

ICT Use in EFL Classes: A Focus on EFL Teachers' Characteristics

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Abstract

This study investigates the level of Information and Communication Technology (ICT) use in teaching English as a foreign language (EFL). Additionally, it explores the effect of EFL teachers' personal and technology-related characteristics in ICT use in English classes. Two hundred and forty-eight full time teachers participated in the study and filled in the personal information form, computer anxiety rating scale, computer attitude questionnaire, ICT use rating scale, and computer literacy questionnaire. The results of data analysis revealed that digital portable devices were used more than computer or network applications/tools in English classes and teachers used technology most frequently in teaching oral skills. It was also found that ICT use correlated inversely with teachers' age, years of teaching experience, and computer anxiety. ICT use was found to be positively and significantly related to teachers' academic credentials, computer ownership, computer literacy, and use; while ICT use was not related to attitude and gender. Multiple regressions showed that from among the variables that correlated with ICT use, teachers' computer literacy and academic credentials could predict ICT use.

Keyword: ICT use; English classes; Teachers' characteristics

1. Introduction

The sheer presence of technological tools in teaching and learning has opened up a whole new world of investigation into the issue of teaching effectiveness. The general finding of this string of research supports the fact that technology has the capacity to afford opportunities for powerful teaching and learning environments (Hermans, Tondeur, van Braak, & Valcke, 2008) and can impact students' learning (Cancannon, Flynn, & Campbell, 2005), motivation (Mahdzadeh, Biemans, & Mulder, 2008), critical thinking (Lim, Teo, Wong, Khine, Chai, & Divaharan, 2003), and autonomy (Claudia, Steil, & Todesco, 2004).

Based on this assumption, many developed countries have invested heavily in the integration of innovative technological tools into the curriculum to improve the quality of teaching and learning. Following this new trend, governments in developing countries have also embarked on innovative plans to develop ICT infrastructures to integrate ICT tools into K-12 curriculum. The immediate concern of these developmental plans is the improvement of teaching and learning at school and university. However, the grand vision is to help the society meet the challenges of information era and cope with rapid changes of life and work style. As teachers are considered the key player in successful implementation of educational reforms, part of this effort concerns empowering teachers in pre-service and in-service courses (Paraskeva, Bouta, & Papagianni, 2008). Consequently, research studies on factors that affect ICT use by teachers in different countries have started to boom recently (e.g., Baylor & Ritchie, 2002; Granger, Morbey, Lotherington, Owston, & Wideman, 2002; Robinson, 2003; Hew & Brush, 2007; Hermans et al., 2008; Paraskeva et al., 2008; Kim, Jung, & Lee, 2008; Inan & Lowther, 2010; Zamani, 2010).

The general findings of these studies revealed that notwithstanding the fast development of ICT infrastructures, there is still a gap between the innovation objectives and level of ICT use by teachers and connectivity and access to equipment

do not necessarily guarantee successful or productive ICT use (Granger et al., 2002). It is suggested that ICT use is a complex and slow process (Levin & Wadman 2008) that is influenced by many key factors such as the characteristics of users (teachers and students), context of technology use, and pedagogical philosophies of the country's educational system (Granger et al., 2002). The present study thus focuses on investigating factors that contribute to ICT integration into English classes in Iran where English is a foreign language for both teachers and students considering teachers' personal and technology-related characteristics.

1.1 ICT use in English classes

ICT use in general terms is any use of "computing devices such as desktop computers, laptops, handheld computers, software, or Internet in K-12 schools for instructional purposes" (Hew & Brush, 2007, p. 225). However, more specifically it refers to the use of technology by teachers for instructional preparation, instructional delivery, and technology as a learning tool for students (Inan & Lowther, 2010).

