THE EFFECTS OF USING TECHNOLOGY AND THE INTERNET ON SOME IRANIAN EFL STUDENTS' PERCEPTIONS OF THEIR COMMUNICATION CLASSROOM ENVIRONMENT

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Abstract

This study aims to explore the effects of implementing a CALL framework on the students' perceptions of their communication classroom environments. The What Is Happening In This Class? (WIHIC) questionnaire was distributed twice among 34 (F=14 and M=20) Iranian EFL students, the first time after a ten-session-long regular no-tech communication class and the other time after a ten-session-long communication class informed by a CALL framework. The data were analyzed using SPSS and the results showed that there was a significant difference ($p<0.05$) between the participants' perceptions of each dimension (i.e, Student cohesiveness, Teacher support, Involvement, Task orientation, Cooperation, and Equity) of their communication classroom before and after introducing the CALL framework. The CALL-informed communication class led to a learning environment that was perceived by students as more efficient and learner-centered. The work uses the concept of learning environment, which is claimed to take into account many different aspects of a learning context and hence comprehensive, to explore practicality of CALL ideas for an EFL classroom.

1. Introduction

The rapid evolution of information and communication technology (ICT) has affected English teaching in many different ways. A large number of studies have been carried out to measure the effectiveness of CALL. Many of these studies report no difference between traditional face-to-face instruction and CALL but, as Burnston (2003) and Jung (2003) state, these inquiries are

concerned about final outcomes and conclusions are almost always made in a theoretical vacuum without considering the cognitive and/or second language acquisition processes underlying reported linguistic performance. In assessing the impact of technology on curriculum, it is important to take into account that more aspects need to be measured than immediate learning outcomes (Burnston, 2003).

Learning environment field of research, comprehensive and well-established, is able to present a holistic picture of the effects of CALL. The concept of learning environment involves three types of dimensions (Moos, 1974), which lead to its comprehensiveness. Moos's three basic types of dimensions for classifying human environments are Relationship Dimensions (which identify the nature and intensity of personal relationships within the environment and assess the extent to which people are involved in the environment and support and help each other), Personal Development Dimensions (which assess basic directions along which personal growth and self-enhancement tend to occur) and System Maintenance and System Change Dimensions (which involve the extent to which the environment is orderly, clear in expectations, maintains control and is responsive to change).

This study applies one of the most widely used instruments (i.e., What Is Happening In This Class (WIHIC) questionnaire, provided in Appendix A) in the field of learning environment studies to assess the efficiency of a technology-enhanced learning environment in an EFL classroom. The WIHIC questionnaire has been developed based on Moos' ideas and explores a learning environment from seven dimensions (i.e., Student cohesiveness, Teacher support, Involvement, Investigation, Task orientation, Cooperation, and Equity). This study aims to investigate the effects of using technology on some Iranian EFL students' perceptions of their communication classroom environments

2. Literature review

2.1. Research on CALL effectiveness

Exploring and measuring the effectiveness of CALL through different research studies have been ongoing for decades. Potentials of new technology for learning and teaching in the field of foreign languages have been evaluated and documented by many researchers but judgments in this area vary widely. Research on CALL effectiveness can be presented from different

perspectives. For example, in a meta-analysis, Felix (2005) specified three lines of research on the effectiveness of CALL. The first line includes early positive reports from the authors of several large meta-analyses of CALL, where Basena and Jamieson (1996, p. 19) stated that "the newer technologies show promise to be able to provide feedback in multiple modes, such as listening and reading". The second line of inquiry involves dismissive, unsubstantiated comments such as: "Study after study seems to confirm that computer-based instruction reduces performance levels and that habitual Internet use induces depression" (Noble, 1998, p. 1). The third line and the most often cited collection of research results showed no difference between face-to-face instruction and CALL. At the end of her article, Felix (2005) explains common problems in the effectiveness research including misleading titles, poor choice of variables to be investigated, poor description of the research design, failure to investigate previous research, and overambitious reporting of results.

In another comprehensive study by Jung (2003), CALL studies are looked at from three second language acquisition perspectives: input perspective, output perspective, and interaction perspectives. Several CALL research studies (e.g., Dodd, 1997) conducted within the input perspective have attempted to explain the meaningful input computers can provide for the learner. However, all research of input perspective focused on the positive effects of computer applications comparing with conventional learning tools or methods. On the other hand, CALL studies within the output perspective (e.g., Nagata, 1998) emphasize the importance of comprehensible output. The interaction perspective claims that linguistic input needs to become intake in order to be acquired by the learner (e.g., Toyoda & Harrison, 2002).

