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Foreign language instructors' computer and information literacy perceived self-efficacy: a school of foreign languages case

Gonca Ekşi*

Gazi University, Turkey

Abstract

The purpose of this study is to determine self- efficacy of foreign language instructors (n=47) in information literacy and computer literacy after an in-service training on ICT skills and a considerable amount of investment on hardware, software and the infrastructure in the School of Foreign Languages at Gazi University. The relation between self-efficacy in information literacy and computer literacy is also examined. Moreover, computer and information literacy of a sample group of students (n=75) in the school of foreign languages are also determined to see if there is a technology and information gap between the skills of instructors and their students. The instruments in the study are: information literacy self-efficacy scale developed by Kurbanoglu, Akkoyunlu and Umay (2006) and computer literacy self-efficacy scale by Kurbanoglu and Akkoyunlu (2003). The results showed the instructors have high self-efficacy scores in both areas. There is no statistically significant difference in information literacy and computer literacy self-efficacy scores of instructors according to sex and experience. Only in advanced computer skills, at a larger scale (.08) there is a difference favouring instructors with 1-5 years of experience. The findings also show that information literacy and computer literacy skills reinforce each other. Finally, a comparison of the scores of instructors with those of the students show that the instructors do not fall behind their students, and even are better in some aspects. The high self-efficacy scores of instructors might be attributed to the ICT training they received and their devotion.

Keywords: *information literacy, computer literacy, ICT, teacher development, in-service training, self-efficacy*

The past few decades have witnessed enormous advances in information technology, which has indispensably affected the field of education. Given the fact that newer generations of students live technology-intensive lives with computers, the internet, social networks and easily available information through technology, we can conclude that the traditional

* Assist. Prof. Dr. Gonca Yangın Ekşi, e-mail:goncayangin@gmail.com

classroom with chalk-and-talk cannot appeal to the new generation of students or meet the needs of stakeholders in education. Today, using new technologies to increase the quality of education has become indispensable. Information and communications technologies (ICTs) are changing the face of education globally. This requires the education system not only to become compatible with emerging information and technology but to keep up with its pace as well.

New information and technologies have had tremendous impact on business and economics throughout the world. Probably the 21st century will be marked by the rise of information and knowledge as drivers of transformation. The age of “information and knowledge revolution” combined with globalization has led to a rise in knowledge-based industries which require an educated labour force of computer-literate individuals (Masuda, 1983).

To meet the need, many countries have redefined the objectives in their education system and incorporated ICT skills in schools. Information literacy has become a necessity. Ministry of National Education, in the strategic plan for 2010-2014, defined its vision as “fusing the educational system with advanced technologies, promoting innovation, improving constantly by measuring and evaluating and providing student-centered and project-based education using information technologies” (MNE,2009:52). The MNE also defines its goals as providing all schools with internet access to expand the use of new technologies and integrating ICTs in the education system, improving student-computer ratio and fulfilling the educational requirements for the information age. The Higher Education Council (2011) announced that higher education needs restructuring so that individuals adapt to the changing conditions of the world’s knowledge, skills and competences and have critical thinking skills. Likewise, the European Commission (2004:1) stated that to become competitive and dynamic knowledge-based economy in the world, education and training systems need to adapt to the demands of the knowledge society. The Council announced new basic skills to be achieved through lifelong learning: These cover *ICT, technological culture, foreign languages, entrepreneurship and social skills* (Presidency conclusions. Lisbon European Council 23-24 March 2000, point 26).

To ensure that students are information literate and lifelong learners, the teachers should have the necessary skills in the first place. Furthermore, effective use of educational technologies enhances education. Therefore, many governments are investing largely to incorporate computer and educational technologies in education programmes so that students will be provided with multimedia learning environments where they can utilize technology, access information easily through multiple channels and use information for problem solving, synthesizing and planning (ISTE, 2000).

Interactive and cooperative learning environments require restructuring learning environments, that is to say, utilization of information technologies in education. New educational policies favour learner-centered learning with special emphasis on skills of using information and communication technologies. The teacher is also responsible for creating rich learning materials, which definitely require information literacy skills and computer literacy. In fact, computer literacy has become a basic survival skill today.