An overview of the developmental history of computer-assisted language learning (CALL) shows that ICT tools have been actively and widely used in language classes from the initiation of computers into the world due to the fact that language teachers have always been the pioneer of using innovative teaching tools in their classes (Amiri, 2000). The history of CALL consists of three distinct phases, i.e., behavioristic, cognitive, and interactive CALL, each of which is characterised with both a certain level of computer technology including mainframes, PCs, and multimedia technologies and a specific language learning and teaching approach including behaviorism, cognitivism, and constructivism (Warschauer, 1996). Coincidental with the development of technology and second language acquisition (SLA) research, EFL teachers have utilized ICT tools for teaching and learning purposes.

EFL teachers use ICT tools for preparing teaching materials and activities to be used in teaching pronunciation (Lee, 2008), grammar (Al-Jarf, 2005), vocabulary (Tsou, Wang, & Li, 2002), listening and speaking (Hochart, 1998), communication skills (Lee, 2002), reading (Akyel & Ercetin, 2009), and writing (Chikamatsu, 2003). They also use technological tools such as PCs, laptops, or mobiles in the classroom for instructional delivery very effectively and frequently. Learning applications prepared by teachers/students or commercially produced ones such as drills, tutorials, and computer-based tasks are used in the classroom to promote collaborative learning of English skills (Beatty & Nunan, 2004). Furthermore, EFL teachers use computer-mediated-communication (CMC) or software as a tool for making authentic and meaningful communication (Mahfouz & Ihmeideh, 2009). In this way technology can provide learners with a range of authentic materials and tasks that have a positive influence on their autonomy.

Unlike uncertainties expressed towards ICT use and students' outcome in some subject matters (Reynolds, Treharne, & Tripp, 2003), almost all research done in CALL effectiveness support the fact that the use of computer can enhance foreign and second language learning (Vandewaeterea & Desmet, 2009). However, much of the research on CALL effectiveness has focused on software design and task pedagogy and inquiries on end-users' interaction with computer have emerged only recently in the third phase of CALL (Chapelle, 2003; Vandewaeterea & Desmet, 2009). In this respect, understanding EFL teachers' characteristics and their relationship with ICT use seem to be of vital importance in order to pave the way for more effective teaching and learning in CALL environment.

1.2 ICT use and teachers' characteristics

ICT use by teachers has been under investigation for a long time for two basic reasons: to find the barriers on the way of successful integration of technology into the curriculum (Hew & Brush, 2007) and to take suitable actions in order to include courses of training teachers in modern technologies (Paraskeva et al., 2008). In this respect, a large number of studies have focused on finding the role of teachers' personal characteristics and demographic variables such as age, gender, and years of teaching experience in their ICT use in the classroom (e.g., Robinson, 2003; van Braak, Tondeur, & Valcke, 2004; Bebell, Russell, & O'Dwyer, 2004).

Gender gap in general has been the subject of many studies in the literature of computer use (e.g., Cooper, 2006) revealing mostly inconclusive results. However, studies with regard to teachers' gender and ICT use have reported lower levels of computer use by female teachers (Volman & van Eck, 2001) due to female teachers' limited technology access, skill, and interest.

Studies on teachers' teaching experience and age have reported that teachers' ICT use, experience, and age are inversely associated meaning that more experienced teachers and older teachers tend to use computers less frequently (Van Braak et al., 2004; Bebell et al. 2004). Some studies have attributed this to veterans' limited computer proficiency (Bingimals, 2009), confidence (Robinson, 2003; Snoeyink & Ertmer, 2001) and readiness to use ICT in their classes (Inan & Lowther, 2010).

In addition to personal characteristics, teachers' technology-related variables and their relationship with computer use in

the classroom have been scrutinized by many studies over the past few years. Teachers' attitudes towards technology are among the most frequently studied technology-related variables in ICT use literature because it is generally assumed that positive computer attitudes foster computer integration in the classroom (van Braak et al., 2004). It has been suggested that attitudes towards technology take shape with regard to the perceived usefulness and ease of use (Davis, 1993) and is a major enabling/disabling factor affecting adoption of technology by teachers (Albirini, 2006; Hermans, 2008). The general finding of attitudinal studies suggests that any successful implementation of new technology in education requires the development of users' positive attitudes toward it.