However, Jung (2003) criticizes these three lines of research on the ground that they are product-oriented in evaluating the effectiveness of CALL. Jung (2003) believes that the product-oriented approach provides outcomes from CALL applications in controlled settings and one can know the result in the specific areas by using a specific tool. However, this product-oriented approach has proven unsatisfactory primarily due to inattention to the central role of the learning process and the corresponding influence of learner characteristics (Doughty, 1987). To clarify the effectiveness of technology and understand language learning, it is required to evaluate classroom environment with multiple environmental elements based on empirical observation. Unfortunately, components to explore classroom environments are not clear.

Individual researchers have formed a number of environmental conditions that have an impact on students' learning differently. These conditions might be used as a framework to explore CALL classroom environments. Moos (1974), for example, proposes three widely used categories for describing the social climate of a classroom: (1) personal development, involving personal growth and enhancement; (2) system maintenance, which involves environmental order, control and change, and (3) relationship, which identifies interaction and support among participants in the environment. Salomon (1997) also suggests that important components of classroom environments may include task, sense of control, teacher-student interaction, student-student interaction, atmosphere, and teacher behaviors. These frameworks will be helpful to look at fuller views of language learning classroom environments with technology.

Although the concept of learning environments didn't find its way in the research on CALL effectiveness, some studies (Dunkel, 1991; Collentine, 2000; Jung, 2003) called for more process-oriented studies. In the following part we have selected a number of recent process-oriented studies which are related to the scope of the present study, those that investigate teachers and students' perception of the use of CALL.

Shin & Son (2007) examined Korean secondary school EFL teachers' perceptions and perspectives on the use of the Internet for teaching purposes. A total of 101 teachers participated in a survey and responded to the questions of how they think about Internet-Assisted Language Teaching (IALT), how they use the Internet, and what types of resources they use on the Internet. The findings of the study suggest that there are three key factors affecting the use of the Internet in the classroom: teachers' personal interest in Internet use; teachers' abilities to integrate Internet resources into classroom activities; and computer facilities and technical support in schools.

Kim (2008) examined 10 ESL/EFL teachers' teaching beliefs and perceptions about the role of computers in their classrooms. The grounded theory method was employed to understand these teachers' perceptions of computers in their classrooms. For data collection, each participant was interviewed for 50 minutes. The findings suggested that these teachers' perceptions and expectations of computers favored their use as instructional tools.

In another study by Park and Son (2009) some Korean EFL teachers' perceptions of computer-assisted language learning (CALL) were explored. The results of the study indicated that the teachers have positive and favorable attitudes toward the use of the computers. They

consider computer technology as a useful teaching tool that can enhance ways of teaching by offering students a variety of language inputs and expanding students' learning experiences in real and authentic contexts.

Wang & Wang (2010) investigated the perceptions of EFL Taiwanese university students on a collaborative CALL environment. The participants were 112 intermediate proficiency English as a foreign language Taiwanese third-year university students. The results of the study provided encouraging evidence to show that the participants generally perceived that they benefited from the whole process of a collaborative computer assisted language learning program to have positive perspectives on the implemented CALL course itself, advance their English linguistic knowledge, to construct associated content knowledge, and foster their affective attitudes towards learning language via a collaborative CALL environment.

Lin et al. (2011) explored EFL students' perceptions of learning vocabulary collaboratively with computers. From the qualitative data, more than 70% of the participants in the computer group reported a positive attitude and anticipation to learning vocabulary in such an environment.

Ballester (2012) reports on a 2-year empirical study of intermediate level learners' perceptions of the use of a web-based multimedia program with authentic video clips and its effectiveness as a language-learning tool. Students believed that the learned culture and vocabulary enhanced their listening skills. At the same time, Sophocleous (2012) explored student teachers' perceptions of the usefulness of new technologies in their learning and the participants believed that they could be excellent tools to use in their teaching with their students.

It is interesting that before Jung's (2003) recommendation on the use of Moos' framework for the evaluation of CALL effectiveness, this framework had triggered a well-established line of research in general educational setting. This line of inquiry is called the field of learning environments research.

2.2. Field of learning environments research

The pioneering works of two American scholars, Rudolf Moos and Herbert Walberg paved the way for the field of learning environments research. Walberg and Anderson (1968) developed the Learning Environment Inventory (LEI). Moos (1968) developed a number of social climate scales, including those for use in correctional institutions and psychiatric hospitals.

Interest in the concept of learning environments then spread. Numerous research studies have revealed that student perceptions of the classroom environment account for appreciable amount of variance in learning outcomes, often beyond that attributable to background student characteristics (Dorman, 2001). Fraser (1998) states that the quality of the classroom environment in schools is a significant determinant of student learning and students' positive perceptions of learning environments will pave the way for meaningful learning.

