Group | | Total |
|---|---|---|---|---|---|
| | | | Experiment | Observation | |
| Courses | No Extra Classes | f | 21 | 16 | 37 |
| | | % within group | 84 | 64 | 74 |
| | Take Extra Classes | f | 4 | 9 | 13 |
| | | % within group | 16 | 36 | 26 |
| | Total | f | 25 | 25 | 50 |
| | | % within group | 100 | 100 | 100 |

As shown in the table, the number of students attending out-of-school courses in the experimental group is very limited. Only 16% of the students with the frequency of 4 attend out-of-school courses; meanwhile, in the observation group, 36% of the students with the frequency of 9 attend those

courses. Although the number of students attending out-of-school courses in the observation group is higher than the experimental group, this number still corresponds to less than half of the observation class. The table reflects that 84% of the experiment group students and 64% of the observation group students do not attend any extra courses.

***Data collection***

First of all, in the data collection process, the voluntary participation of the foreign language learners was taken into consideration. Since the data collection required the learners to use mobile devices, the parents were informed about the process and observed the students while they were in interaction with the target application. As important as these procedures, the approval from the Social Sciences Ethical Committee of Amasya University in order to commence and complete the data collection was taken despite the calendar delay due to the Covid-19 obstruction in official correspondence.

Meanwhile, to collect data, a 50-question achievement test with listening tracks was prepared. Each question has a listening track in English and a two-choice answer in Turkish below. As they are young and have a limited English background, the options are given in Turkish to make sure they understand what they hear. Listening tracks have been selected from the content that students have seen so far. The pre-test was applied to students at school in March 2020. Each listening track was played twice, and then the students were asked to answer within 20 seconds. After the pretest, parents of the experiment group were contacted and asked to download the Voscreen application to their smartphones. Then, students in the experimental group were asked to play the Voscreen Level1 part 4 days a week for five weeks. Through the virtual classroom created on the application, 25 students were checked regularly every week, those whose studies were lacking were controlled, and they were provided to complete the study. At the end of the 5$^{th}$ week, due to the closure of schools as a result of the covid-19 pandemic, the post-test was carried out online, not in the school setting, for both the observation and the experimental groups at the end of April 2020. The online post-test was carried out through the Quizizz application. Quizizz is a learning platform that helps teachers turn homework and tests into self-paced games. Questions and answers are shown on students' own devices. When students answer questions, they are presented with different memes depending on their response accuracy. Teachers can view the progress and data of every student in the classroom which is great for student learning assessment. Quizizz is also very easy to use. The teacher determines a quiz to begin, and a game code is provided by the website. Students visit join.quizzizz.com and finally enter the game code, along with their names (Chaiyo & Nokham, 2017).

In order to increase the reliability and validity of the study, parents were asked to take videos of the children while solving the post-test. Moreover, the reliability statistics of achievement tests are illustrated below:

**Table 4.** Reliability statistics

| Achievement Tests | N of Items | Cronbach's Alpha |
|---|---|---|
| Pre-Test of Experiment and Observation Groups | 50 | .70 |
| Post-Test of Experiment and Observation Groups | 50 | .80 |

As illustrated in the reliability statistics table above, the pretest of the experiment and observation group has reached .70 reliability level. This means that the internal consistency of the pre-tests is at a good level. When the post-test reliability results of the experiment and observation group are

analyzed, it is seen that the Cronbach Alpha level increased to .80. Regarding all these calculations, it is seen that the internal consistency has increased at a more desired level.

***Data analysis***

The quantitative method was used in this study, and a multiple-choice pre/post-test was applied. By using SPSS, which is used frequently for the statistical analysis of social sciences, the reliability of the tests was measured. The results were analyzed by independent samples t-test, paired-samples t-tests, two-way ANOVA, and regression analysis to see if there is a meaningful difference between the pre-test and the post-test and evaluate these differences. In the data analysis procedures of the current study, parametric statistics were chosen because in the study, quantitative data is used, and this data is randomly selected from a normally distributed population. The findings were presented in the findings section together with descriptive statistics.

**Findings**

This section aims to present the scientific results of this research. The analysis provided a series of t-test and two-way ANOVA results for the experiment and observation group students' pre and post-test implementations to see if there is a meaningful difference.

**Table 5.** Independent samples t-test results for pre-observation/experiment and post-observation/experiment groups

| Groups | N | $\bar{X}$ | S | SD | T | p |
|---|---|---|---|---|---|---|
| Pre-Observation | 25 | 64.64 | 11.77 | 48 | .72 | .474 |
| Pre-Experiment | 25 | 62.24 | 11.75 | | | |
| Post-Observation | 25 | 68.24 | 8.69 | 48 | 5.71 | .000 |
| Post-Experiment | 25 | 84.16 | 10.91 | | | |

As seen in the table, there was no significant difference between the pre-tests (p **< .05),** while there was a significant difference between the post-test (p > *.05).* On the other hand, the mean value ($\bar{X}$) in the table showed a significant difference for the experimental group, but not for the observation group. Increasing from 62.24 to 84.16, this value shows that the use of Voscreen positively affected the listening and comprehension levels of the experimental group.

