

Modernizing ESP Learning: A Constructivist Approach to Using Mobile Learning for ESP Learning in Iranian Context

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Abstract

The aims of the present study were to investigate (۱) whether constructivist approach contributes to learning English for Specific Purposes (ESP); (۲) whether ESP courses can be modernized through constructivist approach; and (۳) whether students' perceptions of m-learning as a tool to be employed in the ESP courses were positive. To meet these aims, a total of ۳۰۰ university students in Isfahan in Iran, in the first semester of ۲۰۱۷, who passed the ESP course in different majors, were selected to participate in this study. Data were collected through a five-point Likert scale questionnaire. The questionnaire was consisted of ۳۰ items related to ۰ themes. The results indicated that students' perceptions of modernizing ESP learning through constructivist approach, employing m-learning, and interactive activities were positive. It was concluded that employing constructivist approach in ESP could contribute the students to construct personalized learning, and to experience the immediate usefulness of their ESP course for their future professional development. In addition, utilizing m-learning makes students ready to be creative, think critically, and solve real-world problems. However, m-learning could be useful as a supplementary instrument. Findings suggest that implementing constructivist approach and interactive learning activities in designing Iranian ESP courses could be efficient.

Keywords: Constructivist approach, English for Specific Purposes (ESP), Interactive activities, M-learning, Modernizing ESP Learning



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Introduction

Employing technology in language learning is significant and effective tool nowadays (Abd Alhafeez & Ta'amneh, ۲۰۱۷). A new educational paradigm called mobile learning (m-learning) was invented through the evolution of wireless communication (Moura & Carvalho, ۲۰۱۰). M-learning includes employing of mobile devices namely phone, PDA, pocket PC, and media players like the iPod for educational purposes (Lominé & Buckingham, ۲۰۰۹). Trentin and Repetto (۲۰۱۳) referred to m-Learning as a relatively new multidisciplinary approach that directs attention of many researchers. In recent years, a considerable literature has grown up around using m-learning for language learning (e.g., Abdous, Camarena, & Facer, ۲۰۰۹; Afzali, Shabani, Basir, Ramazani, ۲۰۱۷; Darmi & Albion, ۲۰۱۴; Cakir, ۲۰۱۵; Shea, ۲۰۱۵; Song, ۲۰۱۷; Suwantarathip & Orawiwatnakul, ۲۰۱۵). This is while that, many previous studies have suffered from poorly developed theory.

Employing technology in the area of ESP learning has also attained enormous popularity among EFL researchers (Arno, ۲۰۱۲; Butler-Pascoe, ۲۰۰۹; Jarvis, ۲۰۰۹; Plastina, ۲۰۰۳). In addition, it has long been established that employing m-learning in ESP instruction is useful (e.g., Alkhezzi, ۲۰۱۶; Ardi, ۲۰۱۷; Kirovska-Simjanoska, ۲۰۱۷; Li and Leina, ۲۰۱۲; Simonova, ۲۰۱۵). However, according to Alkhezzi (۲۰۱۶), e-learning and m-learning phenomena have obtained some credibility in the west but in the Middle East, they obtained little attention. With regarding the overview of the literature, they also stated that although several studies have conducted on the utilizing of mobiles in educational settings, m-learning has generally obtained little attention in the Middle East, and specifically the Gulf region. According to Dashtestani (۲۰۱۵), further research needs to be conducted to find students' perceptions of using mobile devices, especially in developing countries. In addition, Dashtestani and Stojkovi (۲۰۱۵) expressed that ESP is an independent activity and has its own research and methodology in the area of applied linguistics. Furthermore, generalizing the findings of the employing technology in EFL contexts to the area of ESP instruction is a fallacy (Dashtestani & Stojkovi, ۲۰۱۵).

M-learning has been mainly investigated in learning language skills, such as vocabulary learning (Agca & Özdemir, ۲۰۱۳; Alemi, Sarab, & Lari, ۲۰۱۲; Choi & Jeong, ۲۰۱۰; Mashhadi, Hayati, & Jalilifar, ۲۰۱۶; Tabatabaei & Goojani, ۲۰۱۲). However, there is a relative paucity of studies investigating m-learning in ESP to develop communication skills, more specifically, through employing interactive activities in Iranian context. Thus, regarding the following notions this study investigates employing interactive activities for communication skills through m-learning: firstly, learning is constructed through communication and collaborative activities (Vygotsky, ۱۹۷۸). Secondly, the significant purpose of ESP courses is to develop communicative skills that students will need in the future target situation (Zivkovic, ۲۰۱۴).