In line with this, it has been postulated that the development of teachers' positive attitudes toward ICT can be a key player in reducing teachers' resistance to computer use (Watson, 1998) that is associated with computer anxiety. It has been found that computer anxiety can be related to lack of knowledge and skills about computer (e.g., Al-Oteawi, 2002), computer ownership, and frequency of computer use (Baloglu & Cevik, 2008). It is assumed that computer anxiety can be a barrier to basic computer literacy or skills and teachers with higher levels of computer anxiety might experience difficulties in using computer in their classes and thus would avoid that (Baloglu & Cevik, 2009).

Another factor that affects computer use in the classroom is teachers' computer skills and knowledge (Pamuk & Peker, 2009). According to Hew & Brush (2008) three types of knowledge and skill can create major barriers to ICT use by teachers: the lack of specific technology knowledge and skills (Snoeyink & Ertmer, 2001), technology-supported pedagogical knowledge and skills (Hughes, 2005), and technology-related-classroom management knowledge and skills (Lim et al., 2003). There is evidence in the literature that computer skill is influenced by age, anxiety, attitudes, computer use, and access (Poynton, 2005).

It is noteworthy that much of the literature in this regard revolves around the patterns of ICT use among teachers in general and ICT use by teachers of different subject matters remains an open question.

1.3 The present study

More recently, the knowledge of English has been considered as one of the factors that can affect technology use in developing countries (Zamani, 2010). English is considered as the dominant language of technology and computer (Albirini, 2006) because "instructions, messages, and internet texts are generally in some variant of the English language" (Navdal, 2007, p. 1113). Also, English is the most commonly used language among ten top languages exploited for communication and interaction via the internet (Internet World Stats, 2010) and almost two-third of websites on the internet are in English (Global Internet Statistics, 2010).

Moreover, language is a key factor in computer system interfaces and much of computer use entails language including "reading texts and instructions, seeking information, following hyperlinks and sending and receiving messages" (Conti-Ramsden, Durkin, & Walker, 2010, p. 2). English is "the main computer language" (Albirini, 2006, p. 378), and "PC users are forced into this language by necessity, if they want to master the most elementary dialogue with their computers or to understand the information they seek" (Navdal, 2007, p. 111).

Generally, research on the relationship between computer and English has usually taken the direction of effect to be from computer use to success in English, suggesting a persuasive argument to support the fact that using technology and computer-mediated communication tools can impact second or foreign language learning. As a consequence, the bidirectionality of this relationship is taken for granted (Rahimi & Yadollahi, 2011), that is, knowledge of English can be a contributing factor to ease of technology use, perceived ease of use, positive attitudes, and even purchasing computers (PC ownership). So the assumption underlying this study is that EFL teachers use technological tools in their instruction regularly due to their level of English proficiency and familiarity. It is arguable, then, that EFL teachers are particularly in advantageous position to successfully integrate technological tools/applications in their instruction without much problem or fear. As there is a dearth of research on the role of EFL teachers' personal and technology-related characteristics in ICT use in language instruction, this study aims at finding the answers to the following research questions:

- a.) What are the most frequently used technological tools for teaching language skills and components in EFL classes in Iran?
- b.) Is there any relationship between Iranian EFL teachers' personal/technology-related characteristics and ICT use in teaching English?
- c.) How much of the variance in ICT use can be predicted by the independent variables of this study?

2. Methods

2.1 Participants

The participants were 248 Iranian EFL teachers selected according to stratified random sampling from schools of one metropolitan city in Iran. There were around 600 full time English teachers working in 4 districts of the city. One hundred and eleven male (44.8%) and 137 female (55.2%) EFL teachers were selected randomly from the population. The size of the sample was determined to be 234 according to Krejcie and Morgan's (1970) formula with confidence level of 95% (margin of error = 5%). Teachers had from 1 to 28 years of teaching experience with a mean of 11.66 years (SD=6.40) and ranged in age from 20 to 52 (mean= 34.78 years; SD= 7.65). Two hundred teachers (80.6%) had Bachelor degrees in teaching English as a foreign language (TEFL) and 48 teachers (19.4%) had Master degrees in TEFL.