The studies on language and language-related classroom environments in Moos' tri-partite model are more recent and a few available studies (e.g., Chua et al., 2011; Wei et al., 2009; Wilks, 2000, cited in Fraser 2002, p.6) report evaluation, exploration or promotion of language learning classroom environments based on Moos's framework.

The growth of learning environment studies can also be viewed from another perspective. Interest in learning environments spread from the USA to The Netherlands where it was picked up by Theo Wubbels and colleagues (e.g., Wubbels & Brekelmans, 2006), and to Australia, where it was carried forward by Barry Fraser (Fraser, 1998, 2007). Learning environment research has since spread further afield to Asia (Fraser, 2002) and South Africa (Aldridge et al., 2006).

In Australia, Fraser and colleagues initially elaborated the Individualized Classroom Environment Questionnaire (ICEQ) (Fraser, 1990), but this was followed by other widely used instruments such as the Science Laboratory Environment Inventory (SLEI), Constructivist Learning Environment Survey (CLES), and the WIHIC (Fraser, 1998). In Asia, the study of learning environments has been undertaken in Singapore (Khoo & Fraser, 2008), Malaysia (Scott & Fisher, 2004), Japan (Hirata & Sako, 1998), India (Koul & Fisher, 2005), Taiwan (Aldridge et al., 1999), and Korea (Lee et al, 2003).

3. The study

3.1. Participants

The participants of this study were selected through accidental sampling. They were 34 Iranian (F=14 and M=20) upper-intermediate EFL students in a communication class in Parto English Institute, Arsanjan, Iran. The communication class had been organized to help these students to overcome the difficulties and weaknesses they had in their communication skills. The participants were between 17 and 21 years old.

3.2. The instrument

The WIHIC questionnaire (Appendix A) has brought parsimony to the field of classroom environment research. It combines modified versions of the most salient scales from a wide range of existing questionnaires with additional scales that accommodate contemporary educational concerns such as equity and constructivism (Fraser, 1998). The original 90-item nine-scale version was refined by both statistical analysis of data from 355 junior high school science students and extensive interviewing of students about their views of their classroom environments in general (Fraser et al., 1996, cited in Fraser, 1998). The final form of the WIHIC contains seven eight-item scales (i.e., Student cohesiveness, Teacher support, Involvement, Investigation, Task orientation, Cooperation, and Equity). Each item can be responded on a five-point Likert scale ranging from Almost Never to Almost Always.

The WIHIC questionnaire (Appendix A) was used to assess EFL students' perceptions of their communication classroom environments before and after implementing technology. To be consistent with the nature of communication classrooms, the Investigation scale of the WIHIC was removed and the other scales were used. The Investigation scale evaluates an environment dimension which is mainly related to science classroom environments and it explores the extent to which there is emphasis on the skills and on inquiry and their use in problem-solving and investigation. Typical items in this scale are: "I carry out labs in class to test my ideas" and "I solve problems by using information obtained from my own labs in class."

3.3. Design and procedure

After ten sessions of their regular communication class, the participants were asked to express their perceptions of their communication classroom environment through the WIHIC questionnaire. During these sessions, a textbook was used as the main teaching-learning resource. The textbook was the second book of "Topics from A to Z", written by Irene E. Schoenberg and published by Pearson Education, Inc. The book contains 26 units, each of which starts with an Opening Art section (which gets the students involved in the unit's content), followed by Facts section (that aims to increase students' knowledge of lexis), and Talk About Your Experience section (in which students give personal answers to guided questions). Then, the unit goes through Give Your Opinion, Pronunciation Pointer, Listening Comprehension,

Conversation Practice and Check Out sections, respectively. The audio materials were provided through a tape recorder. At the end of each session the participants were asked to write a 250-word essay about the topic of the unit which was taught in that session. Before the teacher provided his final feedback on the essays, each student was supposed to correct their peer's essay.

From the eleventh session on, a technology-enhanced language learning approach was adopted in the target communication classroom. At first, the participants were encouraged to select the topics they were interested in to talk about in their communication classroom. Topics included animals' rights, beauty, aims of education, ideal students and ideal teachers, the case of beggars, global issues, advertising, etiquette in my favorite country, and home schooling. For each session, the participants were directed to search about one of the topics on the Internet and prepare themselves to join the in-class discussion.

They were also asked to type a 250-word essay in a word processor about the related topic for each session and send it to the teacher through email. The teacher provided feedback upon the participants' written assignments. The ill-structured sentences were colored red and the corrected forms were also added. The reviewed written assignments were sent back to the participants three days after their submission.