This study seek to investigate m-learning through constructivist approach because of the following reasons: firstly, employing constructivist approach in teaching/learning foreign languages and ESP contribute students to construct their own knowledge and skills through actual experience in real-life (Jonassen, ۱۹۹۱, ۱۹۹۵; Tarnopolsky, ۲۰۱۲). In addition, constructivist approach contributes students to internalize obtained knowledge and skills and not just only learning them (Jonassen, ۱۹۹۱, ۱۹۹۵; Tarnopolsky, ۲۰۱۲). Secondly, regarding the notion that ESP is defined as a student-centered approach which its purpose is to develop English communication skills in a specific major (Zivkovic, ۲۰۱۴). “[I]t is clear that it fits well with a constructivist theory which emphasizes the central importance of students and their perceptions and motivation of learning (Zivkovic, ۲۰۱۴, p. ۱۹)”. This is while that many previous research that have been conducted based on language learning through social constructivist approach have not dealt with online settings and technologies (for example, Aljohani, ۲۰۱۷; Yang, & Wilson, ۲۰۰۶; Williams & Burden, ۱۹۹۷). Furthermore, to date, there are few studies that have investigated utilizing m-learning for ESP learning through constructivist approach (Brown, ۲۰۱۲; Comas-Quinn, Mardomingo, & Valentine, ۲۰۰۹; Zurita, & Nussbaum, ۲۰۰۴b). Therefore, this paper addresses this approach under-

research. The purpose of this study is to understand the Iranian university students' perceptions of employing m-learning for learning ESP through constructivism approach. Thus, this paper seeks to obtain data which could contribute to address mentioned gaps and seeks to shed lights on the using of mobile phones as a cognitive tool to enhance students' ESP learning through utilizing constructivist approach.

۲ Literature Review

۲.۱ Mobile Learning

According to Lominé and Buckingham (۲۰۰۹), phrases including 'handheld learning' and 'handheld technology' imply to the shift from traditional e-learning through desktop computers to portable 'high tech' devices. M-learning is based upon the assumption that learners are always employing their cell phones, handheld devices, and laptops (Trentin & Repetto, ۲۰۱۳). Laurillard (۲۰۰۲) asserted that interesting opportunities for new models of learning were invented through mobility of digital technologies because of reforming the nature of relationship between teachers, students, and the aims of learning. According to Al Hamdani (۲۰۱۲), Learning from mobile involves employing of smart devices as a tool to transport learning materials that are designed for a specific learning purpose. Anderson and Krathwohl (۲۰۰۱) stated that mobile learning means employing mobile devices as a cognitive tool to develop higher order thinking skills (analyzing, evaluating and creating). According to Al-Fahad (۲۰۰۹), the success and efficacy of distance learning, e-learning, and m-learning are demonstrated particularly for individuals who cannot present at classes because of financial, physical, or geographical reasons. Some advantages of utilizing m-learning in educational context include reachability, enhancing motivating, and social interactivity (Alkhezzi, ۲۰۱۶). In addition, learners can use m-learning anytime and anywhere (mobility) (BenMoussa, ۲۰۰۳; Camponovo & Pigneur, ۲۰۰۳; Hahn, ۲۰۰۸; Ng-Kruelle, Swatman, Rebne, & Hampe, ۲۰۰۲; Turban, Lee, King, Warkentin, & Chung, ۲۰۰۲). Mobility characteristic provides learners more space and less stress that result in increasing and encouraging their motivation (Hahn, ۲۰۰۸). According to Narayanasamy and Mohamed (۲۰۱۳), learners are provided with a more personalized experience by m-learning through a mobile phone since learners can select time, place and learning content.

Goodison (۲۰۰۱) expressed that group discussions and instant feedback are encouraged through collaborative nature of m-learning that lead to reinforce learning, to enhance memory retention, and to increase motivation that is because of the employing of individuals' mobile devices rather than the tasks. Nikana (۲۰۰۰) stated that shy learners are inspired to say what they think or mean and share their opinions with their colleagues in a less stressful environment. Furthermore, many researchers in technology, for example, Al Hamdani (۲۰۱۴), mentioned to the optimal using of mobile devices in progressing of higher thinking skills and problems solving. Moura and Amélia Carvalho (۲۰۱۰) posited that "[m]obile learning experiences can take many forms with different objectives. The goal is not to challenge or replace other forms of interaction, it is a complementary methodology that can support, enrich and enhance the learning experience" (p. ۲۸۱). All of the studies reviewed here support employing m-learning. Overall, these studies suggest advantages of using m-learning.

Marpadaga (۲۰۱۴) mentioned to disadvantages of m-learning involving missing connectivity, distraction (while learners learn a course through mobiles, they may receive SMS, social media, or a call that are caused distraction), device compatibility (learners may have a mobile phone that may or may not support the type of materials that teachers develop). This is while that Kirovska-Simjanoska (۲۰۱۷) expressed that "mobile phones in the classroom do not necessarily mean that teachers lose control of the class, as long as they control what the students use the phones for." (p. ۳۲۱). Kirovska-Simjanoska (۲۰۱۷) concluded that with careful planning, mobile phones can be employed as very useful and systematizing tool. Kirovska-Simjanoska (۲۰۱۷) presented some examples of maximizing the potential of the mobile phones in the ESP classroom that included: ۱) quick class research– students conduct research tasks in groups ۲) in- class discussion forums on Google classroom–the teacher sends a question and

students reply through their phones in the classroom, ۳) mobile phones can be used as text book, ۴) phone blogging, ۵) seamless cloud learning—students work at home, as long as they have access to a phone, laptop or tablet. , ۶) taking class notes—students and teachers take picture of the material and send it on Google Classroom, and ۷) mobile phones used as stopwatch for presentations. The following now describes the constructivist approach because as Zivkovic stated: “ESP is a student-centered approach. It fits well with a constructivist theory which emphasizes the central importance of students and their perceptions and motivation of learning” (Zivkovic, ۲۰۱۴, p.۱۹).

