

*Full Length Research Paper*

# Students and teachers' perceptions on technology-enhanced Turkish language learning environment in Turkey

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The purpose of this study is to determine learners' and instructors' perceptions about technology-enhanced learning environment. This study uses both quantitative and qualitative methods. A Likert-scale survey was developed and administered to 48 Turkish language learners in various language courses in Istanbul to investigate their perceptions of using technology. Additionally, qualitative interview questions were used to investigate three Turkish instructors' perceptions about teaching with technology. Results showed that learners and instructors were comfortable with their learning Turkish using technologies and they can be used to enhance Turkish learning and teaching processes.

**Key words:** Learning environments, mixed method, technology-enhanced Turkish language.

## INTRODUCTION

Technology-enhanced learning has influenced the way that instructors teach and (Wang and Li, 2000). Technology-enhanced learning environments provide "interactive, complimentary instructors activities and learners' that enable individuals to address unique learning interests and enhanced learning environment needs, study multiple levels of complexity, and deepen

teachers and students' ward teaching perception and learning with technology.

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understanding" (Hannafin and Land, 1997, p. 167). In this paper, a technology-enhanced learning environment is **REVIEW OF LITERATURE**

defined as an instructional environment where the learning processes are assisted through computers (e.g. language learning software), the Internet (e.g. language learning web sites) or both.

There are a number of research studies that have found technology-enhanced language learning (TELL) curricula yield better learning outcomes (Chang, 2005; Goffe and Sosin, 2005); however, there are many unanswered questions about this newly developed field.

There are not many research studies addressing

The researcher reviewed the literature and found a number of studies that addressed issues such as interaction in the classroom (Greany, 2002; Hooper, 2003; Liaw and Huang, 2003), computer learning experiences and anxiety (Beckers and Schmidt, 2003; Chou, 2003; Namlu, 2003; Ware, 2004) and supports for technology implementation.

In addition, other issues that influence the effectiveness of technology such as social identities and strategies for computer learning anxieties will also be explored.

## Interaction in technology-enhanced learning

Technology-enhanced learning environments have been shown to be beneficial for learning across different fields (Goffe and Sosin, 2005). In addition, Hooper (2003) argued that effectiveness of technology should no longer be the focus of the current research. Hooper found that frequently and in-depth interaction is the critical factor in the technology-enhanced environment.

The importance of interaction is also supported by Vygotsky (1978). Vygotsky proposed the conception of Zone of Proximal Development (ZPD) and defined it as “the difference between the child’s of ‘learning developmental identities level’ as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 85). Applying and more distant compared with the concepts of ZPD, technology-enhanced environment provides the learners with chances of collaboration with other learners; however, it does not promise the learners positive interaction. Cummins (2005) has suggested that the interaction in a technology-enhanced learning environment between the educators and the students determines the success of language learning. Thus, the impact of the interaction patterns in a technology-enhanced learning environment cannot be ignored and overlooked. Moreover, Greany (2002) stated that the fluid of interaction in a technology-enhanced learning environment may actually facilitate or impede the efficiency and effectiveness of language learning in both ways if instructor-learners or learner-learner interaction is unequal. As a result, “interaction” plays a vital role in forming and shaping the premises of a successful language learning environment. However, the beneficial effects of technology will not occur by themselves because preparation and organization of the technology-enhanced lessons need to be well designed in order to reach the beneficial effects (Cakir, 2011; Kreijns et al., 2003).

Hooper (2003) argued that the quality and quantity of interaction are key factors in promoting interaction in a technology-enhanced learning classroom. He states that techniques for heterogeneous ability-oriented grouping will facilitate students’-enhanced classroom. Teachers who use technology as the medium of instruction must pay close attention to the grouping learners, so as to maximize the effectiveness of learning. Ware (2004) found that in a technology-enhanced learning environment, the overall learning atmosphere provides language learners with more time to produce the target language and it enables them to think more critically with interactions with their peers. However, Greany (2002) contended that unequal interaction does exist in the technology-driven classroom environment. In his study of learning Turkish language with technology, the results indicated that sometimes learners were too rushed in completing personal assignments on computers

so that they had less time for interacting with their peers or asking their instructors questions.