Information literacy and computer literacy

Information literacy can be defined as the ability to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (ALA/ACRL, 1989). Information literacy forms the basis for lifelong learning. The teachers are supposed to be information literate so that they can embellish their learners with the skills of accessing information in various forms from multiple resources by creating adequate learning environments. Recognizing the need, effort is made to help teachers acquire those skills (Breivik, Hannock and Senn, 1998; Akkoyunlu and Kurbanoglu, 2003; MNE, 2008)

This study defines computer literacy as the ability to handle and use computers to perform desired tasks effectively, namely, for learning and teaching purposes, to obtain information and so on. Computers offer fruitful opportunities to teaching. Realizing this potential requires availability of adequate equipment and teachers who are motivated and who has sufficient instructional computing knowledge. Teacher attitudes towards computer technology are a significant factor in the use of computers in education. Computer literate teachers are more likely to integrate computers more successfully in their classroom. This is also a prerequisite for becoming information literate as well. (ALA/ACRL, 1989; AASL/AECT, 1998)

Changing roles of teachers and learners

The information age brings along changes in every walk of life. ICTs do not only demand changes in the school environment, but also requires new roles for the teacher and the learner as well. The teachers are also responsible for helping their learners become active learners; in other words, helping them learn to learn. The teacher should also be information and computer literate.

Learning is not learning from the teacher anymore. The new multifaceted learning concept of learning should encompass self-learning from available sources, responsibility for one’s own learning. Incorporating computer technologies effectively with learning environments will provide the learners with multiple means of accessing information. This has changed the role of the teacher from an information-provider to a facilitator. Learning no longer refers to learning from the teacher. The students may obtain information from various resources using various channels (Leh and Ogata, 2001). The teacher now, as a facilitator, should guide the learners through the learning process and help them learn to learn. As Chin and Hortin (1993:83) state, technology forces us to re-evaluate “the authoritative teacher role”. In Wang’s study (2000) investigating pre-service teachers’ perceptions of the teachers’ role in classroom with computers versus without computers, it is found out that the pre-service teachers acknowledge the need to become less teacher-centered in computer-mediated classroom settings.

Preparing prospective teachers to teach with technology is a challenge on the teacher training system. “Learning environments based on new technology impose new challenges on the teachers and on the teacher training system” (Haugen et al., 2000:5). Therefore, teacher education programmes require technology preparation as part of their certification programmes. The Higher Education Council and Ministry of National Education strongly

urge faculties of education to prepare prospective teachers in the use of technology in the classroom. Ministry of National Education issued “Teacher Competences” in 2008 and defined information literacy as a vital competency for teachers to self-develop professionally and help their students reach information and learn to learn. “Being technology-literate and following the developments in ICTs” are stated among general teacher competences (MNE, 2008: A5.12-A5.13). The Ministry also defined foreign language teacher competences as “using technological sources in English language teaching; using technology in research, planning, application and evaluation processes; using scientific research, method and techniques in professional development; making use of ICTs to share information; using ICTs to create different learning environments students with different needs and skills; and being a model in effective use of technological sources and teaching how to use them” (MNE, 2011: 60-73).

There are several studies on computer literacy skills of prospective teachers. Aşkar and Umay (2001) in their study with pre-service elementary mathematics teachers found that they had positive attitudes toward using computers, and learning and teaching with computers. Özdemir (2007), in her study on primary school English language teachers' competencies in using technology in education, found that a considerable number of teachers regard themselves as not competent in computer based teaching applications. Özdemir also reports no significant difference in confidence and competence among instructors according to teaching experience (2007:93). In their study with foreign language teacher candidates, Korkut and Akkoyunlu (2008) found that the participants self-efficacy scores for both information literacy and computer literacy were high. There was no difference in information literacy according to sex, yet there was a significant difference favouring male teacher candidates in computer literacy.

Despite the need and apparent benefits of integrating technology in the classrooms, there are many studies citing teacher reluctance to use computers. Teachers may tend to perceive technology as another burden to their already overloaded work schedule (Hartzell, 1996). Therefore, the administration is advised to provide extensive training in how to integrate technology into the curriculum (Weiss, 1994). MacNeil and Prater (2001) identified lack of time and lack of computers as the highest ranking barriers against using computers in the classroom. Lack of inadequate training and computer anxiety are among the basic reasons why teachers refrain from using computers in their courses. Studies also state that students, in general, are far more knowledgeable than their teachers (Aşkar and Umay, 2001). This might be another factor that hinders teachers because unless teachers are comfortable with new technology, they are unwilling to incorporate it into their teaching.