۲.۲ Constructivist Approach

According to Young (۲۰۰۳), a new learning environment provides firstly, engaging and secondly, ‘content- relevant experiences’ through employing technologies to help unique learning goals and constructing knowledge. According to Tarnopolsky (۲۰۱۵), constructivist approach provides opportunities for students to construct their own communication skills to apply them in their professional interchange. He stated that “constructivist approach to teaching/learning any subject (including foreign languages and ESP among them) may be defined as an approach that provides students with opportunities of ‘constructing’ their own knowledge and skills through practical experience in real-life or modeled activities” (p. ۱۵۸). He conducted research on ESP teaching to university students and discussed the application of the constructivist approach in ESP teaching to university students. He suggested professionalizing ESP teaching and learning through modeling professional interaction in ESP classrooms to contribute students to achieve communication skills in their professional interchanges. He suggested some activities for performing constructivist approach in the ESP teaching and learning involving firstly, students interact orally in English on professional issues; secondly, external sources of professional information has been deployed in English and students provide different papers on professional issues in English; and lastly, students conduct project work in English. He explained benefits of employing constructivist approach as follow “The essence of those advantages is in allowing students to construct their professional English communication skills autonomously, implicitly, and subconsciously, thus facilitating and accelerating their ESP skill acquisition” (p. ۱۷۱).

According to Tarnopolsky (۲۰۱۵), the constructivist approach can be efficient in the teaching and learning of ESP because: firstly, there is no need to do drill or to memorize new language forms since learners can reinforce new forms subconsciously in communication on professional matters that is presented in modeled professional situations. Secondly, in this communication learners implicitly improve their English professional communication skills and acquiring professional knowledge therefore, students combine the ESP course with university courses in professional disciplines, this integration increases motivation of ESP learning because of the immediate application of the ESP course for students’ future career. Thirdly, according to Holec (۱۹۸۱), the constructivist learning and teaching is based upon learning autonomy thus this causes the ESP teaching and learning process task- based (Pica, ۲۰۰۷; Prabhu, ۱۹۸۷; Skehan, ۲۰۰۲), and increasing the learning because of students’ engagement in solving innovative tasks. Fourthly, the task-based and autonomous learning engage students continually in professional searches in English that contributes invaluablely to improve ESP acquisition.

۲.۳ Mobile Learning and Constructivism Approach

According to Ehrich, McCreary, Ramsey, Reaux, and Rowland (۱۹۹۸), integrating technology can effectively buttress constructivism. Vygotsky (۱۹۷۸) maintains that in constructivist approach knowledge is constructed by the individual from within rather than being transferred to the learner from outside source. He also emphasized the necessity of tools such as language and computer to effect knowledge construction. Constructivist-mobile learning environment is known by new roles of teacher and learner, particularly designed for employing the mobile device as a medium for learning activities. The benefits of mobile learning can be obtained, through collaborative, contextual, constructionist and constructivist learning environments (Patten, Arnedillo & Tangney, ۲۰۰۵). New roles for teachers are forced through

constructivist-mobile learning involving facilitator, coacher, and co-learner. Vygotsky was proponent of bottom-up teaching approach that teachers facilitate, what and how students learn concepts inside and outside the classroom. Teachers' role is to guide learners throughout their knowledge acquisition. Such a role of teachers contributes learners to motivate and to exceed beyond their current competence (i.e. activating learners' zone of proximal development (ZPD). With regarding the previous research it can be concluded that research on technology and ESP teaching is still in the early stages. The aim of this study is to find students' perceptions concerning the employment of m-learning for ESP course through the constructivism approach. The present study attempted to answer the following research questions:

- ۱- To what extent does the constructivist approach contribute to learning in ESP courses?
- ۲- To what extent can ESP courses be modernized through constructivist approach?
- ۳- What are the students' perceptions of learning ESP through m-learning?

۳. Method

۳.۱ Research Design

For this study, the survey was employed to obtain students' perceptions of using m-learning for ESP learning through constructivist approach in Iranian context.

۳.۱ Participants

The study employed a convenience sample of ۳۵۰ university students in different universities in Esfahan. They were selected by non-random sampling. Over half the participants (۶۰٪) was female, and ۴۰٪ were male. Students' age was ۲۰ to ۲۵. Criteria for selecting the sample were that all of the participants had passed ESP course at BSc level.

۳.۲ Instruments

This study employed an adapted questionnaire for collecting data.

۳.۲.۱ Questionnaire

An adapted questionnaire based upon five-point Likert scale with options involving strongly disagree, disagree, undecided, agree, and strongly agree was employed in this study. The first part comprised of age, gender, and major. Second part was based on prior literatures with adjusting to suit the context of the present study and conducting interviews with university students. The second section consisted of ۳۵ items that was related to ۵ parts which namely, benefits of m-learning (۱۰ items), professionalizing ESP learning (۱۰ items), activities of professionalizing ESP teaching (۸ items), disadvantages of m-learning (۳ items), and m-learning and thinking skills (۴ items).