The participants were also requested to bring a hard copy of the searched materials from which they got their ideas for the class. They were also asked to add their names and email addresses to the hard copy. The hard copies were exchanged among the participants and each participant was directed to provide their feedback about the passages through emails to the related participant and the teacher. The teacher also brought to the class some audio files and movie excerpts related to the topics. These materials were presented to the participants through a large LED monitor fed by a desk computer. The participants were encouraged to express the ideas about the content of the materials and about the topic in general. After ten sessions, the participants were asked to express their perceptions of their technology-enhanced language learning classroom environment through the WIHIC questionnaire.

The students' responses to the Likert scale including Almost Never, Seldom, Sometimes, Often, and Almost Always alternatives were scored 1, 2, 3, 4, and 5 respectively. Six groups of scores for each form of the questionnaire were provided for all participants. In other words, scores on Student cohesiveness, Teacher support, Involvement, Task orientation, Cooperation,

and Equity dimensions for all students before and after the treatment were provided. The score for each scale was the sum of the each participant's answer on that scale.

The data were analyzed with SPSS and different t-tests were conducted to see whether there is a significant difference between the participants' perceptions of each aspect of their communication classroom before and after introducing the technology-enhanced language learning component.

4. Results and discussion

The six pairs of scores were computed through SPSS for conducting different paired-sample t-tests between the scores of the same scales collected after and before technology-enhanced language learning approach. The results of these paired-sample t-tests are provided in Table 1. As it is clear, there are significant differences ($p<0.05$) between scores on Student cohesiveness, Teacher support, Involvement, Task orientation, Cooperation, and Equity dimensions before and after the treatment.

Table 1: The results of different paired-sample t-tests between the scores of the same scales collected after and before introducing technology-enhanced language learning approach.

		Paired Differences					t	df	Sig. (p<0.05)
					95% Confidence Interval of the Difference				
		Mean	SD	SEM	Lower	Upper			
Pair 1	SC1-SC2	-8.412	11.139	1.910	-12.298	-4.525	-4.403	33	**.000**
Pair 2	TS1-TS2	-8.706	11.971	2.053	-12.883	-4.529	-4.241	33	**.000**
Pair 3	IV1-IV2	-9.706	11.312	1.940	-13.653	-5.759	-5.003	33	**.000**
Pair 4	TO1-TO2	-9.559	11.745	2.014	-13.657	-5.461	-4.745	33	**.000**
Pair 5	CP1-CP2	-11.147	12.702	2.178	-15.579	-6.715	-5.117	33	**.000**
Pair 6	EQ1-EQ2	-9.647	12.521	2.147	-14.016	-5.278	-4.492	33	**.000**

Note: SC stands for Student cohesiveness, TS for Teacher support, IV for Involvement, TO for Task orientation, CP for Cooperation, and EQ for Equity. Also, 1 signifies pre-treatment regular textbook-based classroom and 2 signifies post-treatment technology-enhanced language learning classroom.

Overall, the results reported here clearly reveal that there are significant differences between students' perceptions of all dimensions (i.e., Student cohesiveness, Teacher support, Involvement, Task orientation, Cooperation, and Equity) of their classroom environments before and after implementing technology-enhanced language learning approach. It means that, from the students' perspectives, the technology-enhanced language learning approach to teaching has affected all dimensions of the classroom environment in a positive way. The technology-enhanced language learning approach adopted in this study helped the students to be more friendly and supportive of each other (i.e., Student cohesiveness) and caused them to perceive the teacher as more helpful and more interested in them (i.e., Teacher support). The students perceived that the technology-enhanced language learning approach increased their attentive interest, participation in class and their involvement with other students in assessing the viability of new ideas (i.e., Involvement). The approach helped students to perceive that they are more serious to complete planned activities and to stay longer on the subject matter (i.e., Task orientation). They perceived that in technology-enhanced language teaching classes they cooperate extensively with each other during activities (i.e., Cooperation). They also thought that the teacher in technology-enhanced language learning classes treats students more equally, including distributing praise, question distribution and opportunities to be included in discussions (i.e., Equity).

The results show that in case of this particular group of learners implementing a technology-enhanced language learning approach was able to help the EFL students participating in this study to find their classroom a better and more efficient place for learning.

5. Conclusion

This study tried to investigate the effects of adopting a technology-enhanced language learning framework on the students' perceptions of their EFL classroom environment. A one-group pretest-posttest design was used and the results showed that the students in a technology-enhanced language learning classroom perceived their classroom learning environment more positively ($p<0.05$) than their regular no-tech class peers. In other words, in this particular context a technology-enhanced language learning environment proved to be more efficient, learner-centered and facilitative of learning.