**Table 6.** Paired samples t-test results for pre/post-observation and pre/post-experiment groups

| Groups | N | $\bar{X}$ | S | SD | T | p |
|---|---|---|---|---|---|---|
| Pre-Observation | 25 | 64.64 | 11.77 | 24 | 1.72 | .098 |
| Post-Observation | 25 | 68.24 | 8.69 | | | |
| Pre-Experiment | 25 | 62.24 | 11.75 | 24 | 12.07 | .000 |
| Post-Experiment | 25 | 84.16 | 10.91 | | | |

A significant increase was observed between the pre-test and post-tests of the examination group, although there is little increase in the pre and post-test results of the observation group and the pre and post-test results of the experimental group, and there is no significant difference for the pre and post-tests results of observation groups (.098).

**Table 7.** Two-way ANOVA descriptive statistics of pre/post-experiment group regarding technological device possession and taking extra classes

| Technological Device | Extra Classes | N | Mean | Std. Deviation |
|---|---|---|---|---|
| No PC | No extra classes | 2 | 53.00 | 12.73 |
| | Taking Extra Classes | 1 | 42.00 | . |
| | Total | 3 | 49.33 | 11.02 |
| Having PC | No extra classes | 19 | 63.05 | 9.92 |
| | Taking Extra Classes | 3 | 70.00 | 17.44 |
| | Total | 22 | 64.00 | 10.92 |
| Total | No extra classes | 21 | 62.10 | 10.29 |
| | Taking Extra Classes | 4 | 63.00 | 19.97 |
| | Total | 25 | 62.24 | 11.75 |

Two-way ANOVA descriptive statistics of pre/post-experiment group regarding technological device possession and taking extra classes defines categories of technological devices and extra classes scores by including the mean values and standard deviation of each category. According to Table 7, the technological device title has two different sub-categories, and the extra classes title has two different sub-categories. It is seen in the table that the mean values of the children who take extra courses and have technological tools are at the highest value with 70.00. It was observed that students who have technological tools but do not take extra courses follow this value with 63.05. It is seen that while the mean value of children who do not have technological instruments and who do not attend extra courses which are 53, the mean value of children who do not have technological instruments and don't take extra courses is 42, as shown in the table.

**Table 8.** Two-way ANOVA results of pre/post-experiment group regarding technological device possession and taking extra classes

| Group | Source | SS | df | MS | F | p |
|---|---|---|---|---|---|---|
| Pre-Experiment | Technological Device | 767.778 | 1 | 767.778 | 6.35 | .020* |
| | Taking Extra Classes | 8.708 | 1 | 8.708 | 0.07 | .791 |
| | Technology*Class | 170.792 | 1 | 170,792 | 1.41 | .248 |
| | Error | 2540.947 | 21 | 120.997 | | |
| | Total | 3314.560 | 24 | | | |
| Post-Experiment | Technological Device | 1211.852 | 1 | 1211.852 | 15.71 | .001* |
| | Taking Extra Classes | .392 | 1 | .392 | 0.01 | .944 |
| | Technology*Class | 117.080 | 1 | 117.080 | 1.52 | .232 |
| | Error | 1619.404 | 21 | 77.114 | | |
| | Total | 2855.360 | 24 | | | |

Two-way ANOVA results of pre/post-experiment group regarding technological device possession and taking extra classes clarifies that in terms of gender, there is no difference between the pre/post-tests of the observation group and the pre/post-tests of the experiment group (p= .791, .248, .944, .232). Also, no difference was found between pre-tests of observation/experiment groups and post-tests of observation/experiment groups. In addition, it is seen that pre/post-test results of

the observation group do not differ in terms of having technological devices and going to extra courses. However, it is understood that the pre/post-experiment scores of ANOVA results differ significantly in terms of having technological devices (p= .020, .001).

**Table 9.** Multiple linear regression results of post-test regarding group, gender, technological device possession, and taking extra classes variables

| Predictors | B | Sd. Er. | Beta | t | p |
|---|---|---|---|---|---|
| (Constant) | 50.322 | 6.298 | | 7.990 | .000 |
| Gender | -2.615 | 2.623 | -.104 | 0.997 | .324 |
| Group | 14.616 | 2.756 | 0.584 | 5.303 | .000* |
| Technological devices | 9.075 | 3.266 | 0.300 | 2.778 | .008* |
| Extra classes | 3.076 | 3.074 | 0.108 | 1.001 | .322 |
| R=0.71, F (4,45)=11.629, | $R^2$=0.508 p=.0000 | | | | |

According to this table, post-test scores are in a highly significant relationship with gender, group, technological devices, and course-taking variables (R = 0.71, $R^2$ = 0.508, p <.01.). Together, the four variables mentioned explain about 51% of the total variance. According to the standardized regression coefficient (Beta), the relative importance order of the predictive variables on the post-test is the group (observation-experiment), technological devices, course-taking, and gender. When the t-test results regarding the significance of the regression coefficients are examined, it is seen that having only technological devices with the group (observation-experiment) is a significant predictor of post-test results. Gender and taking courses do not have a significant effect.