۳.۳ Procedure

This study was conducted in the summer semester of the ۲۰۱۷ educational year. To begin this study the first step was to check content validity and face validity of the questionnaire by three professors. Following checking of validity, the wording of some statements of the questionnaire were modified and ۵ items of the questionnaire were omitted. To better understand the statements of questionnaire, the questionnaire was translated into Persian. The questionnaire consisted of ۳۵ items was piloted with ۱۰ university students. To begin pilot study, the students were asked to choose one of the options of the questionnaire, the researcher answered any problems that students encounter when answer the items. These items were marked by the researcher and then were modified or omitted. The pilot study stage took about one week. Modified questionnaires were distributed among ۳۵۰ student participants who were selected by convenience sampling method. In order to address the ethical concerns, prior to be started answering the questionnaire, ethical concerns involving student informed consent to participate in the study, general purpose of the study, and participate voluntarily were explained to participants. Conducting the survey took ۱ week. Cronbach alpha coefficient was ۰.۸۲ which showed perfect reliability.

۴. Results

This section reports on the outcomes of the data-gathering phase of the study. The data collected were analyzed in relation to the three research questions posed in this study. The present study

employed a questionnaire as its instrument for the aim of collecting the required data. The aim of the study was to examine whether constructivist approach contributes to learning for ESP and whether ESP courses can be modernized through it. Moreover, ESP learners' perceptions of m-learning as a tool employed in the related courses were investigated. For better understanding, this study sought to provide answer for the following research questions:

- ۱- To what extent does the constructivist approach contribute to learning in ESP courses?
- ۲- To what extent can ESP courses be modernized through constructivist approach?
- ۳- What are the students' perceptions of learning ESP through m-learning?

Since the questionnaire was comprised of five sections, firstly, for answering the first research question, items under the first category of 'activities of professionalizing ESP teaching' including ۸ items were analyzed. Secondly, items within the category of 'professionalizing ESP learning' which comprised of ۱۰ items, were considered to answer the second research question. Thirdly, in order to provide answer for the third research question, responses to items within the other three categories of the questionnaire were analyzed together; these three categories included 'benefits of m-learning', 'disadvantages of m-learning', and 'm-learning and thinking skills' with a total of ۱۰ items.

For analyzing the data, as it was mentioned in the methodology section, three one-sample tests were run on items of the categories, along with presentation of the descriptive data. It is worth to note that the mean value was ۳ in these sets of analyses; i.e. values of responses ranged from ۱ to ۵ for the five responses included in the Likert scale (strongly disagree=۱; disagree=۲; undecided=۳; agree=۴; strongly agree=۵). Therefore, as it can be seen in the following, mean of responses was calculated for each category. In this regard, the minimum value (M=۱) means strongly disagree and maximum value or what has been called the criterion (M=۵) means that participants have been strongly agree with the category. The average value (M=۳) means that participants were undecided about the category.

Table 1

Descriptive statistics on contribution of constructivist approach to ESP

One-Sample Statistics			
N	Mean	Std. Deviation	Std. Error Mean
۳۵۰	۳,۶۷۷۷	۱,۱۸۸۰۱	.۰۶۳۵۰

According to table ۱, the overall mean is ۳,۶۷. As the criterion is ۳, it is obvious that the mean point is higher than the criterion. Following table shows if this is significant or not.

Table 2

One-sample test on the contribution of constructivist approach to ESP

One-Sample Test					
Test Value = ۳					
t	df	Sig. (۲-tailed)	Mean Difference	۹۵% Confidence Interval of the Difference	
				Lower	Upper
۱۰,۶۷۲	۳۴۹	.۰۰۰	.۶۷۷۷۱	.۵۵۲۸	.۸۰۲۶

As it can be seen in table ۲, the level of significance is .۰۰۰, which means that according to responses, the ‘constructivist approach’ contributes the students’ learning in ESP courses to a great extent. This is because this value is less than ۰,۰۵ ($P < ۰,۰۵$).

Regarding the second research question, the same statistical procedures were carried out. Descriptive results for the contribution of constructivist approach to students’ ESP learning are shown in table ۴.

Table 3

Descriptive statistics on contribution of constructivist approach to ESP

One-Sample Statistics			
N	Mean	Std. Deviation	Std. Error Mean
۳۵۰	۳,۷۹۱۱	۱,۲۴۱۳۲	.۰۶۶۳۵

According to table ۳ the overall mean is ۳,۷۹. As the criterion is ۳ the mean point is higher than the criterion. Following table shows if this is significant or not.

Table 4

One sample test on modernization of ESP through constructivist approach

One-Sample Test						
Test Value = ۳						
	t	df	Sig. (۲-tailed)	Mean Difference	۹۵% Confidence Interval of the Difference	
					Lower	Upper
As it can be	۱۱,۹۲۲	۳۴۹	.۰۰۰	.۷۹۱۰۷	.۶۶۰۶	.۹۲۱۶

seen in the table ۴ the level of significance is .۰۰۰ ($P < ۰,۰۵$). This means that modernization of ESP learning through constructivist approach is perceived as a useful phenomenon by the participants.

Finally, descriptive statistics and results of one-sample test can be seen in the following tables.

Table 5

Descriptive statistics on the students’ perceptions of m-learning in ESP courses

One-Sample Statistics			
N	Mean	Std. Deviation	Std. Error Mean
۳۵۰	۳,۲۳۷۱	۱,۰۴۲۷۴	.۰۵۵۷۴

According to table ۵, the average mean of students’ responses concerning their perceptions of learning ESP through m-learning is ۳,۲۳. Due to the notion that the average value (or the criterion) is ۳, following table shows if the students’ perceptions was positive or not.

