

# INTEGRATING TECHNOLOGY INTO ESP CLASSES: USE OF STUDENT RESPONSE SYSTEM IN ENGLISH FOR SPECIFIC PURPOSES INSTRUCTION

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## **Abstract**

This paper presented the results of an experimental study investigating the impact of clicker use through a smart phone application called *Kahoot!*. Despite positive results of clicker use in the existing General English literature, the impact of clicker use has not been examined in the field of ESP. To address this issue, this study investigated the effectiveness of clickers by comparing pre-test and post-test scores of a control and an experimental group and the scores of male and female participants in the experimental group. The results of a 10-week implementation of clicker use with the students of tourism and hospitality department in the experimental group indicated that while post-test scores were significantly higher for the experimental group than for the control group, there was not a statistically significant difference between the post-test scores of male and female participants in the experimental group. Implications for teaching ESP with the help of technology and suggestions for further research were also provided.

**Keywords:** Clicker; mobile technology in language teaching; student response system; English for specific purposes; *Kahoot!*; gamification

## **1. Introduction and background to the study**

English for specific purposes (hereafter ESP) is considered as an approach to teaching and learning of English as a foreign language (Hutchinson & Waters, 1987). However, in contrast to other pedagogical approaches, the entire course, its content and objectives are based on the specific needs of target learners (Lesiak-Bielawska, 2015). ESP emerged as a subcomponent of language teaching with the need of an international language due to the unstoppable rise of technology and commerce. In addition, the shift in language teaching from grammar to actual use of language in specific situations was also a significant factor for the emergence of ESP (Hutchinson & Waters, 1987). Especially these facts called forth the need of a language for real communication in ESP, which conforms with the constructivist learning perspective supporting the idea that language learners should engage in activities fostering real life use of language rather than memorizing rules (Hart, 2003).

Due to considerably changing nature of language from one context to another, i.e. tourism, commerce, engineering, medical, so and so forth, the activities employed and the materials used in ESP classes in these specific fields should be meticulously chosen through considering learners' needs and wants. Because of the challenge in doing this, ESP teachers tried to integrate technology in their classes and eventually ESP pedagogy was affected by the use of technology (Lesiak-Bielawska, 2015). When all spheres of life are either positively or negatively affected by technology, language learning and ESP have not been spared from the significant changes. This process was inevitable due to the advancements in technology and language teachers' wish to fully integrate computer and mobile phone technology in language learning process (Warschauer & Healey, 1998) because the development of new technologies and language learning have always kept abreast (Vukićević-Đorđević, 2015). Specifically, integrating technology in ESP curriculum provides students with a lot of learning opportunities and advantages ranging from providing interactive and communicative activities related to their professions to tools for giving feedback and self-evaluation on that specific context (Butler-Pascoe & Wiburg, 2003).

These advantages include the use of benefits of technology through computer-assisted language learning in ESP instruction, development of ESP materials, and the design of ESP courses (Butler-Pascoe, 2009; Dashtestani & Stojković, 2015). With the development of technology use in ESP classes, practitioners of ESP started using several tools, multimedia packages, and internet sources to promote ESP learners with the real use of target language in situations (Arnó-Macía, 2012). In addition, communicative and interactive activities specific to several professions and specific input for students' interests in the related field are among the merits of technology use in the field of ESP. Technology use in ESP also provides students with the strategies to learn languages for specific purposes, task-based and collaborative learning activities, content-based authentic materials, and tailored learning environments to students' own needs (Dashtestani & Stojković, 2015). However, teachers' way of teaching is another factor determining benefits of technology use in language classes mentioned above, in that an authoritarian way of teaching and strict control of students' behavior may not contribute to students' use of smart technologies (Hovhannisyan, 2016).

At the same time, practitioners' use of technology has provided researchers in the field of language learning and teaching with opportunities to be more aware of the language used in professional and academic communication and further implications of technology in ESP classes (Arnó-Macía, 2012). Moreover, technology, specifically mobile learning and related

devices, made it possible for the students with different learning styles to actively participate in the learning process in today's classrooms (Albadi, 2016).

