

A CRITICAL REVIEW OF TECHNOLOGY USE IN ENGLISH AS FOREIGN LANGUAGE LEARNING AND TEACHING: THE TOJET SAMPLE

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Abstract

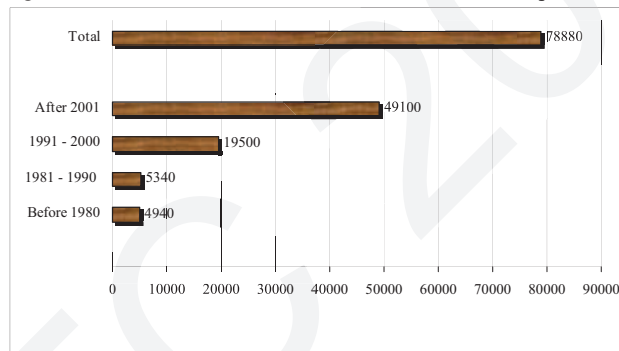
The relationship between technology and English as a foreign language (EFL) learning and teaching is one of the significant research areas, and the Turkish Online Journal of Educational Technology (TOJET) publishes research papers on educational technologies addressing various topics related to education. This article aims to review 17 studies appearing in TOJET on the interrelation between technology and English as a foreign language (EFL) learning and teaching. It focuses on the research that investigates the relationship between technology and EFL learning and teaching in terms of the topics, participants, research design, and conclusions of the articles. Finally, implications for pedagogy and research are discussed.

Keywords: English as a foreign language learning, technology, TOJET

INTRODUCTION

The use of technology in English as a foreign language (EFL) learning and teaching included films, radios, televisions, language laboratories, videos, and computers after the 1980s (Cunningham, 1998). As advancing technology has become accessible for EFL learners and teachers and has been integrated into EFL learning and teaching, researchers' interest in the relationship between technology and foreign language has grown stronger since the 1990s and 2000s. Thus, a simple search on Google Scholar using the keywords *technology*, *"foreign language"* and *English* indicated that 78,880 results were listed as shown in the following figure. On the other hand, when the studies published in Turkey are considered, the search using the keywords *technology*, *"foreign language"* and *abstract* demonstrated that 1,730 items were listed on the pages from Turkey, while 463 papers written in Turkish were found on a Google Scholar search using the keywords *teknoloji*, *"yabancı dil"* and *özet*. In conclusion, it could be argued that there exists quantitatively a serious lack of research on the field of technology with regard to foreign language learning and teaching.

Figure 1. Search results on FL-related studies indexed in Google Scholar.



The Turkish Online Journal of Educational Technology (TOJET) is a quarterly and peer-reviewed international electronic journal that publishes papers on all of the fields of educational technology. Indexed by Social Science Citation Index since 2008, the TOJET has readers from 85 countries and occupies a significant place as a journal dealing with educational issues related to technology, as emphasized in its website (www.tojet.net). From its first to final issue, 358 articles have appeared in the TOJET, of which only 17 being on technology-related foreign language studies, as seen in the table given below. Namely, the percentage of the papers on the subject is only 4.7 although there is a strong interest in the technology-related foreign language studies in the world (Liu, Moore, Graham, & Lee, 2002). Briefly, it could be underlined that such a low rate can be seen as a reflection of the limited number of studies on the subject in Turkey.

Table 1. The Number of papers on technology and EFL studies appearing in the TOJET.

Years	Number of Issues	All of the Fields	Technology and EFL Studies
2002	1	11	1
2003	4	57	0
2004	4	80	3
2005	4	76	3
2006	4	46	5
2007	4	35	2
2008	4	32	2
2009	2	21	1
Total	27	358	17

Given the strong and increasing interest in technology for foreign language learning and teaching, it seemed important to review both quantitatively and qualitatively the articles published in the TOJET, a journal with a leading role in the field. In other words, two reasons guided the present study: Firstly, while there exist thousands of studies in a global scale, the number of studies in Turkey seemed fairly limited. Secondly, the limited studies conducted in Turkey should also be evaluated qualitatively in order to present their research and pedagogical implications. As a result, the study aimed to find answers to the following questions:

1. What do the articles focus on with regard to the relationship between technology and foreign language learning and teaching?
2. Who are used as sample groups in the researches?
3. What kind of research designs was preferred in the articles?

