

## **Motivational English Language Learning Strategies through Computers among EFL Learners**

Farinaz Shirani Bidabadi, Assistant Professor, Shahreza branch, Islamic Azad University  
*f\_sh3000@yahoo.com*

### **Abstract**

The aim of this study was to describe and find out motivational English language learning strategies through computers among Iranian EFL learners and find out how learners' motivations change towards English language learning through computers. The mixed method approach (quantitative and qualitative) was employed in this study. A total of 84 (out of 130) female freshman university learners from a university in Isfahan were randomly selected to fill out the questionnaire reflecting their motivational English language learning strategies through computers. They were aged between 18 and 20 years old and were native speakers of Persian. They were all in intermediate level based on their English proficiency levels. Also, a group of 6 out of these 84 learners were purposefully selected for the semi-structured interview in order to get more in-depth information. The descriptive analysis revealed that the learners all used high level of motivational strategies while learning English as a foreign language. It also demonstrated that the learners' motivational strategies related to the use of learners' general feelings towards computers were more frequently identified. The findings of the interviews also revealed that the use of computers motivate and stimulate learners to learn their courses as well as to communicate with one another more effectively. The implication of this study is to use computers as a teaching tool in classes and the learning motivational strategies through computers should be utilized in learning environments.

**Keywords:** motivations; computer; strategies; and learning

The English language is taught and learned as a foreign language in classes at secondary school, high school and universities in Iran. However, very few learners are able to learn English through computers. This may be associated with the learners' motivations towards English language learning. Motivation refers to a process that begins with a need and leads to a behavior that moves a learner towards accomplishing an aim (Babae 2012; Melendy, 2008). The issue of motivation is so important in EFL contexts such as Iran because their motivations towards learning a foreign/second language direct approaches to generating teachers and lecturers motivation in their teaching. According to Babae (2012), suitable curricula and good instruction may not be ample to guarantee success because without sufficient motivation even learners with the most notable abilities cannot get and achieve long-term aims. Thus, the motivation strategies are essential to be identified in English language learning particularly in EFL contexts.

Meanwhile, computer technologies have been considered essential in Iran for the last few decades. It seems that the use of computer technologies can be a distinction from the previous technologies such as television, tape-recorders, and radios in classrooms. The use of computer technologies in the classrooms has been increased. Also, the efficacy of the use of the computer for increasing language learning constituted an issue of major importance in the nineties (Garret, 2009; Genç & Aydm, 2010). Computers activities can reduce affective filters and allow more foreign/second language learning occurs (Krashen, 1981; Tyson, 1994). Therefore, computer activity tasks can often enhance the interaction between learners and the language materials such

as listening, reading, and writing. According to Hanson-Smith (1997), computer-assisted language learning (CALL) can help learners improve their language skills very fast and causes learners to study their lessons at their own pace and speed, and achieve immediate feedback. Therefore, this study aimed to focus on the motivational strategies of Iranian EFL freshman university learners learning English language as a foreign language through computers. In other words, the purpose of this study was to investigate the level of the learners' motivational strategies through computers as well as to identify motivational strategies in English language learning through computers and find out how learners' motivations change towards English language learning through computers.

### **Motivation in Foreign/second Language Learning through Computers**

Motivation for foreign/second language learning refers to the learners' orientation with respect to the purpose of learning a foreign/second language (Crookes & Schmidt 1991). It plays an important role in the process of foreign/second language learning particularly through computers. Computers have been utilized for language teaching and learning since forty years ago (Warschauer & Healey 1998; Lee 2000). Foreign/second language learning through computers involves a great number of social, psychological, and cognitive aspects which may motivate foreign/second language learners utilizing computers in their studying. It should also be taken into account that according to (Lee, 2000), the first form of computer-assisted language learning was based on the behaviorist learning model. Behaviorist computer assisted language learning was first designed and mainly utilized for extensive drills, explicit grammar instruction, and translation tests (Ahmad, et al., 1985, Lee, 2000). Then, in the 1970's and 1980's communicative computer assisted language learning emerged to have a reaction towards the behaviorist approach in language learning. Rivals of communicative computer-assisted language learning declined behaviorist approaches at the theoretical and pedagogical level and reported that computer assisted language learning should concentrate more on utilizing forms instead of the forms themselves. Grammatical points should be taught implicitly and learners should be persuaded to produce original statements (Jones & Fortescue, 1987; Phillips, 1987; Lee, 2000; Meihami, Varmaghani, 2013). Cognitive theories express that learning was a creative process hence this form and method of computer-based teaching led to cognitive theories which realized that learning was according to (Lee, 200) a creative process of discovery, development, and expression,. After that teachers and instructors moved away from a cognitive viewpoint of communicative language teaching to a socio-cognitive viewpoint that emphasizes genuine and authentic language use in a meaningful and real context. Thus, integrative computer assisted language learning tries to integrate the receptive skills (listening and reading) and productive skills (speaking and writing) as well as to integrate technology more completely into language teaching (Lee, 2000; Warschauer & Healey, 1998). Therefore, learners learning a foreign/second language through computers may employ several motivational strategies that they can contribute learners to do the entire study skill activities at their own speed and time utilizing their own motivational learning styles and strategies.

