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INVESTIGATING EMPLOYING INFORMATION COMMUNICATION TECHNOLOGY FOR ESP LEARNING: A CASE OF IRANIAN EFL STUDENTS' ATTITUDES

Research Article

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Abstract

Although employing technology in language learning has been widely examined, there remains a scarcity of research investigating employing Information and Communication Technology (ICT) for learning English specifically aimed at learning English for Specific Purposes (ESP). This paper examined students' attitudes toward benefits and barriers in employing ICT for learning ESP. The sample of the study consisted of 100 students, in Iran, in Esfahan, who passed their ESP course. An adaptive survey questionnaire, which was consisted of 40 items related to 6 parts, was designed for the purpose of the study. The parts of the questionnaire were involved attitudes of employing ICT for ESP, enriching ESP course, skills in using ICT, obstacles to using ICT in ESP, teacher education, and social and cultural rules. Results of the study indicated that most of the students had positive attitudes toward employing ICT for ESP learning. These findings can be used to employ ICT tools in ESP curriculum and to support Iranian ESP textbooks through utilizing ICT.

Keywords: attitudes, barriers, English for Specific Purposes (ESP), Information and Communication Technology (ICT)

1. Introduction

Vahabi and Sadeh (2011) declared that utilization of ICT in teaching and learning purposes is becoming one of the crucial issues of new education. They also mentioned that conducting research on utilization of ICT in language learning is becoming a question of the day. It has long been established that employing technology for language learning can be useful in different levels (see Cakir, 2015; Dedja, 2015; Li, 2015; Parvin, & Salam, 2015; Prince, 2014; Su, Zheng, Liang, & Tsai, 2018; Wu, 2015; Zareekbatani, 2015). Most of the studies that have examined this issue have investigated the benefits and effectiveness of employing ICT for language learning. For example, Tinio (2002) stated that there are some benefits for using ICT involving the notion that ICT learners can become equipped with digital age literacy, inventive thinking, higher-order thinking, sound reasoning, effective communication, and high productivity.

Although the integration of ICT in ESP has been extensively investigated over the past years (Liuolienė, & Metiūnienė, 2013; Kavaliauskienė & Kaminskienė, 2010; Vahabi & Sadeh, 2011; Wisniewska, 2016). The relatively few studies of employing ICT in ESP learning investigate both the benefits and barriers of employing ICT for language learning in general and for ESP learning in particular (For example, Dela Rosa, 2016). To date, however, there has been little empirical evidence that examine employing ICT for ESP learning in tertiary level in Iranian contexts. Therefore, this paper specifically addresses this under-researched and

provides the different attitudes of Iranian language students toward employing ICT in ESP learning.

2. Literature Review

Warschauer (2004) expressed that three issues involving simultaneous impact of globalization, spread of English, and technological development have transformed the learning and teaching of English as a lingua franca in an unprecedented way. According to Jung (2006), essential literacy skills involving English and ICT are necessary for growing non-native speakers of English to make certain full participation in the information society. According to Dela Rosa (2016), in todays' world, information and communication technology (ICT) has grown in a way that it is capable of developing educational opportunities in both formal and non-formal ways. The following now addresses the benefits and barriers of employing ICT in language learning.

With using upgrading teaching techniques by means of network applications, language teachers may have higher attainments in instructing ESP than what was previously thought (Murphy, 1985). In this vein, Cooper (1975) believed that teachers who teach ESP should know the participants' requisite for English for educational purposes in order to continue their studies. There are some points which must be considered for a course for someone who needs English in order to do one's job including: the first is the environmental and social aspects; the second is relationships; and the third is authenticity and up to date material (Cooper, 1975; Stervens, 1977). Many researchers expressed that innovative technological methods have contributed to teachers to integrate different teaching methods based on the needs of learners by technology (Pitler, Hubbell, Kuhn, & Malenoski, 2007). For example, Holec (1981) claimed that the task-based learning contributes to those students who are constantly engaged in professional information searches (Holec, 1981). Živković (2014) refferd to the 21st century as the age of global communication and the quick broadcast of information. Živković (2014) added that employing of ICT for ESP teaching and learning is a current challenge that pressure to rethink a number of educational issues.

Indeed, if technology engages students in meaningful, relevant and authentic activities accompanied with open-ended software and the Internet, therefore technology is the most successful tool that lead to learning (Jonassen, 2000). 'Mindtools' (Jonassen & Reeves, 1996) develop autonomous and meaningful learning, support interactive, increase collaborative and student-centered classrooms. In addition, 'Mindtools' contribute to involve students in creative and critical thinking, and contribute students to construct their knowledge. According to Zivkovic (2014), higher-order thinking skills contribute students to become inventors of knowledge, competent and productive communicators, successful collaborators, independent and inventive thinkers, problem solvers and career experts. About technology in ESP learning Zivkovic (2014) stated as follows:

> Modern technology has the potential to increase interactivity and availability as a communication device and as a classroom management tool. If used appropriately, the technology could add relevance and meaning to ESP learning because it has the potential to increase students' motivation for studying languages. (p. 23)

According to Ehrich, McCreary, Ramsey, Reaux, and Rowland (1998), integrating technology can effectively buttress constructivism. Vygotsky (1978) maintained that in

constructivist approach knowledge was 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. Tarnopolsky (2015) 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. 158). He conducted research on ESP teaching to university students and discussed the application of the constructivist approach in ESP teaching to university students. Tarnopolsky (2015) 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. 171). According to Holec (1981), the constructivist learning and teaching is based upon learning autonomy thus this causes the ESP teaching and learning process task- based (Pica, 2007; Prabhu, 1987; Skehan, 2002), and increasing the learning because of students' engagement in solving innovative tasks.