4. What are the conclusions of the researches?

METHOD

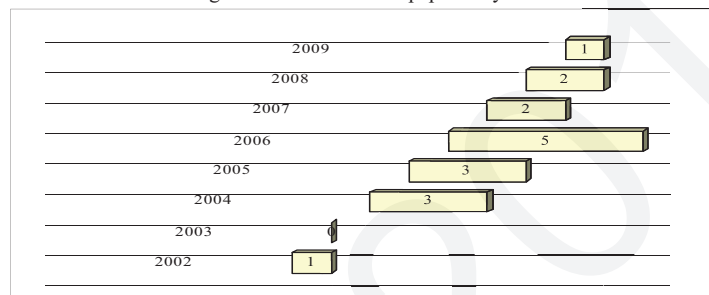
As the purpose of this paper is to review and discuss the articles on technology and English as a foreign language learning and teaching published in the TOJET, the primary data source was the website of the journal. After examining the titles and abstracts, a list of articles was prepared. Furthermore, using the key words *TOJET*, *technology* and *“foreign language”*, the search results were examined and compared to the list prepared previously. Subsequently, after downloading and storing the articles, a detailed table was prepared that included the names of the authors, years of the publications, languages of the articles, and the information on the topics, participants of the researches, research designs, and conclusions. Finally, 17 articles were reviewed in terms of their focuses, sample groups, research designs and conclusions.

RESULTS

The articles listed were examined in accordance with four criteria (Appendix). Firstly, after specifying the names of the authors, the years, and the languages preferred, the topics of the researches were listed. Secondly, the sample groups of the studies were introduced. Then, research designs used in the studies were given. Finally, the conclusions obtained from the articles were presented.

As stated above, the articles were categorized in accordance with the names of the authors, publication years, and the preferred language. 17 articles (Adıyaman, 2002; Akbulut, 2007, Akbulut, 2008; Altun, 2005; Aydın, 2006; Aydın, 2007; Çakır, 2006; Gömleksiz, 2004; Hatipoğlu Kavanoz, 2006; Kartal 2005a; Kartal, 2005b; Kocoğlu, 2008; Köksal, 2004; Özad, & Kutoğlu, 2004; Şen, & Neufeld, 2006; Ulusoy, 2006; Yüksel, & Tanrıverdi, 2009) on technology use in EFL learning and teaching appeared in the TOJET between 2002 and 2009, as shown by the following figure that represents the distribution of the articles in years and numbers. The language used in the articles was mainly English, except for the two written in Turkish (Adıyaman, 2002; Kartal, 2005). To conclude, authors mostly preferred writing their papers in English.

Figure 2. The number of papers in years.



The first criterion used was the topics of the papers, as stated above. Among 17 studies, three focused on the attitudes of EFL learners towards technology, computers, and the Internet (Akbulut, 2008; Aydın, 2007; Gömleksiz, 2004) in EFL learning and teaching, whereas two papers dealt with the EFL students' perceptions on the role of e-portfolios in professional development (Koçoğlu, 2008), and beliefs, assumptions and knowledge about learning-centeredness (Hatipoğlu and Kavanoz, 2006). The studies concerning the Internet aimed to investigate the hypermedia effect on reading skills and vocabulary acquisition (Akbulut, 2007), WEBQUESTs in English teaching methodology (Şen & Neufeld, 2006), and the relationship between the Internet and autonomy in EFL learning (Kartal, 2005). Additionally, the effect of computers was also examined in two studies, one of which focused on the effect of computers on the reliability of writing tests (Aydın, 2006), while the other one reviewed the effect of computers on writing process (Ulusoy, 2006). In the TOJET, two other studies were published on the integration of multimedia and Internet technologies into EFL teaching (Altun, 2005), and on using presentations in EFL learning. Three of the studies aimed to examine the effects of audio-visual materials such as videos, DVDs, and captioned clips (Çakır, 2006; Köksal, 2004; Yüksel & Tanrıverdi, 2009) in EFL learning. Finally, one study focused on EFL learning through distance education (Adıyaman, 2002), while another paper examined the relationship between communicational technologies and language teaching industry (Kartal, 2005). In conclusion, the papers mainly focused on EFL learners' attitudes, beliefs, and conceptions about technology and its components such as computers and the Internet, as well as on the effects of technology on reading and writing skills and vocabulary.