## Social identities and technology-enhanced learning

Case (2006), McKay and Wong (1996) and Pierce (1995), have all suggested that language learners hold different social identities across different learning contexts. In particular, Pierce stated that language learners may inhibit their desires from speaking the target languages in different social contexts. Thus, awareness and importance of language learning interaction under the technology-enhanced circumstances. Although research about technology-enhanced learning argue that this method can be more distant compared with traditional face-to-face interaction (Liaw and Huang, 2003), the power differential still needs to be taken into the consideration within the framework of technology-enhanced learning. Pierce (1995) found that the uneven power relations between non-native speakers and native speakers do exist and she suggested that the investigation of power relations is crucial in promoting and improving language learning results.

When implementing technology into the teaching processes, some students may be afraid or be reluctant to participate in the learning processes because they may feel they are not “legitimate” of online communication, Caplan and Turner (2005) indicated that verbal harassments or attacks from partners in online discussions may lead the learners to have negative perceptions about technology. Thus, this may restrain some “inferior learners with less developed Turkish skills, from participating in the technology-enhanced learning processes even though the social distance has been provided by technology.

## Anxiety in technology-enhanced learning

Even though technology-enhanced learning has been found to be an effective method in both learning and teaching (Hossain and Aydin, 2010), some side-effects such as computer anxiety cannot be ignored while considering implementing technologies into classrooms. Studies have shown that the fear or resistance, either for teachers or students, of using technology can be attributed to their previous computer learning and using experiences (Beckers and Schmidt, 2003; Celik, 2008; Chou, 2003; Hasan, 2004; Liaw and Huang, 2003; Namlu, 2003; Oreski and Simovic, 2012; Yang and Lester, 2003). Case (2006) drew on the learning theories from Piaget (1977) and identified three stages that are used to indicate common evolutions of general learning processes. These stages are (1) accommodation, (2) dissonance, and (3) assimilation. The

is the most critical stage of the process of technology implementation, because new patterns of teaching and learning methods may be challenging for those who are not familiar with the use of technology.

Consequently, Chang (2005) and Namlu have suggested the use of learning strategies to help learners regulate, monitor, and evaluate their learning process. They all found that learners will be less anxious and more positive towards technology-enhanced learning environment when they can refer to learning strategies for the problems that cause anxiety.

For example, Chang (2005) stated that most students feel vague about the time they waste when they study. She suggests that students can record their daily learning in a log so they can review and reflect their learning processes.

The results of her study suggest that this strategy can be incorporated into web-based instruction and increase the effectiveness of learning. In addition, Namlu (2003) found that the gaining of computer literacy and understanding of learning strategies would help language learners lower their learning anxiety level.

### Support in technology-enhanced learning

The issue of support for the incorporation of technology into classroom settings is also a crucial factor for technology-enhanced learning. (2003) study of the effect of learning strategies on computer anxiety indicated that even though teachers are willing to implement technologies into their classrooms, the lack of support from the administration may lead teachers and students to have negative perceptions about technology.

Yang and Chen (2006) found that support from the administrators including training programs on implementation of technology and technical support reduce the anxiety of integrating technology into learning process and yield achievements of technology-enhanced learning.

In addition, Clegg et al. (2000) stated that the common challenge that teachers often encounter in the technology-enhanced environment is that they do not have the necessary skills in developing online courses and delivering the course contents. Although this has been one of the course's aims, its ability to do so is seriously limited by the varied backgrounds and levels of previous online teaching experience amongst learners.

### METHOD

The purpose of this study is to investigate instructors and learners' perceptions about technology-enhanced (e.g. particularly computer-mediated or internet-based) learning by a survey developed by the researcher to investigate learners' technology perspectives-enhanced learning, and computer (quantitative anxiety (question design) and open-ended questions to interview teachers on technology-enhanced (qualitative design).

### Research questions

Although technology seems common and popular among Turkish language learners, it is not clear if students believe that the technology improves their learning. Thus, the research questions for quantitative are as follows:

1. What are the students' generally- p enhanced Turkish learning?
2. To what extent do students think that technology-enhanced classroom setting facilitates the process of learning Turkish?