### **Methodology**

#### **Participants**

A mixed methodology (quantitative and qualitative) design was utilized in this study. The sample group of the study consisted of 84 out of 130 Iranian female freshman learners who aged between 18 and 20 years old randomly selected. They were majoring in Teaching English as a Foreign Language (TEFL). They were all native speakers of Persian and in intermediate level

based on their English proficiency levels. Then, a group of 6 out of 84 learners were purposefully selected for the semi-structured interview based on the findings of their questionnaires. They were named as learner 1 to learner 6. The data collection instrument consisted of a questionnaire adapted and modified from Warshauer (1996) aiming at finding out the Iranian female freshman learners' motivational English language learning strategies through computers. Two more items were added to this questionnaire by the researcher related to the use of computers for communication and learning. The questionnaire revealed the learners' choices on a five point Likert-Scale, from Strongly Agree to Strongly Disagree. The first five items revealed the use of computers for word processing. The next thirteen items showed the use of computers for communication and learning. Finally, the last fourteen items indicated the learners' general feelings towards the use of computers. The questionnaires were filled in during one normal classroom learning period. The learners were informed about the purpose of the study in their native language.

Prior to the actual data collection, the motivational strategies through computers questionnaire was piloted and the reliability Cronbach's Alpha was 0.88. The second instrument used in this study was semi-structured interview. The interview questions were open-ended and developed based on questionnaires, research questions, and purpose of the study. They focused on identifying and exploring Iranian EFL learners' motivational English language learning strategies through computers and how their motivations change towards English language learning through computers. Semi-structured interviews were utilized in L2/FL research studies because semi-structured interview allows the researcher to explore different aspects of a learner's experience deeply (Brown, 2001; De Groot, 2002; Dörnyei, 2001). The learners were allowed to use their native language (Persian/Farsi) in order to elicit more motivational strategies they used. However, it was expected that the learners would be utilizing more than ninety percent of English language in their speech (interview) because they are majoring in English as a Foreign Language. All the interview data were tape-recorded in order not to miss any information or data expressed by the learners.

### **Data Collection Procedure and Analysis**

As mentioned earlier, the learners were told about the purpose of the study and how to fill in the questionnaire (in Persian). It took learners about 35 to 45 minutes to complete the questionnaire. The statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) 16.0 for Windows. With respect to the analysis of the findings achieved from the learners' motivational strategies through computers, descriptive statistics (frequencies, means and standard deviations) were used to investigate the motivational strategies of Iranian EFL freshman university learners learning English language as a foreign language through computers. After that, six participants out of 84 learners were selected based on their structured questionnaires' scores to gather insights on the Iranian EFL learners' motivational English language learning strategies through computers and how learners' motivations change towards English language learning through computers.

The learners were asked to clarify and explain how computers contribute to their learning and what makes them utilize computers while learning English. Regarding the interview data analyses, the learners' verbal report and interview tapes were transcribed into verbatim transcription immediately after data collection session. It was found that very little Persian words and phrases had been used in the interviews. Therefore, the back to back translation was not necessary because this would only be conducted if the responses were less than ninety percent in English. Nevertheless, the translations were also checked by three university lecturers. The

transcriptions were copied and given to the interviewees in order to be read and confirmed whether the responses reflected what they had said. Then, the verbatim transcription of the data were read and re-read through by the researcher in order to get an overall sense of the interview. Next, the data were read line by line by the researcher to identify statements related to the motivational strategies.