Therefore, several researchers conducted studies to explore the effects of technology use in both general language and ESP classes, such as the use of wikis (Hadjiconstantinou & Yerou, 2012), blended learning in listening (Kavaliauskiene, 2011), Twitter mobile application as a source of authentic and communicative learning (Albadi, 2016), multimedia use (Dayag, 2016), and the effects of slideshow-supplemented lecture and virtual learning environment (Have & Corcoran, 2008). Apart from these, Chliaras (2014) also mentioned interactive whiteboards, document cameras, student response systems, lecture capture systems, digital projectors, and wireless and projection keyboards as the new tech devices used in ESP classes especially in higher education context.

One of these technologies, student response system (also known as clickers, audience response system, and personal response system) provides students with opportunities to answer questions in class through handheld devices called as 'clickers' or 'key pads' in the USA and 'handsets' or 'zappers' in the UK (Laxman, 2011). Though mostly preferred in large classes and educational settings, small institutions and classes also employ these systems (Caldwell, 2007). Despite popular use of clickers in General English classes (e.g. Akbatogun, 2014; Çelik, 2015; Laxman, 2011) and in many other disciplines, such as economy (Elliott, 2003), chemistry (Chen & Lan, 2013), engineering, and computer science (d'Inverno, Davis & White, 2003), there is a paucity in the literature concerning the investigation of the use of this technology in ESP context. This fact is the first impetus behind this research.

Additionally, the need for ESP is increasing day by day due to international exchanges, interaction, globalization, and the need of qualified employees. Therefore, this has led to the fact that more and more people are needed to know not only General English but also extensive vocabulary and communicative use of the language on various specific fields, such as politics, science, tourism, etc. (Beshaj, 2015). This need is even more urgent and critical in tourism sector in Turkey, where, with the rapid growth of international tourism since the 1980s, tourism industry has had serious problem of well-educated and well-trained work-force (Kusluvan & Kusluvan, 2000). Knowing the language in the relevant area of expertise is crucial for the employees to be referred as 'qualified employee' in international context. Especially in the field of tourism, a foreign language speaker would be more comfortable in his/her position if he/she has a good control of the specific language used. However, despite the growing number of English speakers, still a noticeable deficiency in employees' English for tourism can easily be observed in Turkey.

In order to train students to make them attain their future goals in tourism field, students receive ESP classes at hotel management and tourism vocational high schools, tourism and hospitality services programs at 2-year vocational schools (short-cycle associate degree), and tourism faculties in Turkey. However, students especially at tourism and hospitality services programs at 2-year vocational schools are mostly disinterested in ESP classes due to several reasons, such as low level of General English proficiency, lack of suitable materials and books, and lack of motivation and desire to learn. One way to address this issue and recapture learners' attention is to create a game-like educational atmosphere (Fotaris, Mastoras, Leinfellner & Rosunally, 2016). The reason behind this idea is that despite optimum attention span for learners is around 10 minutes in the classroom (Hartley & Davies, 1978), people's attention can be kept at high levels for hours by video games (Green & Bavelier, 2007). Therefore, concepts, such as 'epic win' and 'instant gratification' in video games are claimed to be the key factors in learners' success (Fotaris et al., 2016).

One of the methods that trigger these feelings for the students in the class is clickers. Studies measuring the impact of clickers on students' learning and involvement in the classroom activities have already provided positive results (e.g. Akbatogun, 2014; Barnett, 2006; Fotaris et al., 2016; Siau, Sheng & Nah, 2006; Trees & Jackson, 2007; Yourstone, Kraye & Albaum, 2008). However, despite increasing popularity and use of gamification of education through several techniques including use of clickers in different disciplines, it has not been integrated into ESP classes. Hence, the current experimental study aims to contribute to the field of gamification in language education through investigating the impact of clickers on students' language development studying tourism and hospitality management by involving a control and an experimental group with pre and post-tests. This study will therefore address the following research questions:

- To what extent and how does the use of clickers impact students' learning in ESP classes?
- How do male and female participants differ in benefitting from the clicker use in the experimental group?