Educational institutions and administrators allocate considerable amount of budget for effective use of technology for language learning purposes. Efforts by the administrators are type of innovation decisions that can only be successful or effective only when instructors are devoted. Therefore, the concept of self-efficacy is important. People with higher self-efficacy do their best and do not easily give up when confronted with obstacles (Bandura, 1995, Aşkar and Umay, 2001).

Self-efficacy

Bandura defines self-efficacy as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (1995, p. 2). Developing self-efficacy is important in that it is the driving force that makes people pursue a goal and overcome obstacles. Research supports that self-efficacy will influence the choice of engaging in a task or not, the effort spent in performing it and the persistence shown in accomplishing it (Aşkar and Umay 2001; Bandura, 1977; Bandura and Schunk, 1981). Acceptance, dedication and utilization rely heavily on computer-self efficacy, which is defined as “a judgement of one’s capability to use a computer” (Yi, MY & Venkatesh, V. 1996).

Technology in foreign language instruction

The 21st century requires individuals to possess some skills and knowledge: information literacy, computer literacy and at least one foreign language (ISTE 2000, TUSIAD 1998). The European Council identified eight key competences to be developed through lifelong learning for personal development and social and professional integration in a knowledge based society. Three of the key competences are: Communication in foreign languages; Digital competence; and Learning to learn (EU, 2006:394/14).

Foreign language education has come a great way since the days of GTM and cubicles of ALM language labs. Now a more communicative, student-centered and constructivist approach favours utilisation of ICT in teaching and the ability to “learn to learn”. ICTs offer exciting innovations in education in general, and in language learning and teaching in particular. CALL programmes (computer programmes specially designed to teach languages) allow individualized learning with immediate feedback and reinforcement. Non-CALL programmes are not designed for language teaching purposes, yet, can be adapted by the teachers to be used for this purpose. The Internet offers various applications; for instance accessing information, exchanging messages, virtual interactions and so on.

What is worth mentioning here is that computers are multimedia tools. Computers can transform ordinary classrooms into multimedia classes, integrating graphic, print and audio, video, computer-based instructional material, lessons, games and learning environments. The new generation course-books are accompanied by technology-kits which involve virtual classrooms, software version of the books, additional material for students to self-study and a chance for teacher to track student progress. Computer mediated communication technologies such as instant messaging, the e-mail, blogs, forums and so on facilitate communication among students, teachers and people of similar interest.

Effective language learning takes place through interaction. Technology can provide virtual interaction. What is more, language learning cannot be confined into the classroom. In addition to the study in the class, various sources must be used to support and consolidate the learning process. Therefore, as mentioned before, the teacher is responsible for providing students with learning materials using technology.

Purpose of the study

Seeing the need for integrating ICTs in foreign language instruction as an active component, Gazi University School of Foreign Languages has made significant investments in hardware, software and infrastructure. All the classes have been equipped with internet access, overhead projectors and related technology. All language instructors have been given

laptops for personal use. The instructors who perceive themselves as incompetent in integrating technology in their classrooms also received a fifteen-hour in-service training from a content area specialist. The training involved using interactive-boards, ICT skills in education and multimedia support materials for language teaching. The school also has a multimedia class that can be used in turns. The new generation of course-books with multimedia kits, virtual classes and so on are adopted for instruction. The materials office has created multimedia language learning materials for use as well.

However, as mentioned before, administrative innovation and investments can only be effective if teachers are dedicated. This relies highly on the instructors' perceived self-efficacy skills. Therefore, the purpose of this study is to determine the information self-efficacy and computer self-efficacy of English language instructors in Gazi University School of Foreign Languages. The study also aims to determine self-efficacy of a sample group of students in the school so that we can deduce whether the instructors are competent enough or archaic compared to today's students. In other words, the study also aims to find out if there is a technology and information gap between the instructors and their students.

To this end, the following questions guided this research:

1. What is the information literacy self-efficacy and computer literacy self-efficacy of English language instructors in school of foreign languages?
2. Does information literacy self-efficacy differ according to experience and sex for instructors?
3. Does computer literacy self-efficacy differ according to experience and sex for instructors?
4. Is there a relation between information literacy and computer literacy self-efficacies of the instructors?