The aim of ESP courses is to contribute students to be able to use language that they will require in future professional settings (Zivkovic, 2014). This can be realized through content-based curriculum that students learn the language by focusing on the 'specialized subject matter' and utilizing authentic materials (Zivkovic, 2014). In addition, "Internet-generated materials can be flexibly arrayed to engage students with topics and cognitive tasks relevant to students' professional futures" (Kimball, 1998). However, ICT integration in ESP has some caveats. The following now describe the barriers of employing ICT in ESP learning. Fathi Vajargah, Jahani, and Azadmanesh (2010) found several challenges of utilizing ICT in Iran involving "lack of National Policy for using ICT in Higher Education, lack of adequate investments, cultural obstacles, financial challenges, lack of continuity in ICT use, and lack of systematic training and development programs" (p. 38).Yousefi Azarfam, and Jabbari (2012) concluded that employing technology is determined by some factors that external factors involving access to appropriate materials and professional development opportunities. Internal factors involving awareness of the benefits of technology and personal attitudes towards technological innovations. Another barriers of utilizing ICT is distraction of attention. Turkle (2008) defined 'tethering' as the technology users' over dependence and intense preoccupation with technology, leading to fragmentation of attention and disengagement from authentic activities.

Therefore, to address the abovementioned gap in the literature in this area, this paper specifically investigates the attitudes of university students in different majors on employing ICT for their ESP courses. Hence, the present study is an extension of earlier research and provide more insights about these issues. The purpose of this study is to investigate the attitudes of university students in different majors toward employing ICT in ESP learning. Thus, the following question was answered in this study:

What are the students' attitudes toward the benefits and barriers of employing ICT for ESP learning?

3. Method

In this part, the procedure followed by the researchers has been provided and described in details.

3.1. Design of the Study

This survey study was investigated the employing the ICT for ESP learning from the perspective of the Iranian students. The basic purpose and rational for choosing survey research was that this method allowed for generalizing from a sample to a population. Therefore, inferences can be drawn about attitudes of the population. (Creswell, 2014).

Some advantages of survey designs involving, firstly, surveys are particularly well appropriate for asking factual, behavior, and attitudinal questions (Dornyei, 2003). Secondly, the questionnaire can spread widely. In addition, through questionnaire and technology, quantitative responses to closed questions can be rapidly obtained and analyzed (Nunan& Baily, 2009). This is why a questionnaire was preferred for data collection for this study. In addition, one type of closed-item format, Likert scale, was used in the present study because of the following reasons: practicality, and comparability. The comparability increases the statistical analysis process. From these views, the researchers chose a survey research method with a Likert scale questionnaire design.

3.2.Participants

The non-random sampling process was employed in this study. The participants were selected by convenience sampling method. A number of 100 undergraduate students, in the second semester of academic year 2017-2018, who had passed their ESP course, in Esfahan in Iran, were selected. The participants constituted 40 males and 60 females, in different majors. In addition, their age was 19 to 23 and most of them had the mediocre familiarity with ICT tools and educational software in their major.

3.3. Instruments

A 40-item validated questionnaire with items in the format of Likert scale was used in the study.

3.3.1. Questionnaire

An adopted questionnaire based on two existing questionnaires (Soleimani, Khanjani, 2013 & Dela Rosa, 2016) was designed. But for the purpose of the present paper, some of the items were omitted or added to adjust the purpose of present study; based on these questionnaires, the following themes were selected: (1) attitudes towards benefits of employing ICT in ESP (2) enriching ESP course (3) skills in using ICT (4) obstacles to using ICT in ESP (5) Teacher education (6) social cultural. The first section of the questionnaire elicited students' information including gender, major, and their familiarity with ICT tools. The second section of questionnaire composed of 40 items related to 6 themes which has been named before. The items related to themes of the questionnaire involving attitudes towards benefits of employing ICT in ESP (15 items), enriching ESP course (10 items), skills in using ICT (3 items), obstacles to using ICT in ESP (5 items), teacher education (3 items), social cultural (3 items).

A pilot study was conducted. A rational for this pilot study before the actual data collection was that, the researcher can check any unclear items, misunderstanding items, and confusing instructions (Nunan, & Bailey, 2009). Piloting was conducted at two-stage phase. Firstly, the questionnaire was pre-piloted with three experts in ESP teaching. Their comments was employed in the questionnaire, the ambiguous questions was revised and the format was improved. They also checked the face validity and content validity of the questionnaire. The Cronbach alpha coefficient was 0.76 which show reliability. In the second phase of the piloting five participants from the same population were selected to answer the questionnaire with 45 items (first version of the questionnaire). The researchers presented to answer the misunderstanding questions. If the participants had any questions in answering some items, those items were highlighted by the researchers. These highlighted items were modified or omitted. Finally, a questionnaire was obtained with 40 items. It is worth mentioning that these five participations were not in the sample themselves.

The questionnaire was translated through back translation procedure. Firstly, the final version of the questionnaire, which was piloted and revised, was translated into the Persian by the first translator. Then, the second bilingual translator, who was not seen the final version of the questionnaire, translated the questionnaire into the English language. Then final version and back-translated version of the questionnaire was compared by the translators to make clear items. This procedure contributed to increase the reliability and validity of the questionnaire before administrating it to the sample of the population. In addition, this procedure contributed to better understanding items of the questionnaire and contributed to obtain more valid results.

Prior to commencing data collection, all of the participants read the informed consent form and they received explanation of the purpose of the study. The participants were told that they can refuse to participate in the study at any time. In addition, they were told that all the information will be kept confidential. Following the ethical clearance, the questionnaires were administered to the sample of population.

4. Results

The aim of the present study was to explore the participants' attitudes toward the benefits and barriers of employing ICT for ESP learning. In this section, the results obtained for the research question of the study are presented. As mentioned earlier, the questionnaire employed by the study was broken into six themes. Firstly, frequency of the participants' answers on these items were calculated for items within each theme and they have can be seen in separate sections. Table are presented to show the mean score for each item. A mean score above 3.00 (which is the average value of the choices) indicates the respondents' agreement with that statement while a mean score below 3.00 shows their disagreement. Secondly, as it was mentioned in the methods section, one-sample t-test was run on the data collected for each theme. Results obtained for each part can be seen in tables and figures.