## **2. Literature review on gamification and clickers in language education**

In today's education, the problems that students face, such as underachievement and behavioral as well as emotional difficulties, have never been so serious and they eventually lead to dropouts for many students (Battin-Pearson, Newcomb, Abbott, Hill, Catalano & Hawkins, 2000). This dramatic end is a process of student disengagement, alienation,

tardiness, absenteeism, and failure in classes (Finn, 1989). This fact is in connection with the basic tenets of constructivism, which claims that knowledge cannot be translated to a passive receiver (Bunce, VandenPlas & Havanki, 2006). In line with this fact, if the students are kept passive in the class with the implementation of traditional teaching methods, students get bored, they do not come to classes, and finally they drop out.

However, the situation is not the same for all learning conditions. Despite the current abundance of the distracters for the students, such as the Internet, mobile phones, social media, and many other activities, if appropriate materials and technology are employed, students do not experience alienation in their learning conditions and especially some of them promote excitement, stimulation, and engagement in the process of learning leading to meaningful learning (Admiraal, Huizenga, Akkerman & Dam, 2011). Moreover, students' active participation and engagement in this process positively influences their academic performance (Emerson & Taylor, 2004). Gamification of the target topic and the teaching method mostly through technology is one of the methods to make students active and to extend their normal attention span in classes. Unlike overwhelming impact of complex and traditional learning, successful gaming environments created in the classes provide students with instant gratification and short-term wins (Fotaris et al., 2016).

One of the key actors of gamification techniques in establishing the active participation of learners in classes is clicker, which is a system allowing students to respond to multiple-choice questions using a remote control device (Kay & LeSage, 2009). The devices used are mostly small transmitters students use to transmit their choices by pressing appropriate buttons (Simpson & Oliver, 2006). In this system, students answer multiple choice or similar-formatted questions, which are prepared before by the instructor and projected on a screen, by pressing on a clicker and their responses are transmitted to a receiver attached to a computer (Bergtrom, 2006; Fies & Marshall, 2006). Clickers make it possible for the instructors to assemble or disassemble broad subjects into component structural elements and ideas. Therefore, use of clickers promotes interactive and contextual learning (Bergtrom, 2006). They are mostly effective in the redesign of the larger classes through changing the teachers' teaching styles and learners' learning styles (Bergtrom, 2006).

This system helps teachers not only to keep students active in the class but also to easily assess students' understanding of topic covered in the class and to provide remedial instructions to correct students' misunderstandings (Laxman, 2011). Besides, with the provision of students' responses' immediate display, students also have the chance to receive immediate feedback on their responses (Laxman, 2011). Despite its so-called complex nature,

most clicker systems are easy to use with the need of only a computer, a projector for the teacher's use, and clickers which can be replaced with mobile phones with the applications developed for classroom use for students especially in higher education institutions. Therefore, this easy use frees instructors from doing the technical works and allowing concentration on the topic (Parsons, 2005). According to the nature of this system, when the students click in their response for the questions, the results are mostly anonymously displayed in many formats according to the preference of the instructor (Kay & LeSage, 2009). However, it may also be linked to specific students. Moreover, some applications like *Kahoot!* allow students to join the system with their preferred nicknames.

The characteristics of the new generation students with the technological advancements, who are savvy in using technology to meet their needs, and the inadequacy of traditional passive learning, constitute the philosophical underpinnings of this system (Laxman, 2011). One of the advantages of the use of clickers is that it does not require the radical alteration of the physical classroom facilities (Gan, 2011). These advantages of clickers brought out abundance of studies conducted in different settings and disciplines (e.g. Chen & Lan, 2013; d'Inverno et al., 2003; Elliott, 2003). Language teaching and learning as a field requiring active participation of the learners also benefited from the use of clickers in General English classes (e.g. Akbatogun, 2014; Çelik, 2015; Laxman, 2011; Prieto, 2014; Schmid, 2007; Schmid, 2008). Akbatogun (2014) proved the positive impact of clickers in English as a second language class when compared with the classic lecturing style. Çelik (2015) also provided positive results for the use of clickers in developing vocabulary acquisition of the learners as well as increased engagement and concentration of students, better quality feedback for both instructors and students, and increased cooperation and competition among students. Schmid (2007) also found that this voting system worked well as a pedagogical tool for students and teachers to check their performance, to develop closer social relations in class, and to check their progress without getting embarrassed. Schmid (2008) also emphasized the interactivity appeared as a result of the use of voting system. On the other hand, Prieto (2014) was the only researcher who found out negative results in terms of the effect of clickers through comparing it to classic method of teaching in investigating reading ability of Spanish as a second language.