The amount of time the respondents spent on working with their PCs varied from below one hour (21%, n=52) to one hour (51%, n=128) or three hours (25.4%, n=63) per week. However, 2.6% (n=5) of the respondents reported that they did not use their PCs at all. They also used the Internet differently from below one hour (45.6%, n=113) to one hour (16.9%, n=41), two hours (10.9%, n=27), and three hours (22.6%, n=56) per week. Just 4% (n=10) of the teachers did not use the Internet at all.

2.2 Instruments for data collection

2.2.1 Personal information form

Teachers' personal characteristics were collected by using a personal information questionnaire. Teachers were asked to provide information about the following personal variables: age, years of experience, computer ownership, computer use, internet use, and internet access. Computer and internet use were assessed by giving the following options: never, below one hour a week, one hour a week, two hours a week, three hours a week, and more than 3 hours a week specified by respondents.

2.2.2 Computer anxiety rating scale (CARS)

To assess computer anxiety, Computer Anxiety Rating Scale (CARS) (Weil, Sears, & Rosen, 1988) was used. CARS is a 20-item scale that asks participants to express how anxious (nervous) each of the items would make them in real time of filling in the questionnaire. The participants rate themselves on a 5-point Likert scale ranging from 'not at all' to 'very much'. Among the issues addressed in CARS are: anxiety related to the machines themselves, their role in society, computer programming, computer use, and problems with computers and technology (Ursavaş & Karal, 2009). The alpha coefficients of 0.90-0.95 have been reported by the developers for the scale. Other researchers have also reported high alpha coefficient of 0.91 for this measure (e.g., Korukonda, 2007; Mcilroy, Sadler, & Boojawon, 2007). Weil, Sears, and Rosen (1988) used factor analysis technique to investigate factor structure of CARS, which resulted in the emergence of three factors including 'Interactive Computer Learning Anxiety' (11 items), 'Consumer Technology Anxiety' (4 items), and 'Observational Computer Learning Anxiety' (5 items). Reliabilities of 0.80, 0.70 and 0.60 for the three factors have been reported.

CARS has been translated into Persian and its psychometric characteristics have been calculated (Rahimi & Yadollahi, 2009). The Cronbach's alpha reliability coefficient of CARS for this study revealed to be 0.92.

2.2.3 Computer attitudes questionnaire

To assess participants' computer attitude, computer attitude scale for language teachers (CASLT) was used (Daud, 1995). CASLT is a 21-item scale that measures teachers' attitude towards computer integration into teaching English language based on a 5-point Likert scale with the high score (5) representing a positive attitude (strongly agree) and low score (1) representing a negative attitude (strongly disagree). To investigate factor structure of the Persian version, a principal components analysis (PCA) with varimax rotation was used. The PCA revealed five main factors explaining 57% of the variance. The Cronbach's alpha reliability coefficient of the instrument was found to be 0.89.

2.2.4 ICT use rating scale

To determine the level of ICT use in teaching language skills, a rating scale was used. It had 25 items and asked teachers to determine which technology they used in teaching each language skills (listening, speaking, reading, writing) and components (grammar, pronunciation, vocabulary) by selecting one of the following options: never=1, rarely=2, sometimes=3, often=4, and very often=5. ICT use in teaching was defined for teachers as using technology for preparing instructional materials, delivery of instruction, and student learning. The rating scale consisted of three main sections including computing devices or applications (e.g., computer, word processors, software), network-based applications (e.g., podcasting, e-mail services, social networking), and digital devices that work with/without computers (e.g., CD player, mp3 player, digital camera). Cronbach's alpha reliability coefficient of the scale has been found to be 0.83.