4.1. Attitudes towards Benefits of ICT Integration into ESP

The first theme representing the first sub-scale of the questionnaire concerned 'the students' perceptions toward the application of ICT in ESP courses'. In order to come up with answer to this research question, the participants' responses on this theme were collected.

Table 1. *Frequencies for the students' perceptions*

Statements	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Mean
1. ICT integration in ESP can provide face-to-face intimate interactions between teachers and learners.	14	17	16	33	16	3.28
2. I can avoid problems like handwriting and organizing idea and text when I use ICT tools.	4	10	8	37	38	3.97
3. Integrating ICT in ESP provides me the best chance to learn ESP.	11	20	19	29	18	3.23
4. ICT tools can help keep track of student progress in ESP.	8	20	8	44	17	3.43
5. ICT integration in ESP facilitates collaborative work between students in the class.	4	18	8	39	25	3.67
6. ICT integration in ESP contributes to concentrating more on their learning.	12	18	17	30	20	3.28
7. ICT integration in ESP contributes to try harder on what I am learning.	7	18	15	42	16	3.42
8. I have more autonomy in my ESP learning with using ICT	8	10	11	34	34	3.78
9. ICT integration in ESP contributes to me to understand more easily what I am learning.	7	14	14	36	26	3.61
10. ICT integration in ESP contributes to me to remember more easily what I have learned.	3	17	17	35	25	3.63
11. ICT integration in ESP contributes to improve the ESP class atmosphere (less boring classroom, students' engagement).	6	8	9	36	38	3.94
12. ICT integration in ESP contributes to improve my motivation for learning ESP-course.	4	11	11	37	34	3.88
13. ICT integration in ESP contributes to improve higher-order thinking skills in ESP (critical thinking, analysis, problem solving).	10	11	12	35	29	3.63
14. ICT use in ESP teaching and learning is essential to prepare me to live and work in the 21st century.	7	4	2	34	50	4.19
15. ICT integration in ESP enables me for more interesting and creative work.	4	18	8	43	24	3.67

As it is obvious in Table 1, it can be seen that mean scores in the first part of the questionnaire (i.e., students' perceptions) were above 3.00, which means that the respondents agreed with all the statements therein. The highest mean scores in this part of the questionnaire belonged to items # 14 (M = 4.19), 2 (M = 3.97), 11 (M = 3.94), and 12 (M = 3.88), which

respectively stated that (a) ICT use in ESP teaching and learning is essential in order to prepare the students to live and work in the 21st century, (b) students can avoid problems like handwriting and organizing ideas and texts when they use ICT tools, (c) ICT integration in ESP classes contributes to improving the class atmosphere by making classes less boring and making students more engaged, and (d) ICT integration in ESP classes promotes students' motivation for learning the ESP course.

Table 2. *One-sample t-test results for attitudes towards benefits of ICT integration*

Mean	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
3.64	8.84	14	.000	.64	.48	.76

As Table 2 shows, the *p* value under the *Sig.* (2-tailed) column appeared to be less than the pre-set significance level (.00 < .05), which means that the respondents' agreement with the statements in the Students' Perceptions section of the questionnaire reached statistical significance.

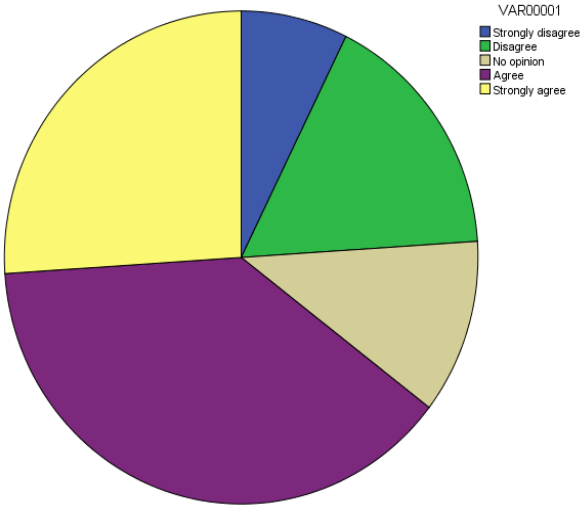


Figure 1. Graphical representation of attitudes towards benefits of ICT integration

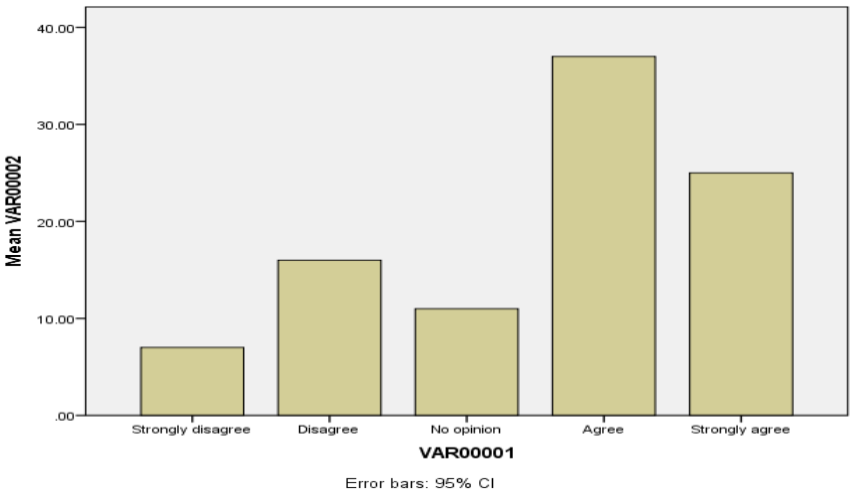


Figure 2. Bar graph for the representation of attitudes towards benefits of ICT integration

According to the above figure, it is evident that a far higher number of the students answered either 'agree' or 'strongly agree' on items 1 – 15 than either disagree or strongly disagree. This is indicative of the notion that the present participants mostly agreed with such a plan to be implemented.