Despite the positive results that appeared as a result of most of the studies investigating the use of clickers in language teaching, some researchers' perspectives were different (e.g. Anthis, 2011; Beaty, Gerace, Leonard & Dufresne, 2006). Firstly, Anthis (2011) claimed that it was not the clicker but the questions provided within this system that

created the main impact on students' learning. She found out that the students who answered the same questions asked with the classic method performed better. In a similar vein, Beaty and others (2006) supported the idea that the questions preferred in this system should have a specific pedagogic purpose and should differ from the classic questions.

The overall agreement is that the integration of mobile applications like *Kahoot!* is regarded as a phenomenal success through contributing positively to foreign language learning (Albadi, 2016). Even though the use of clickers has already been investigated in General English classes, it has not been examined in ESP classes so far. Particularly, how it affects students' learning in ESP classes in the field of tourism and potential differences between genders were among the issues investigated in the present research.

### **3. Methodology**

This experimental study employed a pre-test and post-test design with two intact classes (control and experimental). To assess the effect of clickers on students' learning of ESP, despite the lack of random selection, intact classes were the most ecologically sound setting for this research in the case of implementing a new clicker technique (Mackey & Gass, 2005).

#### **3.1. Setting and participants**

This research was conducted at a state university in Turkey with the participation of students enrolled in the department of tourism and hospitality services. Students are admitted to this program either by their scores obtained at a national entrance exam or by the placement of the Student Selection and Placement Center without receiving any scores at this national exam in Turkey. This university offers a 4-hour General English class in the first year and another 4-hour class of English for Specific Purposes in the field of tourism in the second year at this 2-year vocational school where graduates receive a short-cycle associate degree at the end of the program.

Students participate in both General English and ESP classes for 14 weeks in both first and second semesters with a total of 28 weeks for each class in an academic year (112 hours of General English and 112 hours of ESP class). Students receive General English class at the elementary level in the first year. A pre-intermediate level ESP book called *Travel and Tourism* is followed in ESP classes in the second year. This course book is designed in line with the specific needs of students studying in this department and it is also accompanied by sixty minutes of video that contains all the dialogues filmed in actual locations. The ESP course content mainly deals with various areas of work in tourism field, such as travel agency,

the airport, the hotel, the bar, the restaurant, and the tour guide. A written mid-term and a final exam are conducted for the assessment in both General English and ESP class for each semester.

When this research was conducted, there were 2 tourism and hospitality department classes in this institution. One group including 24 students with equal numbers of male and female participants was regarded as the control group, whilst the other group with 19 students including 6 females and 13 males was regarded as the experimental group. Participants' ages in both group ranged from 19 to 22. Both classes were taught and assessed with the same materials and examinations by the same instructor both in General English and in ESP classes.

### **3.2. Design of the study and clicker use in the experimental group**

First of all, a pre-test including a total of 76 questions prepared in line with the first 10 units of the ESP book was conducted in both control and experimental classes. The questions were in the multiple-choice format. The topics covered in these units were all related to the first 10 units of the ESP book as illustrated in Table 1. These topics were taught in each week separately in both classes. The flow of the course in both classes involved watching the video of the core dialogue several times, which was followed by the teaching of new words/lexical items for each unit. Open-ended questions about the dialogue, grammar topics for each week that students would need in their work place, such as expressing wants politely, responding to a complaint, or tag questions, identification of the problem regarding the topic of each week in the short videos, and guided role play activities were the main elements of ESP courses in both classes.