Table 6

One-sample test on the students’ perceptions of m-learning in ESP courses

One-Sample Test				
Test Value = ۳				
t	df	Sig. (۲-tailed)	Mean	۹۵% Confidence Interval of

		tailed)	Difference	the Difference	
				Lower	Upper
۴,۲۵۵	۳۴۹	.۰۰۰	.۲۳۷۱۴	.۱۲۷۵	.۳۴۶۸

As it can be observed in table ۶, the level of significance is .۰۰۰ ($P < .۰۰۵$) and this means that students' perceptions of learning ESP through m-learning is positively significant. Having reviewed students' perceptions, in the following section will be discussed how constructivist approach and m-learning contribute to modernize ESP learning through interactive learning activities.

۵. Discussion

The first question in this study sought to determine to what extent the constructivist approach contributes to learning in ESP courses. This approach contributed to ESP learning in Iranian tertiary context by employing interactive learning activities that allow students orally interact in English with each other on professional issues. These activities also present authentic tasks, contextualizing rather than abstract instruction, for learning ESP. Employing constructivist approach and interactive learning activities allow students to conduct project work in English. These results are in agreement with those obtained by Tarnopolsky (۲۰۱۵) who suggested some activities for performing constructivist approach in the ESP teaching and learning involving firstly, students has interaction orally in English on professional issues; secondly, external sources of professional information has been deployed in English and students provide different papers on professional issues in English; and lastly, students conduct project work in English. This study also investigate that conducting activities involving class research, in-class discussion, and seamless cloud learning, increase employing m-learning in the ESP classroom. These results mirror those of the previous studies that have presented some examples of maximizing the potential of the mobile phones in the ESP classroom include: ۱) quick class research– students conduct research tasks in groups ۲) in- class discussion forums on Google classroom–the teacher sends a question and students reply through their phones in the classroom, ۳) mobile phones can be used as text book, ۴) phone blogging, ۵) seamless cloud learning–students work at home, as long as they have access to a phone, laptop or tablet. , ۶) taking class notes–students and teachers take picture of the material and send it on Google Classroom, and ۷) mobile phones used as stopwatch for presentations. The following now investigates the constructivist approach and m-learning (Kirovska-Simjanoska, ۲۰۱۷).

With respect to the second research question, “*To what extent can ESP courses be modernized through constructivist approach?*“, it was found that employing constructivist approach in ESP courses contributes the Iranian students in tertiary level to learn ESP in an effective way. Perhaps the most significant findings about constructivist approach was the following issues ۱) allowing students to construct their professional English communication skills autonomously; ۲) constructing professional English communication skills subconsciously; ۳) facilitating the ESP skills acquisition; ۴) enhancing the students' involvement in solving creative learning tasks; ۵) learning the immediate usefulness of their English studies for their future professional development; ۶) creating opportunities for students to construct the target language communication skills to employ in their professional issues in their major; ۷) creating opportunities for authentic assessment that reflect the way knowledge is assessed in real life; ۸) allowing students to provide different professionally written papers in English; ۹) allowing students to interact with outside sources of professional information in English. In addition, employing constructivist approach can be taken as the basis for designing ESP courses. These results seem to be consistent with other research which found benefits of employing constructivist approach, according to Tarnopolsky (۲۰۱۵), the benefits of employing constructivist approach in ESP is to allow students to construct their

professional English communication skills autonomously and subconsciously, therefore their ESP skill acquisition is facilitated.

The third question in this research was “*What are the students' perceptions of learning ESP through m-learning?*” the students had positive perceptions toward learning ESP through m-learning. The results of this study indicate that employing m-learning in ESP course helps remember information better, develops the cognitive thinking skills particularly the higher thinking skills, contributes to understand concepts better, and helps critique the professional issues in their major. These results corroborate the ideas of Al Hamdani (۲۰۱۴), who suggested the optimal using of mobile devices in progressing of higher thinking skills and problems solving. The students believed that employing m-learning in an educational context had benefits because of the following reasons involving providing social interactivity and collaborative work, increasing motivating, utilizing m-learning inspires embarrassed students to share their ideas with their colleagues in a less stressful environment, contributing students to engage in discussions on professional issues that were related to their majors, providing feedback, and contributing to personalized learning. These results match those observed in earlier studies that proposed some advantages of utilizing m-learning in educational context involving reachability, enhancing motivating, and social interactivity (Alkhezzi, ۲۰۱۶). Another possible explanation for this might be that according to Narayanasamy and Mohamed (۲۰۱۳), learners are provided with a more personalized experience by m-learning through a mobile phone since learners can select time, place and learning content. The results of present study also mirror those of the previous studies that have demonstrated that one of the characteristics of m-learning is mobility (BenMoussa, ۲۰۰۳; Camponovo & Pigneur, ۲۰۰۳; Ng-Kruelle, Swatman, Rebne, & Hampe, ۲۰۰۲; Hahn (۲۰۰۸); Turban, Lee, King, Warkentin, & Chung, ۲۰۰۲).