**Discussion**

This research was conducted to investigate whether MALL tools are effective in increasing the listening and comprehension skills of young learners and to measure the adequacy of Voscreen application, especially in this field. Students selected from fourth-grade students were divided into two experimental and observation groups. Then, the Voscreen application was studied with the experimental group for five weeks. At the end of 5 weeks, changes in the observation group and experimental group were examined.

In accordance with the findings of the study, the mean value of students in the experimental group increased from 62.24 to 84.16. This rise shows us that the Voscreen application has a positive effect on improving listening and comprehension skills. The absence of a significant change in the observation group also supports this interpretation. So, it can be said that watching movies and videos in English can improve listening and comprehension skills in foreign language education (Taylan, 2018). Singh also (2019) discussed the influence of captioned videos on the development of EFL learners' vocabulary development, which shows parallel results as found in this study.

Moreover, the findings of this study indicate that having technological devices influences listening and comprehension skills positively. While the mean values of students who have technological tools are between 63-70, the mean values of students who do not have technological tools are between 42-49. Based on this, it can be said that having technological devices increases the exposure rate to authentic English and has an effective role in developing listening and comprehension skills. The use of technology in the English listening exercise system can improve the ability of learners to listen and comprehend in English to a high degree (Miangah & Nezarat, 2012).

English as foreign language learners who barely use English in their daily lives, moreover, their learning, which is very limited, most likely depends on class interaction only (Cahyani et al., 2019).

Driven by modern life's mobility, language learning is nowadays boundless to classrooms and textbooks (Al-Kadi, 2018). According to recent studies, the majority of the students own and frequently use mobile phones in their lives. Having technological devices in educational environments can help inspire learners and help solve the challenges teachers or parents face to get learners to continue learning (Saran et al., 2009). The regression results of this study show that having technological tools determines 51% of the scores obtained from technology integrated applications like Voscreen.

This study shows that education systems that can keep up with the developing technology positively affect students' linguistic development. It is a natural and necessary process for the z generation born in this constantly developing technology to use Web 2.0 technologies and MALL tools in the field of education. Since the post-test part of this study had to be done at home because of covid-19, children were asked to shoot and send videos while solving the post-test to increase the reliability of the study. In the videos, it was observed how comfortable and natural the children were in the Quizizz application even though they were using it for the first time and even had fun while solving the test. Tılfarlıoğlu (2011) performed a research study to assess the attitudes of undergraduate and high school students towards using English in Web 2.0 technology. This showed that the students were extremely optimistic about using Web 2.0 tools and were considered to be very useful learning methods to exercise the language in a real-life situation (Tılfarlıoğlu, 2011).

**Conclusion and Suggestions**

Mobile devices, particularly mobile phones, have become increasingly popular in day-to-day learning. Thus, incorporating these tools into the learning process by the structured use of suitable programs has become important (Ekinci & Ekinci, 2017).

This study investigated whether MALL tools are effective in improving the listening and comprehension skills of young learners and whether the Voscreen application plays an educational role in improving these skills. The findings obtained as a result of the research showed that MALL tools are effective in developing listening and comprehension skills, and Voscreen application can be used in the field of education to develop these skills.

The 21st century is the era of technical innovation, and the latest change in English teaching is the use of new technological technologies because the use of such resources has significantly influenced English language teaching. Digital technology such as web pages, YouTube, Skype, Instagram, forums, smartphones, digital boards, and many more have provided stimulation not only to the interaction of learners but also to real interactivity within the classroom (Chhabra, 2012). In this study, the contribution of the use of technological tools to the language development of students was clearly seen.

One of the limitations of this study was that most of the study was out of school, so the effect of parents on this process, which the students must undergo individually, could not be known. In addition, the lack of internet in some students' homes has also created problems. Since the research was conducted in a school in the city center, all students had a smartphone or a personal computer, but the implementation of the same research in rural areas can be difficult in terms of accessing the same technology, and the results might differ and would come out with significant contributions to the studies under the scope of MALL contexts.

To this end, this sample study may be repeated with more participants to make the results more prevalent. By extending the working time with Voscreen, students' listening and comprehension skills in the application can be increased from Level 1 to Level 3 because, as for the Covid-19 outbreak, it was unfortunately impossible to observe the difference between the other levels of the application.

Meanwhile, other MALL applications can be tested and implemented to understand to what extent they have influences on foreign language learning or teaching outside or inside regular language classrooms on the grounds that future learning and teaching environments transform into a mobile shape at a very high speed from now on with the latest changes in the world!

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