2.2.5 Computer literacy questionnaire

To assess teachers' perceived ICT literacy, Computer Literacy Self-Assessment Scale (CLSAS) was adapted and used. The original questionnaire consisted of 65 items along with two major sections including computer and internet skills with seven subsections on 5-point Likert scale. EFL teachers were asked to rate themselves regarding their level of competency in handling the computer and internet operations on the level of advanced (5 points) upper intermediate (4 points), intermediate (3 points), beginner (2 points), and no competency (1 point). Computer knowledge and skills were assessed through five subsections: general computer knowledge, file management knowledge, system maintenance and security knowledge, word processing skills, and power point skills. Also, the internet assessed skills included communication skills and web skills.

To explore the factor structure of this instrument, a principal components analysis (PCA) with varimax rotation was used. The PCA indicated five main components accounting for 64% of the variance. Ogunkola (2008) has reported the reliability estimation of 0.73 using test-retest method of two weeks interval for this scale. The Cronbach's alpha reliability coefficient of the scale in this study was found to be 0.93.

3. Results

To find answers to research questions descriptive statistics, chi square test, correlation technique and multiple regressions analysis were utilized.

3.1 ICT use in EFL classes

The frequency count of using three types of technological tools in teaching four language skills and three language components are summarized in Table 1.

<Table 1 about here>

The chi square test was utilized to assess the goodness-of-fit and to find out whether the use of technological tools in teaching English skills and components had a good fit. The result of chi square was significant ($\chi^2 = 179.348$, $df=6$, $p=0.000$) indicating that there was not a good fit of ICT use in teaching English skills and components and teachers used ICT tools in teaching certain skills and components more than others. As Table 1 illustrates, teachers used technology in teaching listening (26%) more than other skills. Following that, they used ICT tools in teaching speaking (14.8%), vocabulary (14.4%), pronunciation (14.2%), reading (12%), grammar (9.6%), and writing (9.0%).

Furthermore, to explore if there was any relationship between language skills/components (3 levels) and the type of ICT tools (3 levels) EFL teachers used, another chi square test was conducted. The result of chi square was significant ($\chi^2 = 48.648$, $df=4$, $p=0.000$). The result of Cramer's V was also significant ($V=0.135$, $p=0.000$), implying that there was a relationship between the type of language skills/components the teachers taught and the type of technology they chose for teaching those skills.

Teachers used digital devices most frequently for teaching oral skills, i.e., listening and speaking (47.7%). More detailed analysis showed that among the devices included in the rating scale, CD player was most frequently used for teaching oral skills.

The network applications were used most frequently for teaching written skills, i.e., reading and writing (36.5%). Among the applications listed in the rating scale, email service and search engines were the most frequently used ones in teaching written skills.

Further, participants reported to use network applications (43.2%) and -very near to that- computers (42.4%) most frequently for teaching language components, i.e., grammar, vocabulary and pronunciation. Among the network applications search engines and among computer applications the software, word processors, and printer were used most frequently in teaching language components.

3.2 ICT use and EFL teachers' personal characteristics

The result of data analysis revealed that ICT use correlated inversely with age ($r=-0.23$, $p < 0.01$), and years of teaching experience ($r=-0.16$, $p < 0.05$), and positively with teachers' academic credentials ($r=0.28$, $p < 0.01$). However, no significant relationship was found between gender and ICT use.

3.3 ICT use and EFL teachers' technology-related variables

The result of correlation revealed that ICT use was significantly related to computer ownership ($r=0.13$, $p < 0.05$), computer use ($r=0.30$, $p < 0.01$), internet use ($r=0.26$, $p < 0.01$), and computer literacy ($r=0.49$, $p < 0.01$). An inverse correlation was found between computer anxiety and ICT use ($r=-0.23$, $p < 0.01$). However, ICT use and computer attitude were not found to be related ($r=0.05$)

3.4 Predictors of ICT use

In order to determine the proportion of the variance in ICT use that could be explained by the selected independent variables of this study, multiple regressions analysis was performed. However, only those variables that individually correlated with the dependent variable entered the equation. The summary of the multiple regressions results is presented in Tables 2 and 3. The results indicated that more than 25% of the variance in ICT use was explained by two independent variables of this study. The test statistic was significant at the 0.05 level of significance ($F(8, 239) = 11.355$; $p = 0.000$).