And a further sub research question aims to see if there is a gap between self-efficacies of the instructors and their students:

5. What is the difference between self-efficacies of the instructors and their students in terms of information literacy and computer literacy?

After the investments on training and hardware, software and infrastructure by the School of Foreign Languages, the perceived usefulness of technology in the classroom by the teachers appears to be the major variable in the successful execution of the ICTs in the classroom. This study will be valuable for it aims to provide an insight into practicing teachers' perceptions, dedication and attitudes after innovations by the administration.

Methodology

To evaluate the impact of the investments and thereby help ensure that the intended results are achieved, information and computer literacy of instructors and students are measured. The instructors are also interviewed to report on their use of technology in the classes.

This is a descriptive study. In the study, frequencies, Mann-Whitney U test, ANOVA test and correlation statistics are used.

Participants

The information literacy self-efficacy scale and computer literacy self-efficacy scales were administered to 47 English language instructors and 75 students who were studying one-year intense language preparation program in the School of Foreign Languages at Gazi University. The demographic information about the instructors and students are below:

Table 1

Demographic Information for Instructors

		Frequency	Percentage
Sex	Female	37	78,7
	Male	10	21,3
Age	20 - 30 years	25	53,2
	31 - 40 years	21	44,7
	51 years or more	1	2,1
Experience	1-5 years	19	40,5
	6-10 years	19	40,5
	11 years or more	9	19

Table 2

Demographic Information for Students

		Frequency	Percentage
Sex	Female	41	54,7
	Male	34	45,3
Age	18 years	10	13,3
	19 years	36	48
	20 years	25	33,3
	21 years or more	4	5,3
Faculty	Education	14	18,7
	Engineering and Architecture	28	37,3
	Economics and Administration	19	25,3
	Technical Education	7	9,3
	Science and Letters	7	9,3

Data collecting instruments

In this study, data was collected through “Information Literacy Self-efficacy scale” and “Computer Literacy Self-efficacy scale”.

‘Information Literacy Self-efficacy scale’ is a 28-item survey instrument developed by Kurbanoglu, Akkoyunlu and Umay (2006). The responses are scored on a 7-type Likert scale. The lowest possible score is 28, and the highest score is 196.

‘Computer Literacy Self-efficacy scale’ was developed by Kurbanoglu and Akkoyunlu (2003) and consists of 32 items and a 7-type Likert scale. The lowest possible score is 32, and the highest score is 224. The Cronbach alpha reliability co-efficients for the scales are .97 for instructors and .92 for students in this study.

Assumptions and limitations

The instructors were told that the questionnaires would be used for academic study only and that no information about identification was required. It is assumed that the instructors answered the questions about their competences sincerely.

This study aims to identify perceived self-efficacy of instructors about information literacy and computer literacy because that will greatly determine their instructional decision-making. How using ICTs in the classroom affect teachers’ motivation and what kind of applications they use in the classroom are not in the scope of this study.

Findings

The instructors’ self-efficacy scores are evaluated below.

The information literacy self-efficacy of instructors according to sex and experience are given below:

Table 3.

Information Literacy Self-efficacy and Computer Literacy Self-efficacy Mean Scores of Instructors.

	N	Mean Score	No of items in the questionnaire	Minimum / Maximum score possible
Information literacy self-efficacy	47	164.43	28	28 / 196
Computer literacy self-efficacy (total)	47	182.23	32	32 / 224

Self-efficacy mean scores of instructors for information literacy is 164.43 and 182,23 for computer literacy. Both of the scores are quite high.

Table 4

The Information Literacy Self-Efficacy of Instructors according to Sex.

	sex	N	Mean	Std. Error	Mann-Whitney U	Asymp. Sig. (2-tailed)
Information literacy self-efficacy score	Female	37	163,41	5,131	138,500	0,225
	Male	10	168,20	12,475		

There is no statistically significant difference among instructors at the 0.05 level according to sex.

Table 5

The information literacy self-efficacy of instructors according to experience.

	experience	N	Chi-Square	df	Asymp. Sig.
Information literacy self-efficacy score	1-5 years	19	0,426	2	0,808
	6-10 years	19			
	11 years or more	9			

The instructors are classified into three according to their teaching experience. There is no statistically significant difference among the groups according to teaching experience.