The second question raised by the present paper aimed to review the sample groups used in the researches. According to the numbers given in Table 2, the participants included three different target groups: Teachers of English as a foreign language (EFL), the students of the departments of English language teaching (ELT), and the learners of English for specific purposes (ESP). The values provided in the figure also indicate that sample groups of the studies mostly consisted of the students of ELT departments, while three studies included the teachers of ELF in their sample groups. Finally, two of the studies used ESP students as participants during their research process. As some of the researches were conducted quantitatively and there existed limited numbers of the papers that used ELT teachers and ESP students as sample groups, the means of the participants were not given. As a result, it can be stated that researchers mostly preferred ELT students as their sample groups while they rarely chose teachers of English and ESP learners.

Table 2. The number of participants.

Studies	ELT Teachers	ELT Students	ESP Learners
Akbulut (2008)		155	
Yüksel (2009)		120	
Aydın (2007)		115	
Akbulut (2007)		69	
Altun (2005)		53	
Aydın (2006)		40	
Koçoğlu (2008)		5	
Gömleksiz (2004)	150		
Hatipoğlu Kavanoz (2006)	13		
Şen & Neufeld (2006)	5		77
Özad & Kutoğlu (2004)			60

The third criterion is the research designs of the studies, six of which were the reviews of literature (Adıyaman, 2002; Çakır, 2006; Kartal, 2005a & 2005b; Köksal, 2004; Ulusoy, 2006). As indicated by the research designs given in Table 3, the researches were mostly conducted

quantitatively. Specifically, four of the quantitative studies were designed in accordance with descriptive methods (Akbulut, 2008; Aydın, 2007; Gömleksiz, 2004), whereas four researches were designed experimentally (Akbulut, 2007; Aydın, 2006; Şen, & Neufeld, 2006; Yüksel, & Tanrıverdi, 2009). Exceptionally, Altun (2005) used both descriptive and qualitative designs in his research. Finally, in three of the studies (Hatipoğlu Kavanoz, 2006; Kocoğlu, 2008; Özad, & Kutoğlu, 2004), qualitative research methods were used. To sum up, researches mainly preferred to review the related literature and quantitative research designs; however they rarely used qualitative research design.

Table 3. Research designs of the studies.

Reviews	Qualitative	Quantitative	
		Descriptive	Experimental
6	3	4	4

The last question of the present study focused on the conclusions obtained from the studies, as stated above. The first and main conclusion drawn from the reviewed studies, in a broader sense, is that technology and foreign language learning are interrelated. Secondly, with regard to the individual differences in EFL learning and teaching, and specifically speaking, the attitudes of EFL learners and teachers, the conclusions indicate that EFL learners and teachers have positive attitudes towards technology use (Gömleksiz, 2004), computer assisted language learning (Akbulut, 2008), asynchronous communication tools (Altun, 2005), the internet (Aydın, 2007), and WEBQUESTS (Şen, & Neufeld, 2006). On the other hand, it should also be noted that the results of the above-mentioned studies demonstrate that the attitudes towards technology use in EFL learning and teaching are affected by some significant factors such as school climate, technology instruction (Gömleksiz, 2004), experience about using computers, computer ownership, the duration of using computers (Akbulut, 2008), and teachers and students (Şen, & Neufeld, 2006). Thirdly, the results reveal that technology has some significant effects on EFL learning process. For instance, technology enriches presentations (Özad, & Kutoğlu, 2004); the Internet offers opportunities for autonomous language learning (Kartal 2005a); computer use in writing process has positive effects on reliability (Aydın, 2006) and develops writing skills (Ulusoy, 2006); hypermedia environment contributes to reading comprehension (Akbulut, 2007); and e-portfolios help pre-service teachers of English to keep current with digital innovations (Kocoğlu, 2008). Fourthly, the results show that using videos in EFL learning and teaching allow students to practice what they learned (Çakır, 2006), develops listening comprehension, and enhance intercultural competence (Köksal, 2004), whereas captioned movies improve vocabulary (Yüksel, & Tanrıverdi, 2009). Finally, the studies suggest that public school teachers have limited knowledge about the implementation of learner-centeredness while private school teachers do not (Hatipoğlu Kavanoz, 2006), and distance learning offers opportunities in EFL learning (Adıyaman, 2002). Conclusively, the results reveal that EFL learners and teachers mainly have positive attitudes towards technology, and that technology have positive effects on EFL learning and teaching processes.

CONCLUSIONS AND DISCUSSION

This paper aims to review the articles published in the TOJET on the relationship between technology and EFL learning and teaching since technology in EFL learning and teaching is one of significant fields while the TOJET is a specific journal that publishes papers on educational technology. After listing and downloading the papers using the websites of the TOJET and Google Scholar, the articles were classified and reviewed in terms of their focuses, sample groups, research designs, and conclusions.