### Findings and Discussions

#### Descriptive Analysis of the Level of the Motivational Strategies through Computers

Table 1 shows that the learners' replies were categorized into three ranges (low, moderate and high) based on their overall mean scores and frequency of their total motivational strategies of Iranian EFL freshman university learners learning English language as a foreign language through computers. From the total of 84 freshman learners 62% (n=55) of the learners experienced high level, whereas 38% (n=29) of them experienced moderate use of total motivational strategies through computers.

**Table 1.** *Level of the Motivational Strategies through Computers*

	Level of Motivation	Frequency	Percentage (%)
	Low (32-73)	0	0%
<b>Learners</b>	Moderate (74-115)	29	38%
	High (116-160)	55	62%
	Total	84	100%

As Table 1 indicates, none of the EFL freshman learners experienced low level of total motivational strategies through computers. This shows that these learners all try to use motivational strategies while they are learning English as a foreign language. Thus, according to Warschauer and Healey (1998) and Lee (2000), motivation plays an important role in the process of foreign/second language learning particularly through computers and integrative computer assisted language learning attempts to integrate the receptive skills (listening and reading) and productive skills (speaking and writing) as well as to integrate technology more completely into language teaching

#### Descriptive Analysis of the Learners' Motivational strategies through Computers

In order to achieve a conclusive and convincing finding, Table 2 shows a descriptive analysis (frequencies, means, standard deviations and rank orders) of the learners' motivational strategies through computers by categories. Responses to the items of the third category (general feelings) had the highest mean value of 3.69, a standard deviation of 0.34, and frequency of 63% (n=84) followed by the responses to the statements of the second category (the use of computer for communication and learning) with the next highest mean score of 3.62, a standard deviation of 0.37 and frequency of 50% (n=84) for the learners. It is implied that the majority of the learners are motivated to use computers while learning. According to Soh and Soon (1991) and Warschauer (1996); computers can provide international contact and make the learning easy for the learners working on meaningful projects (Barson, Frommer & Schwartz, 1993; Vilmi, 1995; Warschauer, 1996).

**Table 2.** *Frequencies, Means and Standard Deviations of Motivational Strategies (by Category)*

<b>Types of Motivational Strategies through Computers</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>F (%)</b>	<b>RO</b>
Use of Computer for Word Processing	84	3.54	0.54	45% out of 100%	3
Use of Computer for Communication and Learning	84	3.62	0.37	50% out of 100%	2
General Feelings Towards Computers	84	3.69	0.34	63% out of 100%	1

N=Number of respondents; SD=Std. Deviation; RO=Rank Order  
The percentages (%) have been rounded to the nearest tenth.

In addition to the mean scores for the three types of motivational strategies through computers in general, Tables 3, 4, and 5 reveal the means, standard deviations and frequencies of the learners' motivational English language learning strategies through computers. With regard to the use of computers for word processing, Table 3 demonstrates that the item "*Writing papers by computers saves time compared to by hand*" scored the highest average mean with the mean value of 3.79 and a standard deviation of 1.00 by 70% of the learners. The next highest mean value of 3.55 and a standard deviation of 0.91 were noted for the item "*I enjoy writing my papers by computer more than by hand*" followed by the item "*I enjoy seeing the things I write printed out*" (Mean= 3.55; SD= 1.03). These imply that the learners believe that using computers for writing papers motivate them to learn English as a foreign language much better. According to Jayachandran (2007), the integration of both computers and English language learning enables learners to organize and process their knowledge at the touch of keyboard buttons. This method can definitely yield exciting, rewarding and motivating results in English language learning and teaching.

**Table 3.** *Frequencies, Means and Standard Deviations of Learners' Motivational strategies through Computers*

<b>Motivational strategies through Computers</b>		<b>F (%)</b>	<b>M</b>	<b>SD</b>
<b>Use of Computers for Word Processing</b>		<b>45%</b>	<b>3.54</b>	<b>0.54</b>
1	I can write better essays when I do them on computer	46%	3.44	1.04
2	Revising my papers is a lot easier when I write them on computer.	62%	3.36	1.21
3	I enjoy writing my papers by computer more than by hand.	66%	3.55	0.91
4	I enjoy seeing the things I write printed out.	49%	3.55	1.03
5	Writing papers by computers saves time compared to by hand.	70%	3.79	1.00

The percentages (%) have been rounded to the nearest tenth.