Besides the inclusion of students'-enhanced Turkish learning, it is also crucial to underst perspectives about the role that technology in Turkish learning classrooms. In particular, what do teachers think about the effectiveness of teaching with technology and how to they address challenges such as interaction and learning anxiety during the teaching process? The qualitative questions are as following:

1. What are Turkish language teach towards technology-enhanced teaching?
2. How do Turkish language teachers help themselves and the students improve teaching and learning process with the help of technology when they have teaching anxiety?

### Setting and procedures

Forty-eight participants participated in this study. This study was conducted in a number Language Centers in Istanbul, Turkey. Most of the language centers are affiliated to private institutions and they provide intensive Turkish courses to help either the students from Resultsalloverthe worldfromtopprepare Namlu'stostudyatTurkish or others to improve their general Turkish language skills. Three Turkish instructors were recruited by e-mail. The researcher intended to include 2 males and 2 female instructors; however, only 3 (2 males and 1 female, aged  $M=34.6$ ) out of 8 Turkish instructors were willing to participate. In order to keep the confidentiality of the subjects, pseudonyms were used for the whole study.

### Data collection and analysis

For quantitative research, non-experimental descriptive design was used for this study because the main purpose was to describe students' perceptionsherelationshipbetweenabouttechnology and Turkish learning by showing the frequencies of each survey question. Data was collected by administering the technology-enhanced language learning (TELL) developed by Stepp-Greany (2002) and adopted by the researcher. The original in questionnaire contained 45 statements; however, after a pilot study was implemented in 2011, 17 questionnaires were developed by specifically for this study by the researcher. Demographic information such as preferable technologies, gender, the number of years of learning Turkish and years of using identified technology, was collected in item one through four. For items from five to seventeen, respondents were asked to rate the item on a Likert scale, ranging from 1. Strongly Agree, 2. Agree, 3. Just O.K., 4. Disagree, and 5. Strongly Disagree (Appendix A). These questions were used to investigate students'-enhanced learning environment in three categories: general perceptions towards technology and Turkish learning (5, 7, 8, 9, 10, 11, and 12), interaction (question 13 to 14), and support (15 to 17) 6). After the survey was developed and revised, the researcher sent

out e-mails that described the rationale and data collection procedures to all Turkish class instructors (a total of eight instructors) at five private language courses in Istanbul city. Owing to some personal or confidential reasons, only three instructors permitted the researcher to distribute the survey in 4 different classes. In order to maximize the rate and accuracy of response, visits at the onset of four different classes were made so the researcher could explain the rationale of conducting this project and help explain some concepts or vocabulary that the students did not understand. The researcher offered to provide free Turkish lessons so as to show his thankfulness towards the help of each subject and hoped that it would make the subjects be more spontaneous and be more willing to answer each item accurately. In each visit, approximately 10 to 15 min was taken to complete the survey in those four different classes. Fifty surveys were distributed to 4 different Turkish learning classes at the five different language courses in Istanbul, Turkey. Although the response rate was 100%, two surveys were deleted because of the consistent answers (one chose "Just O.K." and another chose language "Strongly learning, gender, Disagree" years of learning all Turkish the language and years of using specified technologies. The researcher also asked the respondents to identify their nationalities on the back of the survey. The sample consisted of 48 individuals (25 males and 23 females) from nine different countries, including Chile (n=2), China (n=11), Kazakhstan (n=2), Romania (n=6), Mongolia (n=17), Russia (n=4), and Turkmenistan (n=2), Azerbaijan (n=4).

Two items, item three and four, were deleted because they asked respondents to identify the number of years of learning Turkish and the years of using specific technologies.

Qualitative semi-structured interviews were adopted for this study because the main purpose was to investigate learners and

instructors' perceptions -from enhanced Turkey about technology learning environment.

The qualitative data was obtained from Turkish instructors at language courses. After got four expert opinion, the researcher developed 12 questions based on experts' suggestions and the findings of the literature review though more questions were added as clarifications need to be made (Appendix B) to interview those instructors though some thoughts and questions emerged throughout the processes. Interview sheet was presented to the interviewee so as to assure that they did not misunderstand the questions designed by the researcher. These questions serve as further explanations of people's (instructors) about technology-enhanced learning environment.