Three main results were obtained from the study. Firstly, the 17 articles which appeared from 2002 to 2009 in the TOJET in English rather than Turkish mainly focused on EFL learners and teachers' perceptions, beliefs, assumptions, knowledge, and attitudes towards technological tools and environments such as computers, the Internet, learner-centeredness, e-portfolios, presentations. Additionally, the papers examined the effects of the above-mentioned tools and environments on autonomous learning and some of language skills and knowledge areas such as reading, writing and vocabulary while few studies appeared on distance learning and language industry. Secondly, the sample groups of the studies consisted of EFL teachers, the students of ELT departments, and ESP students. Thirdly, the papers mainly include reviews and quantitative studies while qualitative studies seem limited. Fourthly and finally, the conclusions of the studies indicate that EFL learners and teachers mainly have positive attitudes towards technology, and that technology have positive effects on EFL learning and teaching processes.

In the light of the findings, some implications for pedagogy and research can be presented. First of all, the number of studies needs to be increased quantitatively. That is, it is obvious that the research activities conducted in our country seem too limited quantitatively when compared to those carried out on a global scale. Thus, educational policymakers and researchers should investigate and analyze the reasons and sources of the lack of research in the mentioned field. Specifically speaking, some studies should be conducted to investigate the problems of researchers in the field and to present suggestions; and finally, educational policymakers should aim to solve problems and present practical solutions including financial and motivational dimensions in order to increase the research activities quantitatively. Secondly, researches should include a wide variety of topics, as implicated by Alper & Gülbahar, (2009). For instance, as found in the study, the studies reviewed mainly focused on the attitudes of target groups while there exist more individual differences such as cultural issues, personality types, reactions, motivation, stress, and anxiety that may influence EFL learning through technology. Additionally, as the present findings indicate, reading and writing skills, and vocabulary knowledge of EFL learners were investigated while no study was found on the effects of technology on listening and speaking skills and grammar knowledge. Speaking broadly, given that language is a means of communication and interaction, social, communicational and interactional aspects of technology and their relations to foreign language learners should not be ignored. Furthermore, the topics should include more technological environments such as e-mailing, computer books, correcting and revising systems, chatting, and electronic discussions. Thirdly, as the sample groups of the studies mostly consist of the students in ELT departments, the ESP students and EFL teachers should be used more frequently in samples with larger size. Moreover, the problem with forming sample groups is that ELT students are already experienced in language learning process and in technology as they graduated from EFL classes of Anatolian or super high schools that have better technological infrastructure. That is, it is fairly obvious that the results of the studies that reveal positive influences can be easily predicted. Another problem is that EFL students in the sample groups may change their responses positively or negatively as the researchers are their teachers at the same time. Namely, the role of the researcher as a teacher may be a factor that distorts participants' objectivity. Due to the mentioned problems, to integrate the infrastructure of communication and information technologies into EFL learning, sample groups should be consisted of various target groups such as foreign language learners and teachers at primary, secondary and high schools and language courses, and ESP learners and teachers of various undergraduate, graduate and post graduate programs at universities in addition to the students of ELT departments, considering that 34% of the population already have computers whereas 24.5% have internet connection at homes (Turkish Statistical Institute, 2008). In other words, it will possible to draw more realistic conclusions if the sample groups of the researches include various target groups at different language levels. Thus, it should not be overlooked that there only exist 11 million EFL learners in primary schools and above 3 million in secondary schools (National Education Statistics, 2008) at elementary, intermediate and upper intermediate levels of English. On the other hand, financial problems of researchers, the difficulties in obtaining formal permission from authorities, and logistical issues should be resolved to encourage the researches. Fourthly, given that qualitative research seems significant to examine the EFL learning and teaching phenomenon in a deeper and broader perspective and to base quantitative studies, there is a need for more qualitative studies, as well as a combination of

qualitative and quantitative studies. In other words, in addition to the replications and studies in which research tools are used in their original versions from different sources, qualitative studies will also help researchers develop scales which can draw more realistic results about the foreign language learning phenomenon in our country. Fourthly and finally, as the results of the studies reveal that EFL learners and teachers are mainly positive towards technology-related environments and tools, and that technology and its components have positive effects on EFL learning and teaching processes, it can be recommended that some other factors concerning technology should be also investigated. Affective states and demotivating factors are, for instance, two of the significant issues that need to be examined. Moreover, in addition to reading and writing skills and vocabulary acquisition, it is necessary to examine communicational skills and main language skills such as listening and speaking. On the other hand, it should also be noted that a wide variety of topics are directly related to the conclusion obtained from the studies.