Secondly, though both classes were taught in the same way, a different procedure was implemented in the experimental class. Students in the experimental class were required to download the *Kahoot!* application to use as the clicker in this study. It is one of the most popular clicker applications running on any device with a web browser. It also has a smart phone application. *Kahoot!* provides instructors with the detailed report of the overall performance of the students for each week and test, which involves percentages of the total correct and incorrect answers, feedback of the students in a Likert style, and individual analysis of each participant's correct and incorrect answers as well as their answer time in seconds.

All students had smart phones equipped to work with this program. Following the same procedure in experimental class in each week, students were provided with the pin

number that allowed them to join the game. Normally users are free to choose their own nicknames in using *Kahoot!*; however, the students were instructed to log in with their own names in order to specify the points of each student and declare the winner of the day to celebrate. While using *Kahoot!*, students needed to watch the screen reflected through the projector for questions because the questions did not appear on their phones. They chose answers by clicking on the colorful figures on their smart phones' screen. After each question, students could see whether they answered right or wrong on both their device and on the screen (see Figure 1).



Figure 1. Screenshots of students' mobile phone

Students were also scored according to the time they provided the answer, in that the faster correct responses received higher scores. The program also provided a list of the students according to their scores after each question on the screen, which made them more enthusiastic about the next question. The questions were supported with pictures (see Figure 2) or with videos from YouTube (Figure 3).

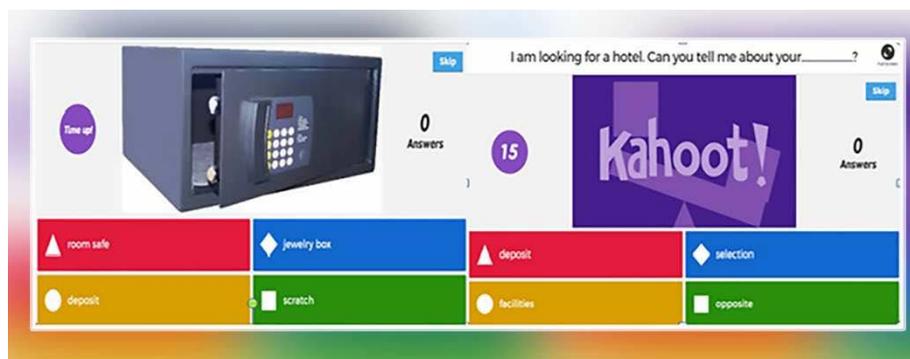


Figure 2. Screenshots of teacher's screen for picture and filling-in the gaps questions

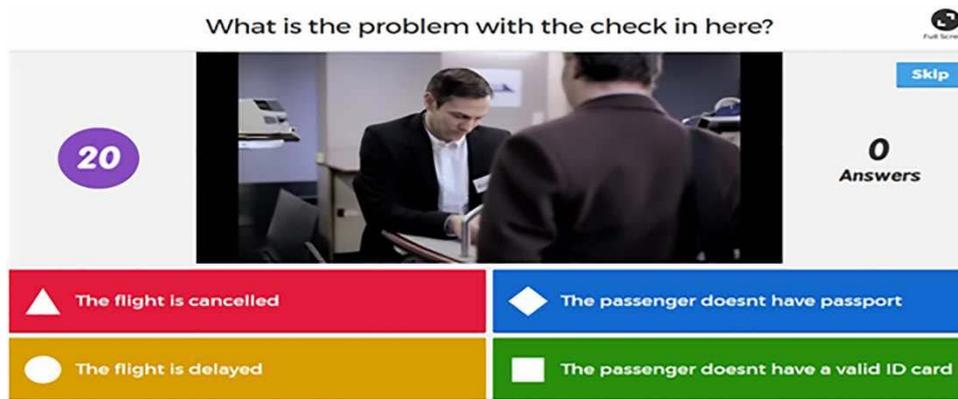


Figure 3. Screenshots of teachers' screen for video questions

*Kahoot!* allows instructors to use the videos from YouTube by starting and ending up at any second they wish. After the students watched the video, the time allocated to answer started, which was 20 seconds for each question in this study. This system also provides instructors with the total correct and incorrect answers with the students' individual and overall class percentages as well as each student's responses for each question. The topics taught through the weeks were provided in the list below in Table 1.