Appointments were made with each teacher and the researcher visited their offices at their office hours. The total amount of time spent for the three interviews was approximately an hour and forty minutes. Follow-up questions were asked and clarified from each participant through e-mails for one or two times when the researcher found some responses confusing or off the themes. For analysis, data were collected, summarized and coded by survey and interview. The quantitative data include the results of a survey. The survey data are measured by Likert five-point scale, and rated from 1 to 5 points according to the degree of difference. After the data was collected it was analyzed by using MS Excel spreadsheet entitled *Frequency Stat* developed by Researcher. The qualitative analysis is carried out according to Patton (1990): (1) gather all the original data; (2) organize, categorize and edit the original data into files that can be easily identified and acquired; and (3) summarize and identify important indexes for in-depth analysis according to study problems and types.

## RESULTS

### Quantitative results

Years of learning Turkish and the use of marked technologies were asked to investigate the relationship between the positive feelings and learning Turkish with technologies, but it was obvious that many subjects mis-

interpreted the two questions. The accurate interpretation of the question should be the total duration of the participant's exposure of Turkish that she marks. Nevertheless, many subjects misunderstood the two questions and the answers varied a lot even though they were from the similar background. For example, the answers to the total year of learning Turkish for the Mongolian students could be one year or more than eight years though they all received Turkish education from junior high school in Mongolia. Therefore, it would not be accurate to include the data so the researcher decided to delete these two items in this study and did not analyze them.

In the questionnaire, demographic information, from item one to four, included preferred technologies with Turkish language and years of using specified technologies. The researcher also asked the respondents to identify their nationalities on the back of the survey. The sample consisted of 48 individuals (25 males and 23 females) from nine different countries, including Chile (n=2), China (n=11), Kazakhstan (n=2), Romania (n=6), Mongolia (n=17), Russia (n=4), and Turkmenistan (n=2), Azerbaijan (n=4).

Examination of the demographic information in item one shows that the five most popular learning methods include the Internet, computers, cassettes/VCDs/DVDs/VCR, TVs, and electronic dictionaries.

Respondents were asked to rate each item as either 1. Strongly Agree, 2. Agree, 3. Just O.K., 4. Disagree, or 5. Strongly Disagree, from item five to seventeen. Three perceptions (either students or teachers) were designed to investigate Turkish language learners' perception technology-enhanced language learning, interaction and support in technology-enhanced learning, and anxiety in technology-enhanced learning. The frequency of each item, number of respondents, mean, and standard deviation were described in Table 1.

The data on general perceptions about technology are contained in Table 1. The results suggest that generally respondents have positive perceptions about learning Turkish with technologies. Particularly, question five asked respondents to rate the level of comfort when learning Turkish with technologies. The mean of 1.67 of this question suggests that respondents are very comfortable with the assistance of technologies while learning Turkish. Questions seven asked respondents to rate whether gender is a big barrier for learning Turkish with technologies. The mean of 3.17 of this question suggests that most respondents have neutral attitude. Question eight asked respondents whether technology-enhanced communication is better than face-to-face communication. No preference was shown from the results in this question and it suggested that both face-to-face and technology-enhanced were necessary. In questions 9 to 12, the means shows that technologies play an important role in enhanc

**Table 1.** General perceptions about technology-enhanced Turkish language learning.

Survey questions	Strongly Agree	Agree	Just OK.	Disagree	Strongly Disagree	N	Mean	SD
5. I think I like using technologies (e.g. computers and the Internet) in general.	23	18	7	0	0	48	1.67	0.72
7. I think generally boys are better at using technologies than girls.	6	10	8	18	6	48	3.17	2.16
8. I think technologies help me interact and communicate with others better than face-to-face interaction	2	15	12	14	5	48	3.10	1.10
9. I think I can better understand the cultures of other countries (e.g. Turkey) with the help of technology.	6	20	20	1	1	48	2.40	0.82
10. I think I prefer learning Turkish with technologies than traditional learning ways (e.g. pens and paper)	7	16	13	10	1	*47	2.62	1.05
11. I think Turkish teachers who teach with technologies are better teachers.	4	13	21	6	4	48	2.85	1.03
12. I think Turkish language learners who learn with technologies are better learners.	4	12	21	8	3	48	2.88	1.00

\* missing data.

processes since most of them agreed that technologies help them learn Turkish.