Table 6

Computer Literacy Self-efficacy of Instructors according to Sex

	Sex	N	Mean	Std. Error	t-test for Equality of Means		
					t	df	Sig. (2-tailed)
Computer literacy self-efficacy	Female	37	181,43	5,279	-0,324	45	0,748
Total Score	Male	10	185,20	11,013			
Computer literacy self-efficacy	Female	37	108,24	2,332	-0,243	45	0,809
Basic Skills Score	Male	10	109,50	4,940			
Computer literacy self-efficacy	Female	37	73,19	3,225	-0,351	45	0,728
Advanced Skills Score	Male	10	75,70	6,928			

There is no significant difference in computer literacy scores of instructors according to sex in their basic computer skills scores, advanced computer skills scores and total scores.

Table 7
Computer Literacy Self-Efficacy of Instructors according to Experience.

	experience	N	Mean	Std. Error
Computer literacy self- efficacy Total Score	1-5 years	19	193,89	7,712
	6-10 years	19	175,68	6,399
	11 years or more	9	171,44	11,398
Computer literacy self- efficacy Basic Skills Score	1-5 years	19	112,32	3,398
	6-10 years	19	106,05	2,945
	11 years or more	9	105,67	5,367
Computer literacy self- efficacy Advanced Skills Score	1-5 years	19	81,58	4,683
	6-10 years	19	69,63	4,007
	11 years or more	9	65,78	6,641

Table 8
ANOVA Test Results for Computer Literacy Self-Efficacy of Instructors according to Experience.

		Sum of squares	df	Mean square	F	Sig.
Computer literacy self-efficacy Total Score	Between groups	4.446,309	2	2.223,154	2,238	0,119
	Within groups	43.700,117	44	993,184		
	Total	48.146,426	46			
Computer literacy self-efficacy Basic Skills Score	Between groups	462,692	2	231,346	1,132	0,331
	Within groups	8.989,053	44	204,297		
	Total	9.451,745	46			
Computer literacy self-efficacy Advanced Skills Score	Between groups	2.058,796	2	1.029,398	2,801	0,072
	Within groups	16.168,608	44	367,468		
	Total	18.227,404	46			

Table 7 shows computer literacy self-efficacy mean scores of instructors according to experience. Table 8 compares the mean scores between and within groups in terms of basic, advanced and total computer literacy self-efficacy scores. The results show that there is a significant difference in the advanced skills at the 0.08 level.

The table below shows the results of multiple comparisons to find out which group has more favorable results.

Table 9

Multiple Comparison Test for Computer Literacy Self-Efficacy of Advanced Skills Scores for Instructors Within Different Experience Groups.

(I) experience_group	(J) experience_group	Mean Difference (I-J)	Sig.
Between 1 - 5 Years	Between 6 - 10 Years	11.947(*)	0,061
	11 Years or More	15.801(*)	0,048
Between 6 - 10 Years	Between 1 - 5 Years	-11.947(*)	0,061
	11 Years or More	3,854	0,622
11 Years or More	Between 1 - 5 Years	-15.801(*)	0,048
	Between 6 - 10 Years	-3,854	0,622

*. The mean difference is significant at the .10 level.

To find out which group has statistically significant difference, the scores has been evaluated by multiple comparison test. The results favour the group with the least experience (1-5 years of experience) at .10 level.

In order to see if there is a relation between information literacy self-efficacy scores and computer literacy self-efficacy scores of instructors, the data is evaluated through cross-tabulation. As the scales have different number of questions, in order to be able make a comparison, the scores in both scales are grouped according as *low*, *middle* and *high*. Eventually, the groups are: low (up to 84), middle (85-112) and high (113-196) for information literacy self-efficacy scores and low (up to 112), middle (102-136) and high (137-224) for computer literacy self-efficacy scores. After the instructors have been grouped into three according to their scores, chi-square test is implemented to see the relation between the groups. The table is below:

Table 10

Cross-Tabulation for Information Literacy Self-Efficacy Scores and Computer Literacy Self-Efficacy Scores of Instructors.