For the use of the computer for communication and learning (items 6 to 18), Table 4 indicates that among 84 learners 87% of the learners employed the item "*I enjoy using the computer to communicate with people around the world*" with the highest mean value of 4.14 and

a standard deviation of 0.67. The item "I enjoy using the computer to communicate with my classmates" scored the next highest mean value of 4.02 and a standard deviation of 0.98 by 81% of the learners, followed by the item "If I have a question or comment, I would rather contact my teacher by email than in person" (Mean= 3.94; SD=0.92; F= 83%). Then, the highest mean value of 3.89 and a standard deviation of 0.85 were noted for the item "An advantage of e- mail is you can contact people any time you want" by 76% of the learners. This was followed by the item "using e-mail and the Internet makes me feel part of a community" scored by 69% of the learners with the mean value of 3.82 and a standard deviation of 0.86. These indicate that English language learning and using computers while learning a foreign/second language are closely related to one another. Also, learners are motivated and stimulated to utilize computers in developing their interactive communication skills and their writing activities by using word processing. In other words, they would like to communicate with one another through computer.

**Table 4.** *Frequencies, Means and Standard Deviations of Learners' Motivational strategies through Computers*

<b>Motivational strategies through Computers</b>		<b>F (%)</b>	<b>M</b>	<b>SD</b>
<b>Use of Computer for Communication and Learning</b>		<b>50%</b>	<b>3.62</b>	<b>0.37</b>
6	I enjoy using the computer to communicate with people around the world.	87%	4.14	0.67
7	I enjoy using the computer to communicate with my classmates.	81%	4.02	0.98
8	I use computers to do all the activities of the course.	46%	3.25	1.31
9	I enjoy using computers doing academic activities.	73%	3.65	1.09
10	I am more afraid to contact people in person than by e- mail.	57%	3.58	1.04
11	I enjoy using the computer to communicate with my teacher.	45%	3.05	1.27
12	If I have a question or comment, I would rather contact my teacher by email than in person.	83%	3.94	0.92
13	E- Mail helps people learn from each other.	53%	3.06	1.39
14	An advantage of e- mail is you can contact people any time you want.	76%	3.89	0.85
15	Writing to others by e- mail helps me develop my thoughts and ideas.	74%	3.74	0.98
16	Using e- mail and the Internet makes me feel part of a community.	69%	3.82	0.86
17	Using e- mail and the Internet is a good way to learn more about different people and cultures.	70%	3.54	1.40
18	Communicating by e- mail is a good way to improve my English.	52%	3.31	1.18

Regarding the general feelings towards computers (items 19 to 32), Table 5 shows that among the learners (n=84), the item "Learning how to use computers is important for my career" scored the highest mean value of 4.06 and a standard deviation of 1.17 by 78% of these learners. The next highest mean value of 3.92 with a standard deviation of 1.02 was noted for the item "I enjoy the challenge of using computers" by 81% of these learners. Then, the item "Using a computer gives me more chances to read and use authentic English" was the next highest mean

value of 3.75 with a standard deviation of 1.13 employed by 66% of the learners. After that the item “Using a computer gives me more control over my learning” was the highest average mean with the values of 3.70 and a standard deviation of 0.90 employed by 67% of the learners. These reveal that when learners learn English language by using computers, they can store, access and analyze their data. Computers can also make learners have an exciting and interesting learning environment. They can enhance the learners' opportunities to learn effectively as well.

**Table 5. Learners' Motivational strategies through Computers**

	<b>Motivational strategies through Computers</b>	<b>F (%)</b>	<b>M</b>	<b>SD</b>
	<b>General Feelings Towards Computers</b>	<b>63%</b>	<b>3.69</b>	<b>0.34</b>
19	Learning to use a computer gives me a feeling of accomplishment.	71%	3.62	0.98
20	Writing by computer makes me more creative.	57%	3.61	1.18
21	Using a computer gives me more chances to read and use authentic English.	66%	3.75	1.13
22	I want to continue using a computer in my English classes.	71%	3.63	1.07
23	Using a computer is worth the time and effort.	57%	3.54	1.49
24	Using a computer gives me more control over my learning.	67%	3.70	0.90
25	I enjoy the challenge of using computers.	81%	3.92	1.02
26	Learning how to use computers is important for my career.	78%	4.06	1.17
27	I can learn English more independently when I use a computer	63%	3.42	1.31
28	Computers do not keep people isolated from each other.	76%	4.01	0.98
29	I can learn English faster when I use a computer.	64%	3.65	1.09
30	Using a computer gives me more chances to practice English.	67%	3.70	0.81
31	Computers are not usually very frustrating to work with.	59%	3.36	1.08
32	Computers do not make people weak and powerless.	71%	3.65	0.81