The results for question 13 to 14 suggest that generally technologies help respondents communicate with their teachers and peers. More importantly, the results for questions 15 to 17 show that support from different sources (e.g. teachers, schools, and peers) were considered crucial in the process of Turkish learning with technologies. The means, frequency distributions, and standard deviation for the items that focused on interactions in teaching are contained in Table 2.

Question six in Table 3 asked respondents to rate the anxiety level when the respondents learn Turkish in the technology-enhanced environment. Results show that generally the subjects are comfortable with technology and their anxiety level is not high in the technology-enhanced language learning environment.

### Qualitative results

A typed interview sheet (Appendix B) contained 12 questions regarding the 3 themes, including general perceptions about technologies, interaction in the technology-enhanced learning environment, computer anxiety and support for Turkish learning with technology, were tied to the themes identified from the literature review and was used to investigate the 3 Turkish instructors' teaching Turkish can only for be used over to complement 20 or years enhance the and learning the student populations, perceptions about technology-enhanced learning.

### General perceptions

To ensure the safety and well-being of the participants, all data were gathered from participant resources collected with explicit permission from the participants and in full compliance with Institutional Review Board (IRB) guidelines and Yildiz Technical University research study requirements and approvals. Throughout the ethical concerns of participant anonymity accompany research studies, careful attention have been given to protecting the participants' identities. names kept confidential, and each participant assigned a pseudonym name. Based on the three individual interviews from the subjects, findings have suggested that they are very comfortable with technologies themselves. Both Mr. Murat (pseudonym) and Mr. Burhan have rich experiences with computers and other technologies. In particular, participant A has much expertise in the field of computer assisted language learning (CALL). Although Mrs. Leyla did not use lots of technology while teaching Turkish, she said that she is always positive about taking risks whenever she has the chances of teaching Turkish with technologies. All three subjects were willing to incorporate technologies into their teaching processes if resources are available. However, although technology can be a more fascinating way for learning Turkish than traditional learning method, as participant C said, all subjects agreed that technologies process but it cannot substitute the teachers. Participant B stated got "...the You've machine, and

**Table 2.** Interaction in technology-enhanced Turkish learning.

Survey questions	Strongly Agree	Agree	Just OK.	Disagree	Strongly Disagree	N	Mean	SD
13. I think I can learn Turkish better if I can use technologies to communicate with my teachers.	6	21	12	6	3	48	2.56	1.07
14. I think I can learn Turkish better if I can use technologies to communicate with my classmates.	7	17	16	6	2	48	2.56	1.03
15. I think I can learn Turkish better if I can get support from my teacher with technologies (e.g. answering my questions by e-mail or online chatting).	6	19	18	1	2	48	2.43	0.91
16. I think I can learn Turkish better if I can get support from my classmates with technologies (e.g. answering my questions by e-mail or online chatting).	6	22	13	5	2	48	2.48	0.99
17. I think I can learn Turkish better if I can get support from my school with technologies (e.g. someone who can answer my questions about technologies if I need to use them to learn Turkish, such as online journal articles).	5	28	14	0	1	48	2.25	0.73

**Table 3.** Anxiety in technology-enhanced Turkish learning.

Survey questions	Strongly Agree	Agree	Just OK.	Disagree	Strongly Disagree	N	Mean	SD
6. I think I feel more comfortable when I use technologies to help me learn things, such as learning Turkish.	19	23	5	1	0	48	1.75	0.73

you've got the human being. enhanced You Turkish need learning both!" environment participant. Participant C also pointed out that "...I stated think that the interaction they issue are is the main fine weakness... and of I think they (technologies) are good as far tools go. They a technology-enhanced learning environment. She also can't substitute books..." In said addition, that traditional learning participant can solve this problem since C stat that "I don't think it's (technology) the teacher can guide better than the students [than traditional learning method] because it's learn something not to maintain communicative the equal chances of. A machine cannot respond in the way that human beings participating in the learning processes. Participant A also will respond... people are always said that better technologies, the ways Internet as to an example, learn can." In summary, all the teachers agreed that technologies can help the language learners gather a lot of information but be great tools to enhance Turkish teaching and learning the problem is that oftentimes students do not cooperate processes and raise students' with each other interest to coordinate the information learning they have obtained. Like participant C, participant A tries to assign different responsibilities to each student and they have to share their findings so as to make the obtained information organized. In addition, participant B stated that a teacher should always pay attention to the dynamics of student interaction whether it is traditional or technology-enhanced learning setting and he always tries to adjust or rearrange the interaction. In summary, unequal interaction may occur in either traditional or technology-enhanced Turkish, a human being or face-to-face communication is still needed in the language learning classrooms.