4.2. Attitudes towards Enriching ESP Courses

The next section of the questionnaire was concerned with enriching ESP courses. Similar to the previous section, the participants' answers on the related items (items 16-25) were collected. As it is obvious in Table 3, it can be seen that mean scores in the second part of the questionnaire (i.e., students' attitudes of enriching ESP) were above 3.00.

Table 3. *Frequency for students' attitudes toward enriching ESP*

Statements	**Strongly Disagree**	**Disagree**	**No opinion**	**Agree**	**Strongly Agree**	**Mean**
16. Using ICT-based activities in ESP-course can satisfy my needs, preference, and learning tactics in ESP.	5	23	18	32	19	3.38
17. I think using ICT in ESP can provide authentic and up to date materials for learning ESP.	3	7	2	38	47	4.22
18. I know that incorporating the ICT-based activities in ESP-course can expand my knowledge and information in my major faster than traditional methods.	8	9	10	40	30	3.77
19. Using ICT tools are more effective for learning in ESP than printed materials.	7	10	13	43	24	3.69

20. In my view ICT integration in ESP can be used for ESP curriculum in tertiary education.	5	14	17	36	25	3.63
21. ICT integration in ESP-course is a more powerful tool than discussions and lectures without using ICT.	4	15	16	41	21	3.61
22. ICT integration in ESP can be used to effectively manipulate instructional contents and materials.	14	15	15	34	19	3.29
23. Integrating of ICT-based activities in ESP curriculum can be used as advanced instructional materials in ESP-course for tertiary education.	6	22	10	43	16	3.42
24. Integrating ICT-based activities in ESP-course contributes to self-access, and contributes to learning environment in ESP-course.	8	6	11	36	36	3.88
25. In my view, ICT tools are more powerful tools for learning ESP-course than traditional tools such as using only textbooks for ESP learning.	13	13	11	32	27	3.48

It is clear that, like in the first theme, the respondents agreed with all the statements therein. The highest mean scores in this part of the questionnaire belonged to item # 17 (M = 4.22) stating that 'I think using ICT in ESP can provide authentic and up to date materials for learning ESP'. Results of one-sample t-test can also be seen in table 4.

Table 4. *One-sample t-test results for enriching the ESP course*

	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Mean					Lower	Upper
3.63	7.33	9	.000	.63	.44	.83

As Table 4 indicates, the *p* value under the *Sig.* (2-tailed) column appeared to be .000 which is less than the pre-set significance level (.00 < .05), which means that the respondents' agreement with the statements in the Students' Perceptions section of the questionnaire reached statistical significance. This is clearly evident in the following figure and bar graph.

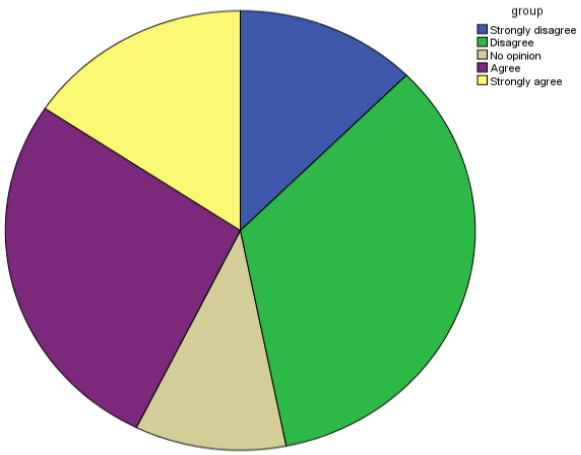


Figure 3. Graphical representation of attitudes towards ICT enriching of ESP

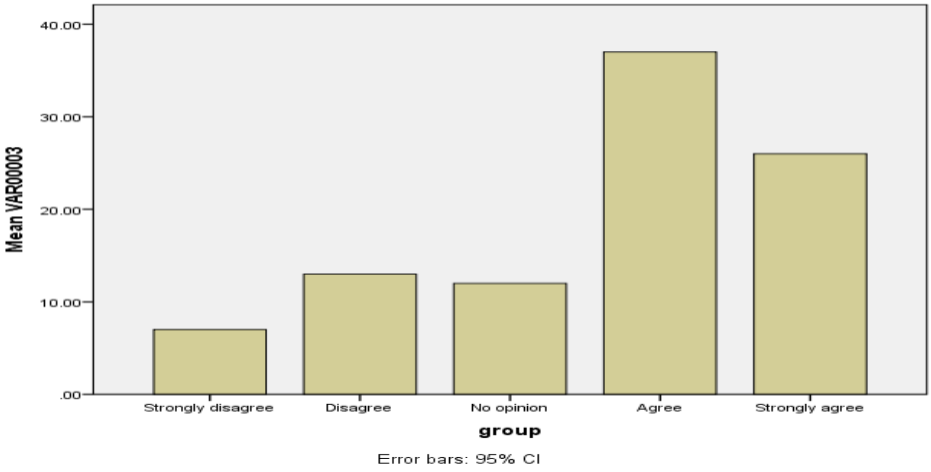


Figure 4. Bar graph for the representation of attitudes towards ICT enriching of ESP

4.3. Attitudes towards Skills in Using ICT

It is clear that, like in the first theme, the respondents agreed with only one statement in the Skill Theme. The other items did not come to be welcoming the participants' agreement because their means were below 3. The mean highest scores in this part of the questionnaire belonged to item # 26 (M = 3.38) stating that 'all ICT tools increase my knowledge and skills as a university student.' The means of other Results of one-sample t-test can be seen in table 5.