Table 1. The distribution of topics for each week and the number of questions answered via clickers

Week	Topic	Number of questions
1 <sup>st</sup>	Advising on itineraries	15
2 <sup>nd</sup>	Helping with flights and reservations	18
3 <sup>rd</sup>	Assisting with hotel reservations	10
4 <sup>th</sup>	Checking in	14
5 <sup>th</sup>	Providing landing information	10
6 <sup>th</sup>	Dealing with lost luggage inquiries	10
7 <sup>th</sup>	Taking and turning down reservations	10
8 <sup>th</sup>	Checking in at reception	10
9 <sup>th</sup>	Explaining a room's facilities	11
10 <sup>th</sup>	Dealing with complaints and problems	10

The ESP class in the control group included the same topics as well with the same teaching method except for the implementation of the clicker system. The words, grammatical structures and pictures used in the experimental group were also available either in the activities on the book or the worksheets provided by the instructor in the control group, which means the same questions answered by the experimental group through clicker use were answered by the control group as well. The same videos used in the experimental group were watched by the control group. However, they responded to the questions orally. The pictures reflected on the board through projector in the experimental group were printed out on

worksheets for the control group to name them by choosing right one among the multiple choices.

There were three types of questions. The first type included questions with pictures. The main aim was to make students choose the right option among four alternatives. Depending on the topic of each unit, several pictures were provided, such as escalator, luggage claim area, fitness center, different hotel staff and departments, etc. Students were required to choose the item among four alternatives that reflected the picture in 20 seconds. The second type of questions were video-based. Students watched a video about each topic. After they watch the video, they were required to answer questions about the dialogue that took place in a specific scene, such as the problem occurred during check-in procedure, customers' complaint to the manager, or the help of the officer for the lost luggage. Four alternative responses were provided in the form of sentences and students chose among them. The last and the most common type of questions were classic multiple-choice questions without a visual element. A sample question for this type of question is: 'I cannot find my jewellery box. It is .....'. The options were: 'fixed, repaired, missing, looked'. Students were required to choose the right word among four alternatives for these questions. As mentioned earlier, these questions were responded through *Kahoot!* by the students in the experimental group. However, the students in the control group responded the same questions either orally or on worksheets.

Finally, a post-test, which had the same questions with the pre-test, was conducted at the end of the 10-week implementation of clicker use in both experimental and control groups.

### **3.3. Data analysis**

Due to the small sample size and lack of random sampling, which were not suitable conditions for using *t*-test, non-parametric tests were employed for the analyses in this study (Tailor, 2005). Therefore, in order to compare the pre-test and the post-test scores of control and experimental groups and to find out whether there was a significant difference between them, the Mann-Whitney U test was run. The same test was also employed for the analysis between the two genders in the experimental group in comparing their pre-test and post-test scores as well. In order to find out the difference between the pre-test and post-test scores of the experimental group and the difference for the same tests between the genders in the experimental group, Wilcoxon Signed Rank Test was employed, which "instead of comparing the means, in order to rank and compare, turns the values into two different time periods (time

1 and time 2) and compares whether there is a difference between them or not” (Kalaycı, 2010, p. 104).

#### 4. Findings

First of all, a pre-test was administered in the very beginning of the study to find out the current knowledge of the two groups regarding the topics provided in Table 1. The mean scores are presented below in Table 2.

Table 2. Mean scores of the pre-test showing experimental and control groups' performance

Test	Groups	
	Experimental (n=19)	Control (n=24)
Pre-test	48.95	42.70

Despite the slight difference between the experimental and the control groups in terms of pre-test mean scores, the Mann-Whitney U test was also run. The results indicated no significant difference between the experimental (Mdn = 50) and the control group (Mdn = 42.10),  $U = 161.500$ ,  $p = .103$ . Hence, both groups were statistically equally knowledgeable about the pre-test questions, which was also used as the post-test at the end of a 10-week implementation of clickers with the experimental group.