### Interaction in the technology-enhanced learning environment

Question nine was designed to investigate the subjects' perceptions about the interaction in a technology-

may occur in either traditional or technology-enhanced

learning settings and teachers should play the role as the monitor to modify the flow of interaction either between the instructor and the learner or the interaction among the learners.

### Computer anxiety and support

Although Beckers and Schmidt (2003) have suggested that anxiety does exist when students use technology in their learning, participant B does not regard anxiety as a problem in a technology-enhanced teaching and learning processes because he said that "...if you show them how...and walk them through...It's science...In my experiences, technologies is not a big factor at all." In other words, long as the support is provided Participant C also said that;

**"...technology can cause anxiety for both learners and teachers if they don't understand the technology well...**I prepare and practice with the technology that she intends to incorporate to anxiety on teaching days. I also try to get to class early so that I am set up when students arrive — this isn't methodologies always of this possible, but I try. Also, I try to do a session with students

when they're acting, "just" not being

they won't be anxious when they are being tested."

Thus, both participant B and participant C are quite comfortable with using technologies because they think anxiety can be reduced if the teaching or learning processes are well-guided and well-prepared. In addition, participant A also said that anxiety will certainly be raised if he is not familiar with the technologies he will use to teach. He suggested that a teacher can seek for help from their coworkers and they should keep the anxiety level very low so both the teachers and the learners will not be frustrated during the course of teaching and learning Turkish. In summary, perhaps inevitably anxiety will occur, either for teachers or students, while adopting new method for teaching and learning processes, teachers should try to be familiar with the technologies that they intend to use in their teaching and try to create a atmosphere that best help the students lower their learning anxiety to achieve the best and the desired learning outcomes.

### DISCUSSION

Findings from the quantitative survey and qualitative interviews suggest that both Turkish language learners and teachers are comfortable with technologies in the processes of learning and teaching. In particular, the

Turkish language learners participated the study felt comfortable and confident when they learn Turkish with technologies. Although the data from the findings did not significantly show that technology-enhanced Turkish learning environment is superior to traditional learning methods, the subjects, either the Turkish language learners or instructors, are willing to embrace different ways, such as technology, to support and enhance their learning and teaching processes.

### Current study and replicated study

The research article that the researcher replicated was not a rocket anxiety in using entitled *Student perceptions on language learning in a*

*technological environment: Implications for the new*

*millennium* written by Greany (2002). The similarities of these two studies include the quantitative questionnaire investigating students' perceptions of enhanced language learning environment and effects on students' language learning process. was added to examine Turkish

herabout teaching throes of technologies so in the process won't of Turkish feel learning. In addition, the overall study design and

study, such as nonexperimental descriptive design, sampling techniques, and technology use, are quite different from the replicated study. Quasi-experimental method was used in the replicated study

and the author recruited a large number of samples from the undergraduate students while there were only 50 respondents from the Intensive Turkish Language Center in this study. Besides, the author of the replicated study administered a survey after the participants completed the Turkish language learning with technologies whereas the researcher simply distributed surveys and investigated the participants' perception with technologies.

### Limitations

In this study, convenience sampling strategy was used and the size of quantitative subjects contained only 48 people. Besides, Turkish proficiency of the subjects was a confounding variable since most of the subjects attended the Turkish classes to improve their general Turkish abilities. Even though the researcher tried to design the survey with simple sentences and expressions and told the subjects that they could ask for any clarifications if they did not understand the questions, only a few subjects asked some questions. Some of the subjects may not have understood the real meaning of the questions but they still answered the questions according to their own interpretations. The results thus cannot be greatly generalized because of the sampling strategy and language issues. Researchers in the future

should solve this problem by cooperating with other researchers who are proficient in other languages to translate the survey into the native languages of the subjects. Alternatively, the researcher could select subjects from certain nation (e.g. Russian students).