Table 5. *Frequencies for the skills in using ICT*

Statements	**Strongly Disagree**	**Disagree**	**No opinion**	**Agree**	**Strongly Agree**	**Mean**
26. All ICT tools increase my knowledge and skills as a university student.	14	18	7	33	25	3.38
27. I myself can learn almost everything about how to use an ICT tool.	9	36	15	25	12	2.94

28. I have enough and satisfactory information about ICT tools and educational software programs in my major.	13	45	9	21	9	2.67

To examine the students' attitudes toward their skills in using ICT tools, one-sample t-test was run and the results are shown in the following table.

Table 6. *One-sample t-test results for skills in using ESP*

Mean	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
2.99	-.01	2	.98	.01	-.98	.88

Results for this section were in contrary to the two above themes. Results showed that students had a negative attitude toward the statements in the third section of the questionnaire (Sig. = 0.98). Following figures illustrate this in clearer forms.

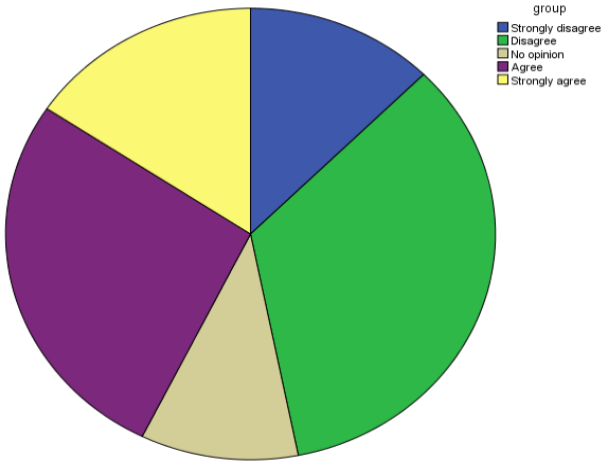


Figure 5. Graphical representation of attitudes towards skills in using ICT

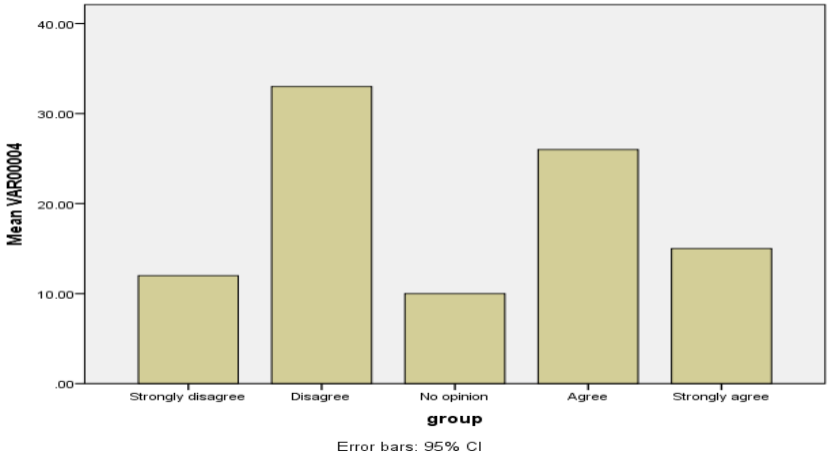


Figure 6. Bar graph for the representation of attitudes towards skills in using ICT

In the above figures and tables, it can be found that frequency of those students disagreeing with 'skills in using ICT' was neither significant nor positive.

4.4. Attitudes towards Obstacles

'Obstacles on the ways to using ICT in ESP' courses was the fourth theme which was investigated in the present questionnaire. To measure this theme, the students' attitudes were asked and analyzed. Result are presented in Table 7.

Table 7. *Frequencies for obstacles in using ICT in ESP*

Statements	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Mean
29. For ICT to be fully exploited for teaching and learning in ESP-course, radical changes in university equipment are needed.	12	24	1	35	25	3.38
30. I have limited experience in using ICT tools and software programs.	29	36	4	20	8	2.40
31. ICT cannot be used in ESP-course because of organizing insufficient time for ESP-course by university.	7	14	10	38	28	3.68
32. There is not sufficient equipment for the integration ICT in ESP instruction.	10	19	8	40	20	3.42
33. Because of the lack of syllabus consist of ICT-supported lessons and ICT-based activities so that ICT cannot be used in ESP.	9	20	19	31	17	3.28

Frequency of answers on the items of this theme were above 3 (items #29, #31, #32 and #33) except for one item (item #30, M=2.40). So regarding the following statement, they participants had a positive attitudes: 29) For ICT to be fully exploited for teaching and learning in ESP-course, radical changes in university equipment are needed; 31) I have limited experience in using ICT tools and software programs; 32) There is not sufficient equipment for the integration ICT in ESP instruction; and 33) Because of the lack of syllabus consist of ICT-supported lessons and ICT-based activities so that ICT cannot be used in ESP. However, they did not agree with 'I have limited experience in using ICT tools and software programs'. Results of one-sample t-test are presented in Table 8.

Table 8. *One-sample t-test results for obstacles in using ICT in ESP*

	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Mean					Lower	Upper
2.23	1.06	4	.34	.23	-.37	.83

It was shown that this theme was not perceived to be significant by the present students because sig. value was 0.34 (>0.05). Also the total mean which was 2.23 indicates that students' ideas were less than the criteria (=3). This can be more easily seen in the following figures.

