

Do Smartphones Spur or Deter Learning: A WhatsApp Case Study

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ABSTRACT Smartphones have been threatening traditional teachers and classroom conventions, although students insist on referring to them when stuck or feel they are bored with the teaching approach in the classroom. The inclination is towards the integration of smartphones into traditional teaching. Therefore, this study aims to search the use of WhatsApp Messenger and see its effects on student success in the EFL context. The study compares the control group with the experimental group for the teaching of listening and pronunciation courses. The results show that a significant success difference cannot be mentioned between the groups. It also indicates that interactive applications such as WhatsApp Messenger increase the homogeneity of the students' success. The findings also suggest that a combination of traditional and technology supported approaches could work better.

INTRODUCTION

Smartphones are being used in every part of the life. The number of smartphone users worldwide will surpass two billion in 2016, according to new figures from eMarketer. So far none of the researches for 2016 have not given the 2016 statistics for the smartphone use. According to the research conducted by the Turkish Statistics Institution (TUIK) in 2015, 96.8 percent of people in Turkey have smartphones. Smartphones are popular among the young generation for chatting, SMS exchanging and web surfing. The number of applications on android and iOS is increasing day by day and there are a lot of opportunities in the technology market. Education has somehow been covered by technology very rapidly and widely. This makes it very difficult for education to resist the use of smartphones in classrooms. While some teachers try to ignore the existence of smartphones, most of the students insist on depending on them overtly or covertly in and out of the classes.

This study aims to investigate the contribution of smartphones in ELF context. There are several reasons to motivate this research. First, the potential relationship between cell phone use and academic performance is not clear (Lepp et al. 2015). Second is that research tends to measure personal attitudes of learners rather than the use of smartphones as a part of the education. The last reason shaping this study is lack of research on the use of smartphones

in Turkish EFL context as a teaching or learning material.

Smartphones have been connecting people, creating chances to know and learn things that are new, interesting or common. It is evident that smartphones dominate one's daily life and more than ever WhatsApp has become a driving force (Montag et al. 2015). Although research highlights that people exchanging conversations in the absence of mobile devices have higher levels of emphatic concern (Misra et al. 2016). Mitthlal (2014) reports that it is practical to build smartphone based social proximity based applications where proximity can be achieved much more than at the physical location. Xu et al. (2014) extends the use of smartphones to propose a meeting support system, which they have named SmartMic, to enhance user experiences and facilitate social interactions during meetings. Lane et al. (2014) states that smartphone sensing and feedback features enable a new generation of wellbeing applications to monitor multiple aspects of physical and mental health of the users. They present a new application BeWell, which monitors user behavior along three health dimensions of sleep, physical activity and social interaction. Their findings show that not only can BeWell+ operate successfully on consumer smartphones, but also users getting the feedback can take precautions about leading healthier lifestyles. What is more popular is smartphone gaming in particular among gen Y (Banerjee et al. 2015). To sum up, studies

are favoring the use of smartphones and the market is getting bigger and bigger day in day out.

Smartphones in education can be mentioned as well. They have already taken their places in education in a vast amount. University students use smartphones either for the exchange of academic information or for educational purposes outside the campus (Vázquez-Cano et al. 2015). Although some students find it frustrating, many students believe that smartphones supply opportunities for collaboration, as well as allowing students to engage in content creation, communication and collaborative learning (Gikas et al. 2013). Research done by Marston et al. (2014) indicates that besides students, both college educators and employers should start using smartphones for education and training purposes. Smartphones also contribute to distance learning programs by fostering collaborative work among students and professors (Vázquez-Cano 2014). The digitalized syllabus places smartphones at the center of the educational context.

Agreeing on the issue that smartphones are showing themselves in any area, the narrow scope of this study is choosing one of the most common smartphone applications and studying its use in the Turkish EFL context. The application this study focuses on is WhatsApp Messenger. WhatsApp Messenger, a registered trademark of WhatsApp Inc., is a mobile messaging application that allows one to exchange written and sound recorded messages as well as photos and videos. WhatsApp Messenger works well with iOS, Android, Blackberry and Windows Phone mobile operating systems and users have no problems with using WhatsApp even if they use different operating systems. The need to communicate and interact in and out of the classroom partly is met by web 2.0 technologies and WhatsApp is the most common application people use for any purpose ranging from social exchanges to video or photo sharing.