<Tables 2 & 3 about here>

As Table 3 illustrates, the results of multiple regressions indicate that two teacher-related variable (computer literacy and academic credentials) explain the greatest amount of variance in ICT use.

4. Discussion and Conclusions

4.1 ICT integration in EFL classes in Iran

The result of the study revealed that EFL teachers used technology mostly in teaching listening followed by speaking, vocabulary, pronunciation, reading, grammar, and writing. This finding is consistent with Yang and Huang's (2008) study who reported that English teachers in Taiwan used technology most often in activities of listening and speaking, while technology was least used in teaching grammar. However, the finding casts doubts on the proposition that technology is basically used to impact English literacy learning, i.e., reading, writing, grammar, spelling and punctuation (e.g., Burn & Leach, 2004).

Further, the results showed that EFL teachers have formulated a selective ICT-use strategy based on the nature of language skills/components they teach with a general tendency to use digital portable devices. As the content of the existing EFL curriculum in Iran has not been revised for at least two decades (Ketabi & Talebinejad, 2009), teachers' ICT-infused teaching has apparently developed based on a 'culture clash' between the existing pedagogical and learning environment and the changes technology use demands (Goodson & Mangan, 1995). It is documented in the literature of EFL teaching effectiveness in Iran that many teachers are involved in constant struggle with problems posed by different areas of EFL curriculum particularly inappropriate teaching materials and lack of time to teach the content (Rahimi & Nabilou, 2009).

In this context, ICT-use becomes an extra burden for teachers who just want to finish the textbook on schedule for national exams. Even teachers who are eager to use ICT in their classes prefer to use simple devices/applications for listening activities that do not take a great deal of class time. Although the use of audio contents (such as podcasting) that can be easily downloaded, played on mp3 portable devices and listened to in language classes have gained popularity for information, communication and education (Walls, Kucsera, Walker, Acee, McVaugh, & Robinson, 2010), it is unknown whether teachers can follow CALL methodology and ICT use skills properly in their classes using these types of devices. This raises some new questions about the effectiveness of teaching and learning using this strategy and the ways students' attitudes towards the value of technology in education would be affected by such ICT-infused instruction. Further, this finding addresses the issue of EFL curriculum reform at the macro level and invites all Iranian educators, educational administrators, and researchers to carefully delineate instructional, pedagogical and organizational changes that are required to occur in educational system in accordance with national ICT developmental plans and to take systematic actions to reach the ideal society that has been envisioned in Iran's National Document of Development (2006).

It was also found that following CD players, email services, search engines, educational websites, software, word processor and printer were the applications and tools Iranian EFL teachers used for instructional purposes. Part of this finding is consistent with what Becker, Ravitz, and Wong (1999) found, that word processing software, CD-ROM reference software, and World Wide Web browsing software were the most commonly used applications by teachers regardless of the subject they taught.

It is worth mentioning, however, that the frequency counts of using computer and internet applications/devices ($n=437$ and $n=74$ respectively) were considerably less than frequency counts of using digital portable devices ($n=815$) in language classes supporting the fact that Iranian teachers' use of the internet is generally limited and their school computer use is influenced by the availability of appropriate software (Zamani, 2010). This finding highlights the importance of raising EFL teachers' technology awareness to help them understand educational values of different technological innovations and integrate them accurately into instruction. Qualitative follow-up studies are required to explore the level of EFL teachers' ICT use awareness and ways to promote this awareness while fast development of ICT infrastructures is taking place across the country and the globe.

Also, to encourage teachers to integrate educational software programs more frequently into their classes, high quality CALL materials should be available for English classes. To be able to revolutionize software production in settings like Iran, needs of teachers and students and paradigm shift in education and applied linguistics from behaviorism to constructivism should be taken into account in CALL materials development.