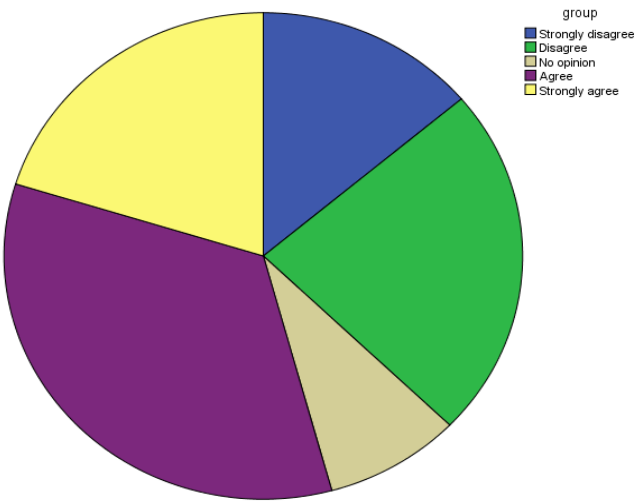


Figure 7. Graphical representation of attitudes towards obstacles to using ICT in ESP

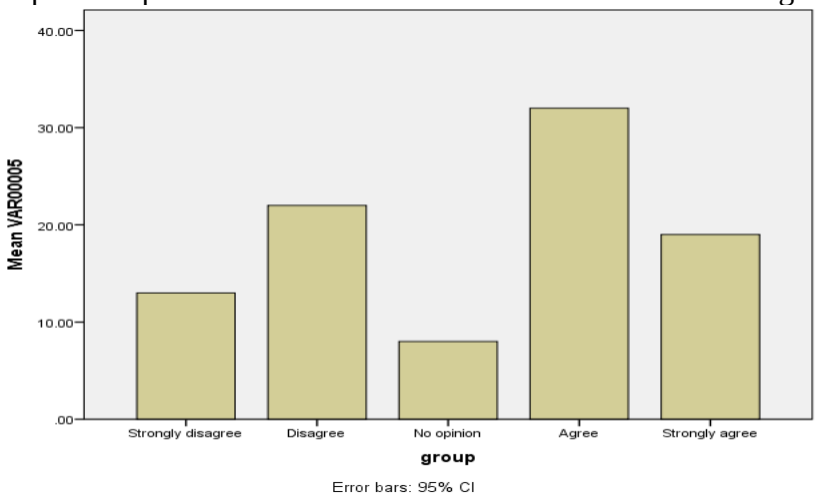


Figure 8. Bar graph for attitudes towards obstacles to using ICT in ESP

4.5. Attitudes towards 'Teacher Education

Items 34-36 were concerned with effects of ICT application on teacher education. It was shown that these items were not significantly perceived by the present participants (Sig. = .11 > 0.05) and that they had negative attitudes toward this theme (Mean = 2.36 < 3). These are shown in Table 9.

Table 9. *Frequencies for effects on 'teacher education'*

Statements	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree	Mean
34. High-level risk taking teachers hold more positive attitudes towards applying ICT for their teaching.	8	20	22	32	15	2.26
35. ICT tools have not been used for teaching ESP because of the lack of competence of teachers.	14	21	14	28	20	2.19
36. ICT tools have not been used for teaching because teachers have not attitudes and beliefs about ICT benefits for ESP teaching in the classroom.	8	10	13	44	22	2.63

As can be seen in the above table, items #34, #35 and #36 were shown to be significantly perceived by the present participants (M=2.26, 2.19 and 2.63 < 3). Because means of these items are lower than 3, it is an indicative of the fact that no positive neither significant attitudes was proposed on them. Moreover, results of one-sample t-test are presented in Table 10.

Table 10. *One-sample t-test results for 'teacher education'*

	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Mean					Lower	Upper
2.36	2.63	2	.11	.36	-.22	.94