### **Insight on Learners' Motivational strategies through Computers**

Regarding the high level of the use of motivational strategies through computers by the Iranian EFL female freshman learners, all six interviewees reported that computers are good motivators for learning English. Interviewees' motivational strategies towards the use of computers for word processing were reflected in the statements reported by the interviewees, such as she (learner two) is interested in *learning English through computers when [she] works with computer [she] gets more curious to find out what [she] works on*. She also stated that *she can use computers to write her homework such as compositions, exercises and essay*. Learner three, four and five had also positive belief towards using computers for word processing they said that they *type new words and sentences in the word sheet and try to fix them in their minds*. In addition, almost all interviewees stated that they use computers *to watch movies with subtitles and captions*. They *surf the net and learn new information*. Thus, these indicate that computers can contribute the learners to learn better and faster. They can make learners be more excited and interested in learning.

The second category of motivational strategies related to the use of the computer for communication and learning reflects the interviewees' use of various English language learning motivational strategies towards computer. This includes the learners' interests in utilizing computers to have a relationship with people, do some activities related to their courses, contact their friends and classmates by e-mails, and listen to CDs and watch movies and practice their English learning. For instance, interviewees expressed themselves that *learning by computer is one of the best ways to practice their English and other courses. Computers have some modern programs through which learners can be helped in their learning.* All the interviewees also reported that they can *communicate with one another by chatting and sending e-mails.* Therefore, learning motivational strategies through computers can be important contributors to EFL learners learning.

The third category of motivational strategies related to the general feelings towards computers reflects the statements reported by the interviewees. For example, they stated that computers make them be more excited and interested in learning, give the learners more opportunities to read and learn authentic materials related to their various courses, control and have a lot of influence over their learning, and make learners get more independent. Hence, learning English through computers to be part of the method of teaching and learning in classrooms was regarded by the majority of the interviewees as having the most effect and impact on their English language learning motivational strategies as the interviewees stated that *computers can make them pay more attention and be more careful while learning in the classrooms.* Thus, it is implied that computers should be integrated in the Iranian EFL learners' learning and teaching processes.

### **Implications**

It is implied that the learners use these motivational strategies to keep a positive attitudes towards computers. These motivational strategies towards computers were found to be a determining factor in ultimate language performance. Recognizing these motivational strategies can be crucial to EFL learners as well as to instructors, teachers and material developers in education. Computers should now be utilized as a teaching tool in classes. According to Gardner (2006), the teacher, the class atmosphere, the course content, materials and facilities, as well as personal traits and characteristics of the learners will have an effect on the learners' classroom learning motivations (Vaezi 2008). Thus, using computers and foreign/second language learning are closely inter-related and this enables learners to organize and process their knowledge at the touch of keyboard button. This will definitely yield exciting and rewarding results in language teaching and learning (Jayachandran, 2007). Awareness regarding the importance of motivational strategies towards computers and English language learning on the part of foreign/second language teachers, instructors, lecturers and material developers in education might inspire them to facilitate English language learning for learners indifferent ways.

### **Conclusions**

The purpose of the present study was to investigate the level of the learners' motivational strategies through computers as well as to identify motivational strategies in English language learning through computers and find out how learners' motivations change towards English language learning through computers. By considering this issue, the findings from both quantitative and qualitative data of the current study give a consistent picture and image, that the learners have a high level of motivation towards computer while learning English.



The findings also showed that learners used motivational strategies that expressed the learners' general feelings towards computers followed by the motivational strategies related to the use of the computer for communication and learning. They believe that these motivational strategies can contribute to their learning English more effectively as well as their other courses. Therefore, it is concluded that motivational strategies through computers can be integrated into Iranian EFL learners' learning environments. It is also concluded that learners utilizing these English language learning motivational strategies are motivated and stimulated to learn a variety of activities which make them become and feel more independent. Using these motivational strategies enhance the learners' self-esteem and have a better attitude towards learning a foreign language.