As a final note on the limitations, the present paper reviews 17 studies that address EFL issues related to technology and appeared in the TOJET in terms of their topics, participants, research designs, and conclusions. Further reviews should focus on a larger number of articles in quantity and use other criteria. Finally, it could be recommended that comparative reviews will be beneficial to compare the studies from Turkey to those conducted on a global scale.

REFERENCES

- Adıyaman, Z. (2002). Uzaktan eğitim yoluyla yabancı dil öğretimi. *The Turkish Online Journal of Educational Technology - TOJET*, 1(1), 92–97.
- Akbulut, Y. (2007). Variables predicting foreign language reading comprehension and vocabulary acquisition in a linear hypermedia environment. *The Turkish Online Journal of Educational Technology - TOJET*, 6(1), 53–60.
- Akbulut, Y. (2008). Exploration of the attitudes of freshman foreign language students toward using computers at a Turkish state university. *The Turkish Online Journal of Educational Technology - TOJET*, 7(1), 18 – 31.
- Alper, A. & Gülbahar, Y. (2009). Trends and issues in educational technologies: a review of recent research in TOJET. *The Turkish Online Journal of Educational Technology - TOJET*, 8(2), 124–135.
- Altun, A. (2005). Toward an effective integration of technology: message boards for strengthening communication. *The Turkish Online Journal of Educational Technology - TOJET*, 4 (1), 68–74.
- Aydın, S. (2006). The effect of computers on the test and inter-rater reliability of writing tests of ESL learners. *The Turkish Online Journal of Educational Technology - TOJET*, 5(1), 75–81.
- Aydın, S. (2007). The attitudes of EFL learners towards the Internet. *The Turkish Online Journal of Educational Technology - TOJET*, 6(3), 18–26.
- Çakır, İ. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *The Turkish Online Journal of Educational Technology - TOJET*, 5(4), 67–72.
- Cunningham, D. (1998). 25 years of technology in language teaching: a personal experience. *Journal of the Australian Federation of Modern Language Teachers' Associations*, 33(1), 4–7.
- Gömleksiz, M. N. (2004). Use of education technology in English classes. *The Turkish Online Journal of Educational Technology - TOJET*, 3(2), 71–77.
- Hatipoğlu Kavanoz, S. (2006). An exploratory study of English language teachers' beliefs, assumptions and knowledge about learner-centeredness. *The Turkish Online Journal of Educational Technology - TOJET*, 5(2), 3–9.
- Kartal E. (2005a). Bilişim-iletişim teknolojileri ve dil öğretim endüstrisi. *The Turkish Online Journal of Educational Technology - TOJET*, 4(4), 82–87.
- Kartal, E. (2005b). The Internet and autonomous language learning: a typology of suggested aids. *The Turkish Online Journal of Educational Technology - TOJET*, 4(4), 54–58.
- Kocoglu, Z. (2008). Turkish EFL student teachers' perceptions on the role of electronic portfolios in their professional development. *The Turkish Online Journal of Educational Technology - TOJET*, 7(3), 71–79.
- Köksal, D. (2004). To kill the blackboard? Technology in language teaching and learning. *The Turkish Online Journal of Educational Technology - TOJET*, 3(3), 62–72.
- Liu, M. Moore, Z. Graham, L. & Lee, S. (2002). A look at the research on computer-based technology use in second language learning: a review of literature from 1990 – 2000. *International Society of Technology in Education*, 34(3), 250–274.
- National Education Statistics. (2008). *National education statistics: formal education*. Ministry of National Education, Ankara.
- Özad, B. E. & Kutoğlu, Ü. (2004). EFL students use of technology in the presentations. *The Turkish Online Journal of Educational Technology - TOJET*, 3(2), 16–20.
- Şen, A. & Neufeld, S. (2006). In pursuit of alternatives in ELT methodology: Webquests. *The Turkish Online Journal of Educational Technology - TOJET*, 5(1), 49–67.
- Turkish Statistical Institute. (2008). ICT use statistics. *News Bulletin of Turkish Statistical Institute*, August, 138(1), 1–2.
- Ulusoy, M. (2006). The role of computers in writing process. *The Turkish Online Journal of Educational Technology - TOJET*, 5(4), 58–66.
- Yüksel, D. & Tanrıverdi, B. (2009). Effects of watching captioned movie clip on vocabulary development of EFL learners. *The Turkish Online Journal of Educational Technology - TOJET*, 8(2), 48–54.