Students also agreed that mobile phones can be used as text book because class material and recourses can be downloaded rather than numerous printing and copying. In addition, mobile phones can be very practical in the ESP classroom because students can take class notes or teachers take picture of materials and posting them to students. Perhaps the most unexpected finding was that most of the students disagreed that m-learning is a replace to classroom learning. There are three possible explanation for this result: the first one is that by employing m-learning in the class, teachers and students lose control of the class. However, this finding of the current study do not support previous study of Kirovska- Simjanoska (۲۰۱۷) who expressed that utilizing mobile phones in the classroom do not necessarily mean that teachers could not manage the class, as long as they control using mobile phones by the students in the classroom. The second is that it is hard to use the keyboards of mobile phones, and the last one is the lack of available content specially designed for the ESP course. It seems possible that these results are due to the notion that the goal of mobile learning is not to challenge or substitute with other forms of interaction, mobile learning can supply, enrich and increase the learning experience (Moura and Carvalho, ۲۰۱۰). However, with a small sample size, caution must be applied, as the findings might not be generalized to other studies.

۶. Conclusion

This study set out to investigate the students' perceptions on employing m-learning for ESP course through constructivist approach in Iranian context. This study has found that Iranian students generally have a positive perception towards professionalizing ESP learning through constructivist approach and employing m-learning in ESP class; this approach contributes the students to construct personalized learning, and to use their ESP course for developing their career. Employing constructivist approach and interactive learning activities allow students to learn through context and contribute students to use authentic tasks rather than abstract instruction. Students orally interact in English with each other on professional issues, students also present papers in English on issues related to their major. In addition, by employing constructivist approach in ESP course, students can conduct different projects in English which contribute students' autonomy and increase students' ESP learning.



Conducting activities like in-class discussion forums and seamless cloud learning increase the employing of m-learning in the ESP class. Mobile phones are very useful in the ESP classroom because they utilize in promoting the thinking skills. Although m-learning has many advantages for ESP learning but it seems that m-learning could not be replaced to classroom learning and m-learning could be used to enrich the ESP learning.

The findings of this study suggest that constructivist approach and interactive learning activities can be employed at designing Iranian ESP courses in tertiary level and can be employed at efficient learning of ESP course. The findings of this research provide insights for utilizing m-learning in ESP course. This study has confirmed the findings of Tarnopolsky (۲۰۱۵) which discussed employing constructivist approach in ESP teaching to university students. The current study investigated only the students' perceptions through survey but future research could investigate using m-learning for ESP learning by employing mixed method or triangulation method. This study was limited with a small sample size thus caution must be used, as the findings might not capable of being shifted to the wider population. Although the findings should be interpreted with caution, the strengths of this study is that it has investigated m-learning through constructivism approach in tertiary level in Iranian context. Further studies are, therefore, recommended on ESP learning and teaching through constructivism approach in Iranian context.

References

- Abdous, M., Camarena, M., & Facer, B. (۲۰۰۹). MALL technology: Use of academic podcasting in the foreign language classroom. *RECALL Journal*, 21(۱), ۷۶-۹۰. Retrieval from <http://journals.cambridge.org>
- Afzali, P., Shabani, S., Basir, Z., Ramazani, M. (۲۰۱۷). Mobile-assisted vocabulary learning: A review study. *Advances in Language and Literary Studies*, ۸ (۲), ۱۹۱-۱۹۰.
- Agca, R. K., & Özdemir, S. (۲۰۱۳). Foreign language vocabulary learning with mobile technologies. *Procedia-Social and Behavioral Sciences*, 83, ۷۸۱-۷۸۰.
- Alemi, M., Sarab, M., & Lari, Z. (۲۰۱۲). Successful learning of academic word list via MALL: Mobile Assisted Language Learning. *International Education Studies*, ۵(۶), ۹۹-۱۰۹. Retrieval from <http://www.ccsenet.org>
- Al-Fahad, F. (۲۰۰۹). Students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud University, Saudi Arabia. *The Turkish Online Journal of Educational Technology – TOJET* 8(۲), ۱۱۱-۱۱۹.
- Alhafeez Ali Ta'amneh, M. (۲۰۱۷). The effect of using WhatsApp messenger in learning English language among university students. *International Research in Education*. ۵(۱), ۱۴۳-۱۵۱.
- Al Hamdani Dawood, S. (۲۰۱۴). A constructivist approach to a mobile learning Environment, *International Journal of Computer Application*. ۹۳ (۴), ۴۱-۴۶.
- Aljohani, M. (۲۰۱۷). Principles of "Constructivism" in foreign language teaching. *Journal of Literature and Art Studies*, ۷ (۱), ۹۷-۱۰۷.
- Alkhezzi, F. (۲۰۱۶). The impact of mobile learning on ESP learners' performance. *The Journal of Educators Online-JEO*, ۱۳ (۲), ۷۳-۱۰۱.
- Anderson and Krathwohl D, "A Taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives". *New York: Longman, 2001*
- Ardi, P. (۲۰۱۷). Promoting learner autonomy through schoology m-learning platform in an EAP class at an Indonesian University. *Teaching English with Technology*, ۱۷ (۲), ۵۵-۷۶.
- Arno, E. (۲۰۱۲). The role of technology in teaching languages for specific purposes courses. *Modern Language Journal*, 95, ۸۸-۱۰۳.
- BenMoussa, C. (۲۰۰۳, April). *Workers on the move: New opportunities through mobile commerce*. Paper presented at the UKAIS Conference, University of Warwick, England. Retrieved from <http://homepages.warwick.ac.uk/~bsral/ukais/abstracts.php>
- Brown, M. (۲۰۱۲). Tablet computing to cultivate Japanese EFL digital literacy: A study on video production in the classroom. In J. Colpaert, A. Aerts, W-C. Vivian Wu, & Y-C. Joni Chao, (Eds.), *The Medium Matters* (Proceedings ۱۰th International CALL Conference) (p. ۴۸). Retrieval from <http://www.google.com>
- Bulter-Pascoe, M.E. (۲۰۰۹). English for specific purposes (ESP), innovation, and technology. *English education and ESP*, ۱-۱۵.
- Cakir, S. (۲۰۱۵). Opinions and attitudes of prospective teachers for the use of mobile phones in foreign language learning. *Contemporary Educational Technology*, ۶ (۳), ۲۳۹-۲۵۰.
- Camponovo, G., & Pigneur, Y. (۲۰۰۳). *Business model analysis applied to mobile business*. Paper presented at the ۵th International Conference on Enterprise Information systems
- Choi, E-J., & Jeong, D-b. (۲۰۱۰). The effects of college students' vocabulary learning by using mobile LMS lessons. *Multimedia-Assisted Language Learning*, ۱۳(۳), ۲۷۹-۳۰۲. (in Korean). Retrieval from <http://www.dbpia.co.kr>
- Comas-Quinn, A., Mardomingo, R., & Valentine, C. (۲۰۰۹). Mobile blogs in language learning: Making the most of informal and situated learning opportunities. *RECALL Journal*, - (۱), ۹۶-۱۱۲. Retrieval from <http://journals.cambridge.org>