EFL teachers should also become familiar with the advantages of using internet-based applications in language classes or for professional development. The whys and the wherefores of their avoidance of the internet -while they are quite familiar with the language of the internet- should be explained with interview studies and subsequently the detected problems with regard to literacy, attitudes, and anxiety have to be alleviated with in-service courses and appropriate resources. Useful internet applications for class use, professional empowerment, or communication with other colleagues across the country or the globe should be introduced to EFL teachers. This demands a thorough and regular content analysis of the internet-based sources by educators, researchers, and teachers themselves.

4.2 Teachers' personal characteristics and ICT use

The findings revealed an inverse correlation between ICT use, age, and years of teaching experience. This supports the fact that ICT use decreases with age and teaching experience of teachers and that younger teachers incorporate ICT tools into their teaching more than their older counterparts (Van Braak et al., 2004; Bebell et al, 2004; Inan & Lowther, 2010). It is evident in the literature that teachers' age and experience are related to their lack of computer knowledge and skills in terms of computer-based or computer-managed instruction (Davis, 1993) and lack of enough training to exploit effective ways of integrating instructional technology into language teaching (Dunn, & Ridgway, 1991). Previous research (e.g., Pamuk & Peker, 2009) shows that teachers who are above middle age and who did not have much formal computer training in their high school or college education are more likely to exhibit computer anxiety than younger teachers and this can be reflected in their limited use of ICT use in the classroom. This claim actually was supported by our findings, as a positive and significant correlation was found between age and computer anxiety among the participants ($r=0.18$, $p<0.01$). Moreover, as Prensky (2001) believes younger teachers are ICT natives who were born in a digital world and since they have been exposed to ICT more than their older colleagues (Johns, 2004), they use ICT tools with more confidence (Peerar & van Petegem, 2010).

As the relationship between ICT use and teachers' age and experience seems to be universal, longitudinal research is required to shed more light on the reasons why teachers' willingness of using ICT tools decreases with experience regardless of the context and culture of teaching. If the roots of the problem are not identified, young teachers who enter the profession each year will lose their enthusiasm for ICT implementation as they become more experienced because field experience and the culture of the work place are among the determinant of teachers instructional behavior (Korthagen, 2004).

In the light of the evidence from this study, no significant correlation was found between gender and ICT use. Similar studies reported that the old stereotypic gender divide in terms of ICT use in teaching is closing in the 21st century (Poynton, 2005). Yet, some other previous studies have shown that gender plays a significant role in integration of ICT in education (van Braak et al., 2004). With such inconclusive and inconsistent results from literature on the gender, it can be concluded that it is psychological gender rather than biological gender which has more effect on computer anxiety and consequently computer use (Ursavaş & Karal, 2009). Psychological gender is associated with an individual's level of masculinity and femininity irrespective of his or her biological gender. It has been suggested that computer anxiety is associated with femininity or a tendency to show a preponderance of stereotypical feminine characteristics. So in cultures where computer is considered as a male domain, those who have more feminine characteristics would show higher degree of computer anxiety regardless of their biological gender (Todman & Day, 2006). However, biological gender differences in computer anxiety and computer performance are not found in cultures characterized by non-masculinisation of the computer (Brosnan, 1998).

Considering the fact that gender disparities in education have been eliminated in Iran as a result of the country's national four Five-Year Development Plans (1989-2009) (World Bank, 2009) and Iranian female users have achieved equality with males regarding computer access and use and they are fully aware of the values of computer-based instruction (Rahimi & Yadollahi, 2009) due to social and economic development of the country in recent years, it is not surprising that our study did not show any difference between male and female teachers' computer use for instructional purposes.

4.3 Teachers' technology-related characteristics and ICT use

Consistent with previous research, the findings of this study demonstrated that PC ownership and computer experience in terms of home computer use and internet use were related to successful ICT use in teaching procedures (Alghazo, 2006).