		Computer literacy self-efficacy total score				
		Low	Middle	High	Total	
Information literacy self-efficacy total score	Low	Count	1	2	0	3
		% within information literacy self-efficacy total score	0,33	0,67	0,00	1,00
		% within computer literacy self-efficacy total score	1,00	0,50	0,00	0,06
		% of Total	0,02	0,04	0,00	0,06
	Middle	Count	0	0	2	2
		% within information literacy self-efficacy total score	0,00	0,00	1,00	1,00
		% within computer literacy self-efficacy total score	0,00	0,00	0,05	0,04
		% of Total	0,00	0,00	0,04	0,04
	High	Count	0	2	40	42
		% within information literacy self-efficacy total score	0,00	0,05	0,95	1,00
		% within computer literacy self-efficacy total score	0,00	0,50	0,95	0,89
		% of Total	0,00	0,04	0,85	0,89
Total	Count	1	4	42	47	
	% within information literacy self-efficacy total score	0,02	0,09	0,89	1,00	
	% within computer literacy self-efficacy total score	1,00	1,00	1,00	1,00	
	% of Total	0,02	0,09	0,89	1,00	

There is a positive correlation between the self-efficacy scores in both information literacy and computer literacy.

Finally, in terms of these four variables, the researcher tried to determine if there is a difference between the scores of the instructors and their students. Therefore, t –test is implemented to the scores. Below are the results:

Table 11
T-Test for Four Variables (Information Literacy, Computer Literacy Total, Basic Skills and Advanced Skills) Comparing Instructors and Students.

		N	Mean	Std. Error	t	df	Sig. 2 tailed
information literacy self-efficacy total score	Instructor	47	164,43	4,773	2,359	120	0,020
	Student	75	150,76	3,477			
computer literacy self-efficacy total score	Instructor	47	182,23	4,719	0,760	119	0,449
	Student	74	177,59	3,835			
computer literacy self-efficacy (basic skills)	Instructor	47	108,51	2,091	2,050	119	0,043
	Student	74	102,46	1,941			
computer literacy self-efficacy (advanced skills)	Instructor	47	73,72	2,904	-0,435	120	0,664
	Student	75	75,37	2,387			

The results show that there is a significant difference in information literacy self-efficacy scores and computer literacy self-efficacy basic skills scores at the 0.05 level. The difference favours the instructors.

Discussion

The data obtained will be discussed with reference to the research questions:

Research Question 1. What is the information literacy self-efficacy and computer literacy self-efficacy of English language instructors in school of foreign languages?

Table 3 displays mean scores of instructors in both scales. As to information literacy self-efficacy, the possible lowest score is 28 and the highest score is 196. The mean score of instructors is 164.43, which is quite a high average score. The instructors have received 182.23 in computer literacy self-efficacy scale, for which the lowest score is 32 and the highest is 224. It can be concluded that the training they have received has been effective. The instructors perceive themselves as quite competent in terms of information and computer literacy.

Research Question 2. Does information literacy self-efficacy differ according to experience and sex for instructors?

Tables 4 and 5 show that there is no statistically significant difference among instructors according to sex and year of experience (1-5 years, 6-10 years and 11 years or more). This might be attributed to the fact that all the instructors are working at the tertiary

level and in a dynamic learning and training environment and that they are able to meet the requirements for this.

Research Question 3. Does computer literacy self-efficacy differ according to experience and sex for instructors?

There are studies that show significant gender differences in attitudes toward computers which have found that men rate themselves higher than women for perceived computer self-efficacy (Collins and Williams, 1987; Miura, 1987). On the other hand, Busch (1995) found no difference in computer self-efficacy according to gender in general but in complex computer tasks female students are found to have less self-efficacy. In this study, Table 6 shows that there is no statistically significant difference among instructors according to sex. This might be because of the training that the instructors received. This finding is promising because the number of female instructors is nearly four times as the males. If they were uncomfortable with the use of computers in the classroom, the success of the investments and efforts made would be at jeopardy.

Table 8 compares the scores for computer literacy self-efficacy (basic, advanced and total) in terms of three experience groups. In Özdemir's study (2007) there was no significant difference among instructors according to teaching experience. In this study, the results show that not at the 0.05 level, but on a larger scale (at the .08 level), there is a significant difference in the advanced skills between the groups. Table 9 shows that this difference favours the group with 1-5 years of experience. This finding seems contradictory at first sight because it is generally assumed that self-efficacy increases with experience. However, here the focus of attention is "computer literacy", not "language teaching experience". The instructors with fewer years of experience and thus younger appear to be more competent with emerging technologies.