Before providing the results of the statistical analyses, in order to offer insight about the overall performance of the participants in the experimental group during the 10-week implementation of the clicker, students' correct and incorrect answers as well as the average time they used to answer the questions are illustrated in Table 3.

Table 3. The details of the students' performance in the experimental group

The implementation	Total correct answer (%)	Total incorrect answer (%)	Average score (according to Kahoot! scoring)	Average time taken to answer	
				Correct answers (seconds)	Incorrect answers (seconds)
1 <sup>st</sup> week	78.35	21.65	7896	5.01	6.05
2 <sup>nd</sup> week	80.37	19.63	7562	4.36	5.59
3 <sup>rd</sup> week	80.37	19.63	7413	4.62	5.13
4 <sup>th</sup> week	78	22	6578	4.21	4.87
5 <sup>th</sup> week	58	42	5211	5.68	6.06
6 <sup>th</sup> week	80.37	19.63	7413	4.62	5.13
7 <sup>th</sup> week	75.47	24.53	8281	4.05	6.23
8 <sup>th</sup> week	75.86	24.14	7802	3.11	3.39
9 <sup>th</sup> week	71.82	28.18	8685	3.01	3.17
10 <sup>th</sup> week	67.95	32.05	6892	3.26	3.99
Averages of the 10 week	74.61	25.39	7555.5	4.00	5.16

It becomes apparent with Table 3 that students' average time to answer the questions decreased both for the correct and incorrect answers while their responses' accuracy was almost stable. It is also an interesting finding that students' average time to answer was always higher in incorrect answers, which means when students spent more time on the questions that they answered incorrectly.

Following the overall performance of the students in the experimental group, in order to answer the first research question regarding the difference between the control and the experimental group in terms of the post-test scores, the Mann-Whitney U test was employed and the results showed the post-test scores were significantly higher for the experimental group (Mdn = 63.15) than for the control group (Mdn = 46.05),  $U = 142.000$ ,  $p = .035$ . Although the average score of the control group was lower than the experimental group in the beginning of the study, the Mann-Whitney U test results indicated no significant difference between them. Considering the two groups' statistical equality in the beginning, results also indicated that use of clickers in the experimental group for a 10-week period elicited a statistically significant change in students' performance in ESP classes according to Wilcoxon Signed Rank Test results comparing the potential differences between pre-test and post-test scores of the experimental group,  $Z = -3.66$ ,  $p = .000$ . Of 19 students in the experimental group, 17 students performed better in the post-test. The average mean score was 61.35 for the experimental group. This score was 44.45 for the control group. The low post-test scores of the students in the control group did not exhibit a statistically significant difference when compared with their pre-test scores,  $Z = -1.707$ ,  $p = .088$ .

The second research question of this study was concerned with the potential differences between male and female students in benefitting from the clicker use in the experimental group. The same methodology was followed for the analysis, which started with a pre-test indicating the difference between the knowledge of the male and female students in the very beginning.

Table 4. Mean scores of the pre-test showing male and female students' performance in the experimental group

Test	Experimental Group	
	Male (n=13)	Female (n=6)
Pre-test	50.29	46.57

The Mann-Whitney U test results did not indicate a statistically significant difference between the male (Mdn = 50) and the female (Mdn = 46.71) students,  $U = 27.500$ ,  $p = .622$ .

Considering the equal levels of male and female participants in the experimental group, the same test was run one more time to find out the difference between the scores of these two genders in post-test scores. The results revealed that there was not a statistically significant difference between the male and the female students in the experimental group,  $U = 23.500$ ,  $p = .373$ . The medians of the male (63.15) and female (53.94) students were slightly different from one another.