However, this study was limited to eighty-four Iranian EFL female freshman learners majoring in Teaching English as a Foreign Language at a university in Isfahan, Iran. Furthermore, the scope of this study was confined to the data collected utilizing the learners' motivational strategies through computers. Further studies can concentrate on some other issues, such as learners' attitudes and beliefs towards computers.

### References

- Ahmad K., Corbett G., Rogers M. & Sussex R. (1985) *Computers, language learning and language teaching*, Cambridge: Cambridge University Press.
- Babaei, N. (2012). Motivation in Learning English as a Second Language: A Literature Review. *Canadian Journal for New Scholars in Education*, 4 (1), 1-7.
- Barson, J., Frommer, J., & Schwartz, M. (1993). Foreign language learning using e-mail in a task-oriented Perspective: Interuniversity experiments in communication and collaboration. *Journal of Science Education and Technology*, 4, 565-584.
- Brown, J. D. (2001). *Using surveys in language programs*. Cambridge, UK: Cambridge University Press.
- Crooks, G., & Schmidt, R. W. (1991). Motivation: Reopening the research agenda. *Language Learning*, 41, 469–512.
- De Groot, E. V. (2002). Learning through interviewing: students and teachers talk about learning and Schooling. *Educational Psychologist*, 37(1): 41-52.
- Dörnyei, Z. (2001). *Teaching and researching motivation*. Harlow: Longman.
- Gardner, R.C., (2006). The socio-educational model of second language acquisition: A research paradigm. *EUROSLA Yearbook*, 6: 237-260. DOI: [10.1075/eurosla.6.14gar](https://doi.org/10.1075/eurosla.6.14gar)
- Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: Integrating innovation. *The Modern Language Journal*, 93, 719-740.
- Genç, G & Aydın, S. (2010). Students' motivation towards computer use in EFL learning. *IETC*, April 26-28, Istanbul, Turkey.
- Hanson-Smith, E. (1997). *Technology in the classroom: Practice and promise in the Papers*, 2 Alexandria, VA: Teachers of English to Speakers of the Other Languages
- Jayachandran, J. (2007). Computer assisted language learning (CALL) as a method to develop study skills in students of engineering and technology at the tertiary level *The Indian Review of World Literature in English*, Vol. 3, No. II – July,
- Jones C. & Fortescue S. (1987) *Using computers in the language classroom*, Harlow: Longman
- Krashen, S. (1981). *Second language acquisition and second language learning*, Oxford: Oxford University Press.

Lee, K. W (2000). English teachers' barriers to the use of computer-assisted language learning. *The Internet TESL Journal*, VI (12), 1-8. Retrieved from <http://iteslj.org/>  
<http://iteslj.org/Articles/Lee-CALLbarriers.html>

Meihami, H, & Varmaghani, Z. (2013). The Effect of Integrating Computer-Assisted Language Learning Materials in L2 Reading Comprehension Classroom. *International Letters of Social and Humanistic Sciences*, 9, 49-58.

Melendy, G. A. (2008). Motivating writers: The power of choice. *Asian EFL Journal*, 10(3), 187-198.

Phillips, M. (1987). *Communicative language teaching and the microcomputer*. London: The British Council.

Soh, B. L., & Soon, Y. P. (1991). English by e-mail: creating a global classroom via the medium of computer technology. *ELT Journal*, 45, 287-292.

Tyson, R. E. (1994). Motivation and Computer-assisted language learning, Research Institute on East-West Cultures (μ¼ ¹È ¼±), 2, 137-146, Hong Ik University, Seoul.

Vaezi, Z. (2008). Language learning motivation among Iranian undergraduate students, *World Applied Sciences Journal*, 5(1), 54-61.

Vilmi, R. (1995). HUT e-mail writing project: An ongoing experiment. In T. Orr (Ed.), *English for science and technology: Profiles and perspectives* (pp. 47-59). Aizuwakamatsu, Japan: University of Aizu, Center for Language Research.

Warschauer, M. (1996). Motivational aspects of using computers for writing and communication. *Second Language Teaching and Curriculum Center, National Foreign Language Resource Center, NFLRC Net Work # 1*, 1-17

Warschauer & Healey (1998). Computers and language learning: An overview. *Language Teaching*, 31, 57-71.

Wilkenson, T. W., & Sherman, T. M. (1996). Telecommunications-based distance education: Who's doing what? *Educational Technology*, 21 (11), 54-59.