- (ICEIS). Angers, France. Retrieved from:
<http://www.hec.unil.ch/gcampono/publications/GC۲۰۰۳ICEIS.pdf>
- Darmi, R., and Albion, P. (۲۰۱۴). A Review of integrating mobile phones for language learning. Paper presented in ۱۰th International conference Mobile Learning.
- Dashtestani, R. (۲۰۱۵). Moving bravely towards mobile learning: Iranian students' use of mobile devices for learning English as a foreign language. *Computer Assisted Language Learning*, ۲۹ (۴)
- Dashtestani, R., & Stojković, N. (۲۰۱۵). The use of technology in English for specific purposes (ESP) instruction: a literature review. *The Journal of Teaching English for Specific and Academic Purposes*, ۳ (۳), ۴۳۵-۴۵۶.
- Ehrich, R., McCreary, F., Ramsey, A., Reaux, R, and Rowland, B. (۱۹۹۸). "Design of technology-based learning environments that support both teachers and students," *ERIC Document No. ED 419497*.
- Goodison, T. A. (۲۰۰۱). The implementation of m-Learning in UK higher education. In *Proceedings of ED-MEDIA ۲۰۰۱* (pp. ۶۱۳-۶۱۸). Tampere, Finland: AACE Press.
- Hahn, J. (۲۰۰۸). Mobile learning for the twenty-first century librarian. *Reference Services Review*, 36 (۳) ۲۷۲-۲۸۸.
- Holec, H. (۱۹۸۱). *Autonomy and Foreign Language Learning*. Oxford: Pergamon.
- Jarvis, H. (۲۰۰۹). Computers in EAP: change, issues and challenges. *Modern English Teacher*, 18 (۲), ۵۱-۵۴.
- Jonassen, D. (۱۹۹۱). Evaluating constructivist learning. *Educational Technology Research and Development*, ۳۱ (۳), ۵-۱۴.
- Jonassen, D.H. (۱۹۹۵). *Supporting Communities of Learners with Technology: A Vision for Integrating Technology with Learning in Schools*. Accessed September ۲۰۰۲ at DePaul University, Instructional Technology Development Department Web site:
<http://www.itd.depaul.edu/website/pages/TrainingEvents/CourseMaterials/jonassen.asp>.
- Kirovska-Simjanoska, D. (۲۰۱۷). Mobile Phones as learning and organizational tools in the ESP classroom. *The Journal of Teaching English for Specific and Academic Purposes*, ۵ (۲), ۳۲۱-۳۳۲.
- Laurillard, D. (۲۰۰۲). *Rethinking university teaching: a conversational framework for the effective use of learning technologies* (۲nd ed). London: RoutledgeFalmer
- Li, L., Leina, L. (۲۰۱۲). *Designing principles of mobile learning in ESP course for Chinese students*. Paper presented at the International Conference on Future Computer Supported Education, ۱۴۲-۱۴۸.
- Lominé, L.L., Buckingham, C. (۲۰۰۹). M-learning: texting (SMS) as a teaching & learning tool in higher arts education (۲۰۰۹), http://www.elia-artschools.org/teachers_artes/_downloads/papers/Lomine.pdf/
- Marpadaga. (۲۰۱۴). Benefits and limitations of mobile learning. Retrieved from
<http://blog.commlabindia.com/elearning-development/mlearning-benefits-limitations>
- Mashhadi, A., Hayati, A., Jalilifar, A. (۲۰۱۶). The impact of Podcasts on English vocabulary development in a blended educational model, *Applied Research on English Language*, ۵(۲), ۱۴۵-۱۷۲.
- Moura, A., Amélia Carvalho, A. Mobile Learning: Using SMS in Educational Con- texts. Nicholas Reynolds; Márta Turcsanyi-Szabo. IFIP TC ۳ International Conference on Key Competencies in the Knowledge Society (KCKS) / Held as Part of World Computer Congress (WCC), Sep ۲۰۱۰, Brisbane, Australia. Springer, IFIP Advances in Information and Communication Technology, AICT-۲۲۴, pp.۲۸۱-۲۹۱, ۲۰۱۰, Key Competencies in the Knowledge Society.
- Narayanasamy, F., & Mohamed, J. (۲۰۱۳) Adaptation of mobile learning in higher educational institutions of Saudi Arabia. *International Journal of Computer Applications*, 69(۶), ۳۴-۳۸.
- Ng-Kruelle G., Swatman, P., Rebne, D., & Hamp, J. (۲۰۰۲). The price of convenience: Privacy and mobile commerce. *Quarterly Journal of Electronic Commerce*, 3(۳), ۲۷۳-۲۸۵