Appendix: Studies related to technology use in EFL learning and teaching.

Authors, Years, Language and Topic	Participants	Research Design	Conclusion
Adıyaman, Z. 2002, Turkish Foreign language teaching through distance education		Literature review	Distance learning offers opportunities for foreign language learning.
Özad, B. E. & Kutoğlu, Ü. English, 2004 Technology use in presentations by EFL students	60 students at the Department of communication and media studies	One group comparison Qualitative	ESP students prefer using technology to enrich their presentations.
Gömleksiz, M. N., 2004, English Technology use in EFL classes	150 teachers of English at elementary schools	Two-group comparison Descriptive	EFL teachers have positive attitudes towards technology use in EFL classes while there is a lack of support in school climate and instruction.
Köksal, D. 2004, English Using videos and DVDs in EFL learning and teaching		Literature review	Videos can be used as a tool to improve students' listening comprehension and enhance their intercultural competence.
Kartal, E. 2005, English The internet and autonomous language learning		Literature review	The Internet offers opportunities for learning a foreign language in autonomy.
Kartal E. 2005, Turkish Communication technologies and the industry of language teaching		Literature review	Technology and language learning are interrelated.
Altun, A. 2005, English The integration of multimedia and internet technologies into language teaching	53 students at ELT departments Advanced level	One-group comparison Qualitative Descriptive	EFL learners have positive attitudes towards using asynchronous communication tools.
Hatipoğlu Kavanoz, S. 2006 English EFL teachers' beliefs, assumptions and knowledge about learner-centeredness.	13 EFL teachers in primary schools	Two-group comparison Qualitative	Public school EFL teachers have limited knowledge to implement learner-centeredness whereas private school teachers do not.
Çakır, I. 2006, English The use of video as an audio-visual material in EFL classroom.		Literature review	Using videos enables students to practice what they have learned through various techniques.
Şen, A. & Neufeld, S. 2006 English WEBQUESTS in ELT methodology	77 students of EFL, 5 ESP teachers in the departments of journalism, radio, TV and film studies, and public relations and advertising	Two-group comparison Experimental	In WQ2, although teachers were more positive towards these issues, students partly disagreed to contribute to the preparation of the WebQuest tasks and were neutral in working together with teachers to design such tasks.
Aydın, S. 2006, English Computer effect on the test and inter-rater reliability of writing tests of ESL learners	40 students at ELT Department Advanced level	Two-group comparison Experimental	The test and inter-rater reliability of the writing samples of the computer group students is significantly higher than that of the pen-paper group participants.
Ulusoy, M. 2006, English Computers in writing process		Literature review	Teachers, peers, instructional strategies, and computer software all together play some important roles on developing students' writing abilities.
Akbulut, Y. 2007, English Foreign language reading comprehension and vocabulary acquisition in a linear hypermedia environment	69 students at ELT department Advanced level	Two-group comparison Experimental	Annotation type, reading ability and previous topical knowledge are significant factors contributing to vocabulary learning while reading ability and learning styles are important variables contributing to reading comprehension in a hypermedia environment.
Aydın, S. 2007, English The attitudes of EFL learners towards the Internet	115 students in ELT departments Advanced level	One-group comparison Descriptive	EFL learners have positive attitudes towards the Internet except for some items such as addiction, socialization and shopping.
Akbulut, Y. 2008, English The attitudes of foreign language students towards using computers	155 students in ELT departments at advanced level	One-group comparison Descriptive	EFL learners have positive attitudes towards CALL, and having a PC at home, PC experience and hours of Internet use are significant factors that affect the attitudes.
Kocoğlu, Z. 2008, English EFL student teachers' perceptions on the role of electronic portfolios in professional development	5 students in ELT department at advanced level	One-group comparison Qualitative	E-portfolios help students and teachers keep current with innovations in the digital world while EFL learners do not believe that e-portfolios are important for reflective thinking.
Yüksel, D. & Tanrıverdi, B. 2009, English Effects of watching captioned movie clips on vocabulary development of EFL learners	120 students in ELT department at advanced level	Two-group comparison Experimental	Captioned movie clips have significant gains on vocabulary knowledge.