Although this study is small-scale and its results cannot be easily generalized, we believe that the present study can be of significance for a number of reasons. First, it is informed by Moos' framework and it explores technology-enhanced learning approaches in an EFL context. In spite of many existing outcome-based studies on the effectiveness on CALL, the present research study tried to explore the efficiency of CALL from a more comprehensive perspective. Outcome-based approaches to assessing the effectiveness of CALL may not able to reveal the hidden aspects underlying the students' learning. The technology-enhanced learning environment in the EFL classroom in this study proved to be able to support students' learning. The use of the Internet and technology led the participants to perceive their classroom environment dimensions (i.e., Student cohesiveness, Teacher support, Involvement, Task orientation, Cooperation, and Equity) in a more positive way. This change in the participants' perceptions can bring about better and deeper language learning in the long term. The students were shown to be more interested, motivated and self-directed in the new learning environment due to technology use.

Moreover, in spite of internationalization of learning environment studies and vast arrays of research in different learning environments, few studies could be located that report some explorations regarding Iranian students' perceptions of their learning environments. Students' perceptions of their classroom learning environments can significantly help us to assess the efficiency of the learning and teaching processes in those environments.

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Appendix A: What Is Happening In this Class? (WIHIC) Questionnaire

STUDENT COHESIVENESS		Almost Never	Seldom	Some-times	Often	Almost Always
1	I make friendships easily among students in this class.					
2	I know other students in this class.					
3	I am friendly to members of this class.					
4	Members of the class are my friends.					
5	I work well with other class members.					
6	I help other class members who are having trouble with their work.					
7	Students in this class like me.					
8	In this class, I get help from other students.					
TEACHER SUPPORT		Almost Never	Seldom	Some-times	Often	Almost Always
9	The teacher takes a personal interest in me.					
10	The teacher goes out of his/her way to help me.					
11	The teacher considers my feelings.					
12	The teacher helps me when I have trouble with the work.					
13	The teacher talks with me.					
14	The teacher is interested in my problems.					
15	The teacher moves about the class to talk with me.					
16	The teacher's questions help me to understand.					
INVOLVEMENT		Almost Never	Seldom	Some-times	Often	Almost Always
17	I discuss ideas in class.					
18	I give my opinions during class discussions.					
19	The teacher asks me questions.					
20	My ideas and suggestions are used during classroom discussions.					
21	I ask the teacher questions.					
22	I explain my ideas to other students.					
23	Students discuss with me how to go about solving problems					
24	I am asked to explain how I solve problems.					
INVESTIGATION		Almost	Seldom	Some-	Often	Almost

		Never		times		Always
25	I carry out labs in class to test my ideas.					
26	I am asked to think about the evidence for statements.					
27	I carry out labs in class to answer questions coming from discussions.					
28	I explain the meaning of statements, diagrams and graphs.					
29	I carry out labs in class to answer questions, which puzzle me.					
30	I carry out labs in class to answer the teacher's questions.					
31	I find out answers to questions by doing labs in class.					
32	I solve problems by using information obtained from my own labs in class.					
TASK ORIENTATION		Almost Never	Seldom	Some-times	Often	Almost Always
33	Getting a certain amount of work done is important to me.					
34	I do as much as I set out to.					
35	I know the goals for this class.					
36	I am ready to start this class on time.					
37	I know what I am trying to accomplish in this class.					
38	I pay attention during this class.					
39	I try to understand the work in this class.					
40	I know how much work I have to do.					
COOPERATION		Almost Never	Seldom	Some-times	Often	Almost Always
41	I cooperate with other students when doing assignment work.					
42	I share my books and resources with other students when doing assignments.					
43	When I work in groups in this class, there is teamwork.					
44	I work with other students on projects in this class.					
45	I learn from other students in this class.					
46	I work with other students in this class.					
47	I cooperate with other students on class activities.					
48	Students work with me to achieve class goals.					
EQUITY		Almost Never	Seldom	Some-times	Often	Almost Always

49	The teacher gives as much attention to my questions as to other students' questions.					
50	I get the same amount of help from the teacher, as do other students.					
51	I have the same amount of say in this class as other students.					
52	I am treated the same as other students in this class.					
53	I receive the same encouragement from the teacher as other students do.					
54	I get the same opportunity to contribute to class discussions as other students.					
55	My work receives as much praise as other students' work.					
56	I get the same opportunity to answer questions as other students.					