- Nikana. (۲۰۰۰). Co-operative group work / Collaborative Learning. Retrieved from: <http://www.schoolnet.org.za/edict/edfort/coop.htm>
- Patten, B., Arnedillo, S., and Tangney, B. (۲۰۰۵) "Designing collaborative constructionist and contextual applications for handheld devices," *Computers & Education*, 46, 294-308.
- Plastina, A.F. (۲۰۰۳). CALL-ing EAP Skills. *Teaching English with Technology*, 3 (۳), ۱۶-۳۰.
- Pica, T. (۲۰۰۷). Task-based instruction. In Nelleke van Deusen-Scholl and Nancy H. Hornberger (Eds.). *Encyclopedia of Language and Education. Vol.4: Second and Foreign Language Education* (pp. ۷۱-۸۲). New York, NY: Springer.
- Prabhu, N.S. (۱۹۸۷). *Second Language Pedagogy*. Oxford: Oxford University Press.
- Shea, A.M. (۲۰۱۵). *Student perceptions of a mobile augmented reality game and willingness to communicate in Japanese*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses.
- Simonova, I. (۲۰۱۵). Mobile-assisted ESP learning in technical education. *Journal of Language and Cultural education*, ۳ (۳), ۱-۱۵.
- Skehan, P. (۲۰۰۲). Plenary: Task-based instruction: Theory, research, practice. In A. Pulverness (Ed.). *IATEFL 2002. York Conference Selections* (pp. ۹۰-۹۹). Whitstable, Kent: IATEFL.
- Song, J. (۲۰۱۷). *Using mobile technology empowers learners? Exploring students' mobile learning experiences' perceptions, and motivational needs and developing learning capacity through mobile learning* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses.
- Suwantarathip, O., Orariwatnakul, W. (۲۰۱۵). Using mobile-assisted exercises to support students' vocabulary skill development. *TOJET: The Turkish online Journal of Educational Technology*, ۱۴ (۱). ۱۶۳-۱۷۱.
- Tabatabaei, O., & Goojani, A. (۲۰۱۲). The impact of text messaging on vocabulary learning of Iranian EFL learners. *Cross Cultural Communication*, 8(۲), ۴۷-۵۵.
- Tarnopolsky, O. (۲۰۱۵). Idea sharing: professionalizing ESP teaching to university students through modeling professional interaction in ESP classrooms. *PASSA*, vol. ۵۰, ۱۵۶-۱۷۲.
- Traxler, J.: Case studies: Introduction and overview. In: Kukulska-Hulme, A., Traxler, J. (eds.) *Mobile Learning: A Handbook for Educators and Trainers*, pp. ۷۰-۷۵. Routledge, London (۲۰۰۵)
- Trentin, G., & Repetto, M. (Eds). (۲۰۱۳). *Using network and mobile technology to bridge formal and informal learning*. Cambridge, UK: Woodhead/Chandos Publishing Limited.
- Turban, E., Lee, J., King, D., Warkentin, M., & Chung, M. (۲۰۰۲). *Electronic commerce 2002: A managerial perspective*. Englewood Cliffs, NJ: Pearson Prentice Hall.
- Vygotsky, L. (۱۹۷۸). "Mind in society: The development of higher psychological processes," *Cambridge, MA: Harvard University Press*.
- Williams, M., Burden, R. (۱۹۹۷). Motivation in language learning: a social constructivist approach. In: *Cahiers de l'APLIUT*, ۱۶ (۳). Stratégies d'apprentissage. pp. ۱۹-۲۷.
http://www.persee.fr/doc/apliu_0248-9430_1997_num_16_3_1201
- Yang, L., Wilson, K. (۲۰۰۶). Second language classroom reading: A social constructivist approach. *5th Anniversary Special Issue — CALL Technologies and the Digital Learner*, 6 (۳), ۳۶۴-۳۷۲.
- Young, L. D. (۲۰۰۳). Bridging Theory and Practice: Developing Guidelines to Facilitate the Design of Computer-based Learning Environments. *Canadian Journal of Learning and Technology*, ۲۹(۳), Fall/Autumn. Retrieved May ۱۴, ۲۰۰۷, from <http://www.cjlt.ca/>
- Živković, S. (۲۰۱۴). *Constructivism- an emerging trend in ESP teaching and learning*. Paper presented at the Conference SlovakEdu.
- Zurita, G., & Nussbaum, M. (۲۰۰۴b). A constructivist mobile learning environment supported by a wireless handheld network. *Journal of Computer Assisted Learning* 20, ۲۳۵-۲۴۳. Retrieval from <http://www.cbllt.soton.ac.uk>