Research Question 4. Is there a relation between information literacy and computer literacy self-efficacies of the instructors?

Cross-tabulation results in Table 10 show that there is a positive correlation between information and computer literacy self-efficacy scores. To be more precise, 85% of instructors have received high scores in both scales and there is not any instructor who received high scores in one and low scores in the other scale. This finding is compatible with previous studies that also indicate that computer literacy and information literacy support and help develop each other (Korkut and Akkoyunlu, 2008). As mentioned before, computer literacy is a prerequisite for information literacy.

Research Question 5. What is the difference between self-efficacies of the instructors and their students in terms of information literacy and computer literacy?

This study also aims to see if there is a gap between self-efficacies of the instructors and their students. When teachers are archaic and less confident in terms of technology and information intensive learning environments, they have little to offer for their students. The teachers also display reluctance to incorporate technology in their courses when they feel less

competent than their students. Therefore, the success of innovations made heavily rests on the instructors' dedication and self-efficacy.

As Table 11 shows, there is a significant difference in information literacy self-efficacy scores and computer literacy self-efficacy basic skills scores at the 0.05 level. The difference favours the instructors. We can conclude that the instructors in the study are able to keep up with the requirements of information and computer technologies in education. They do not fall behind their students; and they are even better in some aspects despite the age as an obvious advantage for learners. This is probably due to the training the instructors have received and their efforts and dedication.

Conclusion

Information and computer technologies require changes in education in terms of goals, settings, means and procedures. Gazi University School of Foreign Languages has recognized the need and attempted to restructure the language learning and teaching environments. The classes have been technologically-renovated; the instructors have received training in ICT skills and have been given personal laptops each. Using multimedia resources has been encouraged. It is hoped that the instructors would assume a new teacher role that is more compatible with the demands of the 21st century.

All the efforts described above are made or encouraged by the administration and can be fruitful only if the instructors are committed. Therefore, this study looks into the perceptions of instructors in terms of information and computer self-efficacy. The instructors have scored quite high in both scales and it appears that no matter what their sex and teaching experience is, they have developed a very positive attitude. They perceive themselves as competent in reaching information using multiple channels. Thus, they might experience less fear or reluctance and will probably incorporate ICT in their teaching more effectively.

It can also be concluded that the ICT training the instructors received has been effective in bridging the gaps in knowledge and skills because there is no statistically significant difference between the self-efficacy scores in information literacy and computer literacy of instructors in terms of sex and experience. Only in advanced computer skills, there is a subtle difference (at the 0.08 level) in favour of instructors with the least experience group. Bandura states that self-efficacy increases with experience. Yet, the experience in the study is *language teaching* experience, not *technology use* experience. Although younger people are supposed to keep up with technological advancements better, in this study, all the instructors have received high self-efficacy scores; which is probably because of the training that weaker ones have received. Computer literacy is a prerequisite for information literacy and there is a positive correlation between these skills. The instructors scores indicate that both performances reinforce each other.

As mentioned before, the younger generation lives technology-intensive lives. They tend to interact and learn from multiple channels. A comparison of the instructors' and their students' scores in both scales show that the instructors are able to keep up with the advances; and in fact, better than their students in terms of information literacy. As the instructors can feel safe and competent with the use of computer and information technologies, they are more likely to integrate these into their teaching practice. We can conclude that the efforts and

investments will be cost-effective and fruitful in the future. Last but not least, the researcher thinks that the training and support the instructors have received should not be a one-time-only thing. For effective and enduring results, more training and support should be provided.

As to the long term effects of these applications in language learning, longitudinal studies can be conducted to see the effects in student success in language learning. More research should be conducted on the effects on teacher motivation. A further study might focus on what has actually changed in the language classroom. It would be illuminating to conduct studies with more qualitative data concerning how teachers actually use ICTs in the language classroom and what kind of applications are implemented.

Biographical information

Gonca Ekşi is an assistant professor and chair of the Department of Foreign Language Education at Gazi University, Turkey. Dr. Ekşi holds a bachelor's degree in ELT from Ondokuz Mayıs University; a master's of ELT degree from Hacettepe University, and a doctoral degree in ELT from Gazi University. Some of Dr. Ekşi's professional interests include language teacher education, language and culture, young learners, and using technology in language teaching.

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