For a fruitful learning it is not enough to depend on the traditional teaching materials and putting away the new materials and applications the technology presents every day. Teachers and syllabus designers use new materials and add technology to tradition. These materials are generally computers, projectors and software programs. Smartphones in the classroom are new and open to many arguments. In this sense the

need for the research on smartphone applications especially WhatsApp Messenger increases. Research should focus on the contributions and drawbacks and possible effects of the WhatsApp application in EFL context.

Literature Review

This section reviews the research on WhatsApp as a tool for communication and interaction between students and teachers in general and the effects of WhatsApp in education, more specifically in EFL context. Although WhatsApp is very popular and wide in social interaction, its use in education is fairly limited.

Research shows that WhatsApp is extensively used in healthcare (Willemsse 2015; Kaliyadan 2016; Dorwal et al. 2016; Johnston et al. 2015) for communicative and interactive purposes. For example, Wani et al. (2013) used WhatsApp Messenger for patient management and as a tool for academic endorsements. Robinson et al. (2015) analyzed WhatsApp for social communication and found that it offers benefits over embedded social media platforms such as discussion boards.

There exists any but very small number of studies on educational context with the use of WhatsApp messenger. One of the few studies is Barhoumi's (2015) research. He discusses the effects of WhatsApp mobile learning activities guided by activity theory on students' Knowledge Management (KM). He conducts an experimental approach-based comparison between an experimental group (34 students) and a control group (34 students). His experimental group takes weekly 3 hours of learning-2 in class and 1 through WhatsApp messaging. The t-test comparison of the means of the control and experimental groups in the test and the students' attitudes is at 0.05 alpha levels. His research is useful for exploring the effectiveness of mobile technologies in supporting blended learning courses.

Research shows that the WhatsApp application is almost not a learning tool used or tried in education and despite its limited use in educational context, it is mainly used in writing skills in ELF context. For example, Fattah (2015) used WhatsApp Messenger to search its effect to develop students' writing skills. He used WhatsApp Messenger with the experiment group and the prescribed textbook with the control group to develop writing skills in EFL context. After

pre-post-test (t-test) analysis, the results showed that WhatsApp using yielded significant effects on students' writing skills, that is, the experimental group outperformed the control group. Another research conducted by Perez (2015) takes a writing skill to search but her study does not focus on teaching but is a descriptive study analyzing new trends in digital communication by observing if the language used in WhatsApp text interactions constituted a new language variety. She finds that age is a determining factor in the pervasive use of non-standard language. Another interesting study is by Vázquez-Cano (2015). He conducted a research to analyze the most relevant linguistic and paralinguistic characteristics of Spanish teenagers' digital writing in WhatsApp and his results show that digital writing in WhatsApp has special orthographic and audio-visual characteristics conditioned by usage of variables such as size of the device display, hours of conversation, and relationship between speakers.

To deal with the subject in EFL context, it is necessary to define the learner and teacher roles in language learning. In the domain of English Language Teaching (ELT), several methodologists (Littlewood 1981; Richard and Rodgers 1986; Tudor 1993; Harmer 2001 cited in Choudhury 2011) suggested many roles for teachers such as facilitator, classroom manager, a consultant and a tutor. Teacher roles in EFL context vary from making the course easy to understand, directing the learners, guiding and giving feedback when students cannot go further. Learners are also given a wide range of roles such as monitoring, evaluating, tutoring, and interacting with their peers. They learn from their teachers and friends from other teaching sources (Richard and Rodgers 1999). From this point of view, it can be concluded that blended learning is achieved with the contribution of both teachers and learners collaboratively.

Consequently, the literature given above provides several impressions. First, either educational or social, it is widely agreed that WhatsApp messaging is a useful tool for interaction and communication. Second, WhatsApp Messenger has not been considered to be used in education yet, studies are very few in EFL context, and the research focuses on writing skills. Third is very interesting that WhatsApp messenger has not been viewed to be used in oral skills although it has audio and visual features.