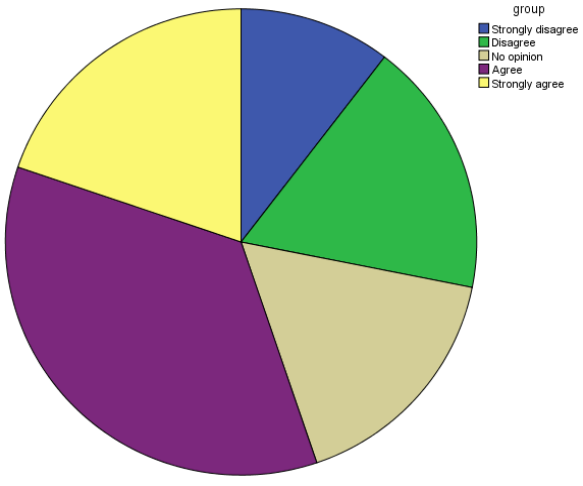


Figure 9. Graphical representation of attitudes towards teacher education

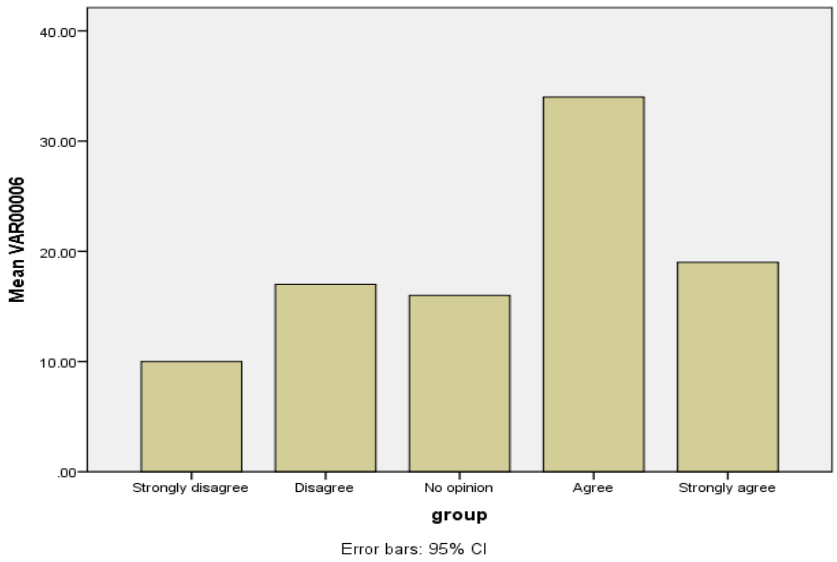


Figure 10. Bar graph for attitudes towards teacher education

4.6. Attitudes towards Social and Cultural Factors

Final theme in this questionnaire took account of cultural factors (items 37 - 40). The table shows that all the mean scores in the first part of the questionnaire (i.e., students' perceptions) were above 3.00, which means that the respondents agreed with all the statements therein. The highest mean scores in this part of the questionnaire belonged to items #37 (*M* = 3.31), 38 (*M* = 3.35), 39 (*M* = 3.36), and 40 (*M* = 3.27), which respectively stated that (a) There is cultural concern of using ICT tools such as using Internet, text chat, mobile, etc. by students in the classroom; (b) Integration of ICT tools in ESP classes (Internet, audio and text chat) by the students causes abuse by the students; (c) Integration of ICT tools in ESP classes (Internet, audio and text chat) by the students causes abuse by the students; and (d) Using ICT tools and software programs in ESP teaching can cause anxiety (technophobia) for some of the teachers because of illiteracy on the ICT tools.

Table 11. *Frequencies for effects on social and cultural factors*

Statements	**Strongly Disagree**	**Disagree**	**No opinion**	**Agree**	**Strongly Agree**	**Mean**
37. There is cultural concern of using ICT tools such as using Internet, text chat, mobile, etc. by students in the classroom.	21	11	4	38	23	3.31
38. Integration of ICT tools in ESP classes (Internet, audio and text chat) by the students causes abuse by the students.	19	12	9	30	27	3.35
39. Fear of being replaced by ICT impact some teachers' decision to integrate ICT in their teaching.	14	8	21	37	17	3.36
40. Using ICT tools and software programs in ESP teaching can cause anxiety (technophobia) for some of the teachers because of illiteracy on the ICT tools.	17	12	14	35	19	3.27

Attitudes toward this theme were both significant (Sig. = 0.001 < 0.05) and positive (M = 3.32 > 3). The following table (Table 6) shows these. In addition, graphical illustrations have been provided for easier understanding.

Table 12. *One-sample t-test results for social and cultural factors*

	Test Value = 3					
	t	*df*	*Sig.* (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Mean					Lower	Upper
3.32	15.68	3	.001	.32	.25	.38

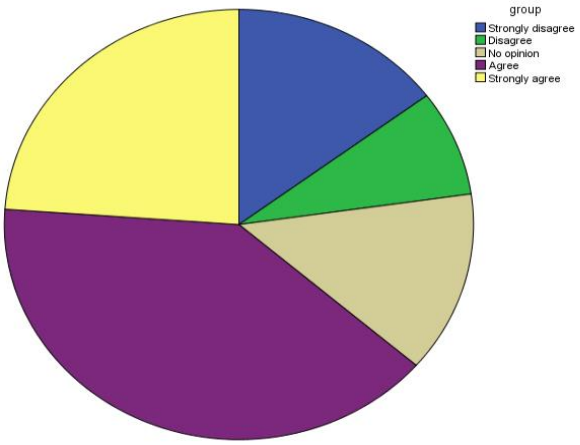
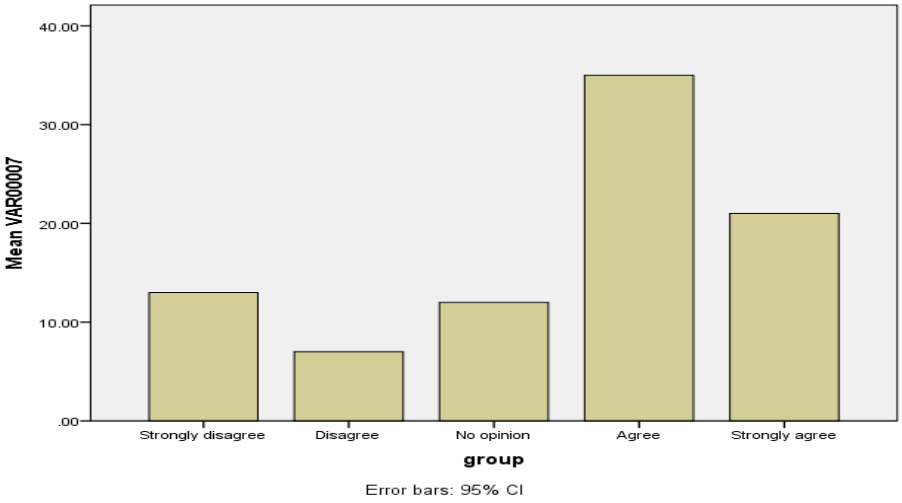


Figure 11. Graphical representation of attitudes towards social and cultural factors



5. Discussion

The question in this study sought to determine "what are the students' toward the benefits and barriers of employing ICT for ESP learning?" on this question, the following responses based on the themes of the questionnaire are presented.

The results showed that employing ICT for ESP learning has the following advantages: increasing interactions, making easier collaborative work, enhancing autonomy, motivation, and higher order thinking skills in ESP learning, understanding ESP more easily, and making

available authentic materials. These results are in line with Jonassen and Reeves' (1996) studies who said that develop autonomous and meaningful learning, support interactive, increase collaborative and student-centered classrooms. In addition, 'Mindtools' contribute to involve students in creative and critical thinking, and contribute students to construct their knowledge. Another possible explanation for this results is that higher-order thinking skills contribute students to become inventors of knowledge, competent and productive communicators, successful collaborators, independent and inventive thinkers, problem solvers and career experts (Zivkovic, 2014). Students also believed that ICT use in ESP learning is essential to prepare them to live and work in the 21st century. students' viewpoints seem to be consistent with Jung' (2006) study who expressed that essential literacy skills involving English and ICT are necessary for growing non-native speakers of English to make certain full participation in the information society. Students' attitudes also are in agreement with those obtained by Dela Rosa (2016), who stated that in todays' world, ICT has grown in a way that it is capable of developing educational opportunities in both formal and non-formal ways.