The results of the Wilcoxon Signed Rank Test conducted to find out the difference between the pre-test and the post-test scores of both male and female participants indicated that while male participants' median post-test scores were statistically significantly higher than their median pre-test scores ( $Z = -3.110$ ,  $p = .002$ ), those of female participants were not statistically significantly higher than their median pre-test scores ( $Z = -1.625$ ,  $p = .104$ ). Although only one student in each group could not perform better in the post-test, males showed much better performance with a median score of 63.15 compared to females (53.94).

## **5. Discussion**

The results of this study indicated that the students using clickers in ESP classes in the field of tourism performed better than the ones who responded the same questions without using clickers. Despite the lack of evidence in the field of ESP, the results of this study lend support to the findings of several studies in the existing literature in the field of General English in terms of clickers' positive contribution to language performance of the learners (e.g. Akbatogun, 2014; Çelik, 2015; Laxman, 2011; Prieto, 2014; Schmid, 2007; Schmid, 2008). Although the in-depth data were not gathered from the experimental group regarding their views of using clickers, it may be possible to claim that game-like atmosphere in the class, the feeling of winning and instant gratification provided by clickers may be significant factors increasing learners' participation and success in ESP classes.

Despite the lack of studies specifically investigating the effect of use of clickers on the foreign language performance of males and females in ESP classes, some studies focusing on the attitude and tendency of both genders to use clickers in the classes were in line with the results of the present study (Gök, 2011; Stav, Nielsen, Hansen-Nygård & Thorseth, 2010). The results indicated that male students had more positive attitudes toward the use of clickers (Gök, 2011) and that they had a higher tendency to feel that clickers stimulated them in the class (Stav et al., 2010). The results in the current study showed that, despite the lack of significant difference in the post-test results between the genders, males performed significantly better in the post-test compared to their pre-test scores. This may be due to male

students' interest in technology and technological games or their enthusiasm to win in the games. Depending on the existing literature, the males' increased performance in the post-test may be linked to their positive attitude toward the use of clickers or the stimulating effect of clickers for the males in the class.

Although it may not be quite right to relate students' success in the experimental group completely to the use of clickers, students perform much better due to its impact on learners to be fully engaged with the topic and the method of teaching. The results indicating overperforming of the experimental group provided strong support for the use of clickers in ESP classes as a tool to enhance their learning. Specifically, the case of students studying ESP at tourism and hospitality services programs at 2-year vocational schools in Turkey mostly poorly perform in ESP classes due to their low English proficiency and lack of convenient materials. Therefore, the use of clickers may be a key factor in increasing their performance by eliminating these debilitating aspects.

Students regularly use their smartphones around the campus for several reasons, such as communication and entertainment. This device also plays the role of a significant distractor for the students' learning in the classes as well. For this reason, in order to turn this negative factor into a pedagogical tool, *Kahoot!* may take the stage as students have comfort to use technology for their learning. Although the results cannot be generalized to the entire population of students studying in tourism and hospitality department due to the diverse nature of these students, the experimental group's performance offer significant insights into the effectiveness of using clickers, specifically *Kahoot!*.

## **6. Limitations of the study and final conclusion**

This study presented some limitations which need to be addressed in further research. First of all, the participants of this study were composed of two intact classes regarded as control and experimental groups. Thus, larger sampled and randomly assigned groups may be employed with the inclusion of a delayed post-test in further research. Moreover, the results of this study were limited with the overall language performance of the ESP students in the field of tourism. However, the data regarding the average time to answer the questions, students' attitude and motivation as well as their willingness to take part in communication and activities in ESP classes may provide significant results for the researchers in this field. In addition, longitudinal effects of the use of clickers and students' as well as instructors' views may also be investigated in order to offer a better insight.

As a final remark, clickers may be used as a supplementary tool to enhance performance of ESP learners in the field of tourism and hospitality. Taking the results of the present study into account, course designers and authors responsible for creating ESP books may benefit from clicker use in the iTools sets of the books by allocating more clicker use instead of providing just videos of the related topics. Considering the effectiveness of using clickers in the results of this and many other studies, ESP teachers may be urged to use them in their classes.

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