Accordingly, this study focuses on two research questions:

- 1) What is the relationship between smart-phone use and students' achievements in listening and pronunciation course?
- 2) Does the use of WhatsApp Messenger help learners acquire phonetic rules and improve their listening skills?

METHODOLOGY

Participants

Participants in this study were first year students enrolled at Balıkesir University, Necatibey Education Faculty English Language Teaching program. They took the Listening and Pronunciation I course in two groups. Group A comprised of 23 and group B had 22 students, and hence a total of 45 students formed the sample size for the study.

Instruments

Data collection instrument consisted of pre and post-tests applied to the students before and after the teaching program.

Data Collection and Analysis

Students taking the Listening and Pronunciation I course joined this study. Before the study, significance, purpose, research methodology, rationale behind subject choice, research ethics and the role of the researcher were explained to the students. The study was conducted during the fall term of the 2014-2015 academic year.

After the researcher explained the study and participant rights, students in group A were asked to download WhatsApp Messenger onto their mobile phones. They were also asked to join the WhatsApp Group created by the teacher. Students were instructed for four weeks for the following subjects in the classroom and out of class activities and were done through WhatsApp Messenger. After each week's instruction students were given tasks to complete and share through the WhatsApp Messenger group named Phonetics 1-A. As IPA fonts are not available for all smartphone systems, students followed the procedure below:

1. For transcription tasks, first they transcribed on their notebook, then took the photo and finally shared it with the group.
2. The teacher and students gave them feedback either by writing on a piece of paper and taking the picture or using the IPA fonts. The instructor used IPA fonts to motivate the learners and he also taught the learners how to download the fonts.
3. For the audio tasks students used WhatsApp Messenger's voice recording feature and shared their recorded pronunciation tasks with the group. The feedback again was either in audio or in text.

The procedure for the four weeks is outlined below.

Every week the instructor taught the transcription rules and contextualized them in transcription texts. Texts varied from short stories to news, from proverbs to anecdotes.

In the first week students were taught the phonetic alphabet, consonants, vowels and diphthongs. They were introduced to phonetic transcription of letters, words and short sentences. After instruction, students watched the Harry Potter movie. The WhatsApp task was to choose three sentences from the movie and write the phonetic transcription and to pronounce those sentences and record them. In the second week, students were asked to choose a short poem and transcribe, pronounce and share it on the WhatsApp Messenger group. During the third week, students were asked to choose a song and transcribe, pronounce and share it on the WhatsApp Messenger group. In the fourth week, after introducing the students how to write curriculum vitae (CV) with samples, they were asked to transcribe, pronounce and share their CVs on the WhatsApp Messenger group. All students in the WhatsApp group had the responsibility to give positive or negative feedback to their classmates. In and out of the classroom the students used WhatsApp Messenger to discuss, follow or ask questions about theirs and their classmates' tasks. The instructor took the role of a consultant and students asked the teacher when they got confused. When a rule was ignored or neglected or could not be induced properly by the entire group, the instructor gave an explicit explanation.

Group B students were instructed traditionally. They were instructed with the abovementioned

rules in the classroom but they were not asked to join the WhatsApp group. The same tasks were given to them as homework. Interaction was not carried out outside the classroom.

The data collected was analyzed using SPSS software. The Kolmogorov Smirnov test was used to analyze the results. The Independent Sample t-Test variance was computed to see the difference between the experimental and control groups. A Paired Sample t-test was computed to see if there is a significant difference between pre and post-test results for both pronunciation and listening skills. The Independent Sample t-test analysis was computed to compare the post-test scores for listening skills.

FINDINGS

The findings obtained from this study are presented in two sub-sections as the comparison of pronunciation and listening pre and post-test scores. Findings about the analysis of variance test for normality were computed using the Kolmogorov Smirnov test. The results are shown at Table 1. Analysis results show that both listening and transcription scores have normality variance. Therefore, t-test analysis was computed to compare the groups.