Regarding the enriching ESP course, the results of the survey revealed that the students had positive attitudes towards enriching ESP course. The students thought that enriching ESP course by ICT can provide authentic and up to date materials for learning ESP. The results are in agreement with those obtained by Cooper (1975) and Stervens (1977) who found that some points which must be considered for a course for someone who needs English in order to do one's job including the environmental and social aspects, the relationships, and authenticity and up to date material. There are, however, other possible explanations that the aim of ESP courses is to contribute students to be able to use language that they will require in future professional settings (Zivkovic, 2014). This can be realized through content-based curriculum that students learn the language by focusing on the 'specialized subject matter' and utilizing authentic materials (Zivkovic, 2014).

Considering the skills in using, the results show that all ICT tools increased students' skills as university students. It seems possible that these results are due to some benefits of using ICT involving equipping with digital age literacy, inventive thinking, higher-order thinking, sound reasoning, effective communication, and high productivity (Tinio, 2002). They also believed that they could learn almost everything about how to use an ICT tool. Moreover, the students did not agree with the claim that they had enough and satisfactory information about ICT tools and educational software programs in their major.

Regarding obstacles to using ICT in ESP, most of the students agreed that for ICT to be fully exploited for teaching and learning in ESP-course, radical changes in university equipment are needed. They expressed that they have enough experience in using ICT tools and software programs but ICT cannot be used in ESP-course because of organizing insufficient time for ESP-course by university. They also believe that there is not sufficient equipment for the integration ICT in ESP instruction. In addition, they believe that because of the lack of syllabus consist of ICT-supported lessons and ICT-based activities, therefore, ICT cannot be used in ESP in Iranian context. These results agree with the findings of other studies (Fathi Vajargah, Jahani, & Azadmanesh, 2010), in which stated "lack of National Policy for using ICT in Higher Education, lack of adequate investments, cultural obstacles, financial challenges, lack of continuity in ICT use, and lack of systematic training and development programs" (p. 38) as several challenges of utilizing ICT in Iran. Regarding the students' attitudes that were positive, toward utilizing ICT in ESP learning in the first part of the questionnaire, and regarding the students' attitudes that they did not have limited experiences

with ICT, they did not see it as an obstacles to implementing ICT in their classes, it can thus be suggested that further research especially in Iranian context are needed.

Considering teacher education, nearly half of the students agreed that high-level risk taking teachers hold more positive attitudes towards applying ICT for their teaching. A possible explanation for this might be that usually, any kind of innovation and change is more useful by risk-taking teachers. Most of the students agreed that ICT tools have not been used for teaching because teachers have not attitudes and beliefs about ICT benefits for ESP teaching in the classroom. The results agree with the findings of other studies, in which employing technology is determined by some factors that external factors involving access to appropriate materials and professional development opportunities (Yousefi Azarfam, & Jabbari, 2012). Internal factors involving awareness of the benefits of technology and personal attitudes towards technological innovations (Yousefi Azarfam, & Jabbari, 2012). A further study with more focus on these issues is, therefore, suggested.

Considering social and cultural factors, the results of survey revealed that students agreed that there is cultural concern of using ICT tools such as using Internet, text chat, mobile by students in the classroom that causes abuse by the students. Turkle (2008) defined 'tethering' as the technology users' over dependence and intense preoccupation with technology, leading to fragmentation of attention and disengagement from authentic activities.

6. Conclusion

This study sets out to investigate the Iranian students' attitudes toward employing ICT for ESP learning. The results of this investigation show that the Iranian students, in general, had positive attitudes toward utilizing ICT in their ESP learning. Findings to emerge from this study is that some barriers to using ICT in ESP involving lack of syllabus consist of ICT-supported lessons and ICT-based activities, lack of enough technical supports to help the teachers, insufficient time and interest, lack of essential infra-structures and facilities difficulty, technophobia, abusing like using social networking that cause the distraction of attention, lack of Integrating ICT-based activities in ESP curriculum. In fact, these issues hinder employing ICT for ESP learning in Iranian context.

The second major finding was the benefits of employing ICT for ESP learning. They were involved enhancing interactions on professional issues between students, increasing collaborative work between students, increasing autonomy, increasing intrinsic motivation, enhancing higher order thinking skills, utilizing authentic materials, raising engagement in learning, and increasing productivity of learning. This study has also found that teachers' beliefs, competence, and their attitudes towards benefits of employing ICT for ESP teaching could be important factors in utilizing ICT in ESP course. In addition, high-level risk-taking teachers has more positive attitudes towards employing ICT for their teaching.

The present study is limited by several limitations that should be addressed. The most important limitation lies in the fact that due to the researchers' limitations in accessing wide population, the results of this investigation are not generalizable. A two-phase design with different forms of methods triangulation would be a useful design to address such a problem. Another problem, which is related to response rate and which is common in the survey research, is that all of the questionnaires are not returned to the researchers.

Despite these limitations, the findings of the present study have provided additional evidence with respect to benefits of integrating technology in learning ESP. The findings could have practical implications for presenting teacher training programs, enriching Iranian ESP textbooks by considering the students learning needs, attitudes, employing ICT-based lessons, and integrating ICT in ESP curriculum in tertiary level. These finding are relevant to both practitioner and policy makers. Although the current study is based on a small sample of participants, the findings suggest new insights into teaching and learning ESP.

This study investigated only the students' attitudes through survey but future research could investigate utilizing ICT for ESP learning by employing triangulation method. This study was limited with a small sample size, therefore the findings might not be generalized to the wider population. In addition, considering the attitudes of the ESP teachers would also give more depth to this study. Thus, further research is needed to investigate teachers' attitudes toward ICT integration in ESP teaching. More research is required to examine authentic assessment by ICT integration in ESP.

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