Moreover, it was found that ICT literacy and integration were related, meaning that more skilled teachers in terms of computer and internet applications tended to use ICT tools more frequently in their teaching (Tezci, 2009). In line with this, Bingimlas (2009) recognized the lack of enough ICT knowledge and skill as one of the major barriers many teachers encounter for successful integration of ICT applications. Despite a strong desire of teachers to use ICT in their classes, sometimes they cannot use it to increase the quality of teaching and learning due to lack of essential ICT skills (Robinson, 2003).

An inverse correlation was found between teachers' computer anxiety and ICT use; however, the correlation was not very strong. This casts doubts on the findings of other studies that have reported that teachers' ICT use in class is strongly under the influence of teachers' level of computer anxiety (Pamuk & Peker, 2009; Poynton, 2005; Baloglu & Cevik, 2009). The finding suggests that there are other factors affecting EFL teachers' willingness to use technology in their classes other than the fear of technology. Surprisingly, computer attitudes and ICT use were not found to be related and unlike other studies (Albirini, 2006) computer attitude could not predict ICT use in English classes. This shows that positive attitude towards ICT or constructivist perspectives on learning will not automatically lead to the implementation of ICT or innovative teaching practice (Peeraer & Petegem, (2010) and as Judson (2006) suggested, there may be little correlation between stated beliefs and actual practice due to contextual constraints. In our case, the relationship between teachers' anxiety/attitude and practice of ICT use may have been mediated by the problems of the existing curriculum.

4.4 The predictors of ICT use

The results of multiple regressions revealed that from among the variables that correlated with ICT use, teachers' computer literacy and academic credential (having MA degrees) were good predictors of ICT use in English classes. This shows that teachers' computer skills and education can be the most significant variable in predicting patterns of integrating ICT tools in the classroom (Hew & Brush, 2007; Inan & Lowther, 2010).

As computer literacy was the strongest predictor of ICT integration, more study is required to identify the weaknesses of teachers' ICT literacy nationwide to help decision makers develop literacy standards for EFL teachers -which at the present is entirely lacking- as a part of educational reform. Following that, intensive plans should be implemented to enhance EFL teachers' literacy and to ensure that teachers achieve those standards throughout the country.

Further, the finding that MA holders use ICT tools more than BA holders supports the fact that the knowledge of English can influence ICT use. MA holders are expected to be more knowledgeable in English and teaching issues since they attend advanced courses in TEFL and they had passed national exam of English language proficiency and content knowledge to enter graduate programs. In fact the correlation between teachers' computer literacy and academic credentials supports this assumption ($r=0.30, p<0.01$).

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Table 1. Frequency of using technological tools in EFL classes by language skills/components

Language skills		Technological tools							
		Computers		Network		Digital Devices		Total	
		f	%	f	%	f	%	f	%
Oral skills	Listening	89	20.4	7	9.5	249	30.4	345	26.0
	Speaking	50	11.4	8	10.8	138	17.3	196	14.8
Written skills	Reading	49	11.2	15	20.3	96	11.9	160	12.0
	Writing	64	14.6	12	16.2	43	5.7	119	9.0
Language components	Grammar	52	11.9	11	14.9	64	7.6	127	9.6
	Vocabulary	75	17.2	14	18.9	102	12.3	191	14.4
	Pronunciation	58	13.3	7	9.4	123	14.8	188	14.2
	Total	437	100	74	100	815	100	1326	100

Table 2. Analysis of variance

Sources	Sum of squares	DF	Mean Square	<i>F</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>p</i>
Model	14106.456	8	1763.307	11.355	0.275	0.251	0.000
Error	37114.444	239	155.291				
Total	51220.899	247					

Table 3. Multiple regressions on dependent variable (ICT use)

Variables	B	β	<i>t</i>	<i>P</i>
Age	-.193	-.103	-1.46	.253
Experience	.192	.085	.976	.330
Academic credentials	4.719	.130	2.162	.032*
Computer ownership	2.701	.043	.747	.456
Computer use	-.527	-.027	-.364	.717
Internet use	1.017	.113	1.890	.060
Computer anxiety	-.057	-.059	-.963	.337
Computer literacy	.080	.388	4.844	.000*