Table 1: Normality analysis of listening and transcription scores

		<i>Liste- ning</i>	<i>Trans- crip- tion</i>
N		45	45
Normal Parameters ^{a,b}	Mean	3.47	9.64
	Std. deviation	1.392	3.220
	Most Extreme Differences	Absolute .160	.090
	Positive	.120	.090
	Negative	-.160	-.079
Kolmogorov-Smirnov Z		1.076	.607
Asymp. Sig. (2-tailed)		.198	.856

a. Test distribution is Normal

Analysis of Listening Skill Scores

Analysis of Pre-test Scores of Listening Skills Between Control and Experimental Groups

Independent Sample t-test analysis was computed to identify if there was a difference between the pre-test scores. The results are shown in Table 2. The pre-test scores of control and

experimental groups do not generate a significant difference in mean scores.

Analysis of the Pre and Post Test Scores of Listening Skills for the Control Group

Paired Sample t-test analysis was computed to identify if there is a difference between the pre-test scores of the control group for the listening skills. The results are shown in Table 3. The results show that there is a significant difference in favor of the post test scores ($t=-2.699$; $p<.05$). This shows that traditional teaching techniques applied to the control group have increased the students' success.

Analysis of the Pre and Post Test Scores of Listening Skills for the Experimental Group

Paired Sample t test analysis was computed to identify if there is a difference between the pre-test scores of the experimental group for the listening skills. The results are shown in Table 4. The results indicate that there is a significant difference between the pre and post-test scores

of the experimental group for listening skills ($t=-2.113$, $p<.05$). The post-test mean scores are statistically higher than those of the pre-test scores. This indicates that WhatsApp supported teaching has enriched students' listening skills.

Analysis of the Post Test Scores of Listening Skills for the Control and Experimental Groups

Independent sample t-test analysis was computed to identify if there is a difference between the pre-test scores of the control and experimental groups. The results are shown in Table 5. The results of the analysis indicate that there is not a significant mean score difference between the post-test scores of control and the experimental groups. Either WhatsApp supported or traditional teaching technique has no significant effect on student examination scores. However, the standard deviation for the experimental group decreased ($SD= 1.25$) and increased for the control group ($SD= .89$). In other words, the teaching technique created heterogeneity for control group and homogeneity for the experimental group. That is to say that the effect of

Table 2: Results of the comparison of control and experimental group listening skills pre and post test scores

<i>Listening</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>t</i>	<i>df</i>	<i>p</i>
Control	22	3.27	1.12	.239	-0.920	43	.416*
Experimental	23	3.65	1.61	.336			

* $p>.05$

Table 3: Results of the comparison of Control Group Listening skills pre and post test scores

<i>Control group</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>r</i>	<i>t</i>	<i>df</i>	<i>p</i>
Listening pre	22	3.27	1.12	.26262	.36	-2.699	21	.013*
Listening post	22	4.05	1.25	.26318				

* $p<.05$

Table 4: The comparison of pre and post test scores of experimental group for listening skills

<i>Exp.group</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>r</i>	<i>t</i>	<i>df</i>	<i>p</i>
Listening pre	23	3.65	1.61	.33627	-.04	-2.113	21	.046*
Listening post	23	4.48	0.90	.18724				

* $p<.05$

Table 5: The comparison of post test scores of control and experimental group for listening skills

<i>Listening</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>t</i>	<i>df</i>	<i>p</i>
Control	22	4.05	1.25	.26708	-1.327	43	.188*
Exp.	23	4.48	.89	.18724			

* $p > .05$

the teaching technique has caused diversity among the students on the control group but similarity among the students for the experimental group with regard to their success.

Analysis of Transcription Scores

As all pre-test scores were zero in both groups, it was not possible to compare and compute pre-test scores of the control and experimental groups. Comparison was made for the post-test scores of control and experimental groups for transcription abilities. Results are shown in Table 6. There is no significant difference between the post-test scores of the experimental and the control groups for transcription. Different teaching techniques applied in each group did not cause any difference between the student scores.

Several conclusions can be drawn from the statistical analysis above. First for the listening skills, students in both control and experimental groups have improved significantly after instruction. Second is that there is not a significant difference between the post-test scores of the control and the experimental groups. Furthermore, while the traditional teaching technique for the control group has affected the heterogeneity of the exam results of the control group, the WhatsApp supported teaching technique has influenced congruity among the exam results of the experimental group. The third is that pre-test scores had nothing to be computed, as all students in either group did not have any success to be measured for the transcription course. Finally, the analysis shows that the

post-test scores of control and experimental groups for transcription course did not bear any differences. The technique either traditional or WhatsApp supported had no effect on students' success for the transcription course.

The studies included in the literature differ from this study as they more focus on the use of WhatsApp Messenger for social interactions, as this study is the first one (if not, one of the first studies) using the application for oral language skills. This is the reason why the literature on the WhatsApp application in ELF context is very limited.

CONCLUSION

The conclusions stated above might be related to several reasons. For example, the reason that students in both groups had similar progress in the listening course after instruction may be related to the comprehensible input given to students by the teacher. The reason that no noteworthy difference could be observed between the post-test scores of the control and experimental group can be explained by the possibility of high student motivation and low anxiety atmosphere in both groups. It may be said that individual difference and self-motivation can be the reasons to be considered to explain the heterogeneity of the post-test scores among the control group students. As for the homogeneity of the scores in the experimental group students, collaborative study and interaction might be taken into account.

The conclusions related to transcription skills can be interpreted as:

Table 6: Comparison of the post-test transcription scores of experimental and control groups

<i>Transc.</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Std. error mean</i>	<i>t</i>	<i>df</i>	<i>p</i>
Control	22	10.05	3.12	.666	.814	43	.420*
Exp.	23	9.26	3.33	.695			

* $p > .05$

- a. The students in each group did not have any background knowledge, and this can be the reason why they could have any idea and why their pre-test scores did not give any significant value to be mentioned here.
- b. Why the students in both control and experimental groups did not show any differences for the post-test scored can be linked to the fact that transcription training is not triggered by the traditional and WhatsApp supported teaching approach but gained by classroom study, self-involvement and investment. Transcription might mainly depend more on self-devotion of learners rather than the techniques employed in the classroom.

Implications

First of all, the results of this study may contribute to improve the literature on the use of WhatsApp messenger in EFL context, as this study is one of the very few studies on the subject. Next, the results show that the conclusions to answer the research questions give interesting results. To answer the first research question, it may be concluded that for listening skills the only difference is the homogeneity or heterogeneity of the success of the groups but there is not a notably important effect of smartphone use on students' success. Therefore, it might be provided from the research that collaborative study as it was done in the WhatsApp group can help whole class teaching and realize the aims of success of all students, whether handicapped or gifted. Findings to answer the second research question do not meet the positive expectation among the technology supporters, as it shows no considerable difference. This might mean that preference of a sole approach or technique does not make any meaningful difference but an eclectic approach including blended teaching could work better in EFL context.

RECOMMENDATIONS

Some practical suggestions can be drawn from the results above. First, collaborative study groups should be formed to motivate the learners and raise the achievements of all. Group study should not be formed only for WhatsApp use but for the other techniques as well. Further-

more, course book writers should include smartphones in their course syllabuses and ELT teachers should learn how to use smartphones in the EFL classrooms rather than ignoring the existence of those useful and practical devices that are carried every time by the students. Another point is that for the sake of innovations the fundamentals of English language teaching should not be ignored. The basic teaching techniques should always be exploited in EFL teaching, as they have proved their efficiency and success for years.

To conclude it can be stated that blended courses benefiting from the smartphones in addition to the existing approaches are assumed to be more contributing to the learning needs of the group or individual learners.

LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The first limitation is that this study focused on two groups of students at Necatibey Education Faculty, ELT Department, Balikesir, Turkey. The second is that this study is also limited to only one teacher's application and ability of traditional and WhatsApp supported teaching.

For the recommendations, as this study did not focus of student and teacher attitudes against smartphone use in and out of classroom, it could give more reliable results if the attitudes above mentioned are considered. Another suggestion could be the use of other mobile applications.

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