For qualitative study, the results might be biased since there were only three subjects were recruited in this study. Besides, the researcher only interviewed each subject once or one to two times of follow-up e-mail interviews; therefore, they might not have had enough time and opportunities to express their real perceptions about technology-enhanced learning and teaching.

Although the major 3 issues (interaction, computer anxiety, and supports) and other variables like social identities and strategies for dealing computer anxiety in this paper were discussed, more research about the impacts on technology-enhanced second language learning should be explored so second language educators can evaluate the pros and cons under the technology-enhanced learning environment. The duration of Turkish learning experiences, the duration of technological experiences, and gender were included in the survey to investigate learners and teachers' those variables influence their perceptions about technology-enhanced Turkish learning. Nevertheless, the unequal number of males and females and the misinterpretations of the impossible for the researcher to analyze the relationships between their perceptions and the variables. Most importantly, the biggest limitation of this study is the time limits. If the researcher had more time to review more literature and design the research methodologies, the researcher would use quasi-experimental method to conduct this research project. In quantitative section, a pre-test of general Turkish abilities (listening, speaking, reading, and writing) would be administered to subjects in the control and the treatment group. The Internet (second language) and computers (learning software) would be used as the tools to facilitate student's Turkish learning in the treatment group while textbooks and drills would be used to improve students' abilities in the control group. After four to five weeks, or ideally after a semester, a post-test would be given to examine the differences between technology-enhanced learning and more traditional learning settings. By doing so, the result would indicate whether technology should be broadly used to enhance second language (especially Turkish in the future research) learning. In qualitative part, the researcher would first identify those who use technology in their teaching and those who prefer traditional teaching methods. Interview questions will be more focused on their rationales that why they prefer technology-enhanced or traditional teaching methods. Similarly, the researcher would also design literature-based questions to examine the instructors' views during the perspective of four to five or the whole semester. Throughout the findings, it can be

concluded that more planning, training and sufficient supports, program evaluation need to be provided before, during, and after the technological implementation. For example, Ms. Leyla stated her concerns about over dependence on technology, "A in the way that human beings always better ways to learn." but they cannot be the focus of the process of language teaching and learning. Instead, they should be tools to enhance the processes. Most importantly, we need to prepare the teachers with necessary skills and knowledge to teach Turkish with technologies. Otherwise, it will simply be a lesson with random combinations of anxious teachers, goalless students, and a bunch of machines.

## Conclusion

In the literature and the findings of this study it was suggested that technology can be used to enhance the process of second language learning and generally the respondents' perceptions in this study whether felt positive about the integration of technology in their learning and teaching. For this study, the results have suggested that Asian students are comfortable and positive with learning Turkish definition with technology since of 80% "duration" of the Turkish language made learners are from Asian countries. Therefore, it seems possible and feasible to promote Turkish learning with technology in some Asian countries. However, the three qualitative teachers all were concerned about presence of teachers in language learning classrooms to guide and help student learn Turkish. They all agreed that technology cannot be used to substitute teachers but only to enhance the teaching and learning processes.

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## Appendix A. Self-developed survey for quantitative research

### 1. Check the different types of technology that you use for Turkish learning. Mark all that are applicable.

☐ Computer    ☐ Electronic dictionary    ☐ TVs  
☐ Telephone    ☐ Cassettes/VCDs/DVDs/VCR    ☐ Radios  
☐ Webcams    ☐ The Internet  
☐ Other \_\_\_\_\_ (Please specify)

2. Sex: Male\_\_\_/ Female\_\_\_

3. Year of learning Turkish: \_\_\_years (the total years of Turkish learning experiences)

4. Years of using technologies: \_\_\_years (the total years of using the technologies you mark)

5. I think I like using technologies (e.g. computers and the Internet) in general.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

6. I think I feel more comfortable when I use technologies to help me learn things, such as learning Turkish.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

7. I think generally boys are better at using technologies than girls.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

8. I think technologies help me interact and communicate with others better than face-to-face interaction.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

9. I think I can better understand the cultures of other countries (e.g. Turkey) with the help of technology.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

10. I think I prefer learning Turkish with technologies than traditional learning ways (e.g. pens and paper).

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

11. I think Turkish teachers who teach with technologies are better teachers.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

12. I think Turkish learners who learn with technologies are better learners.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

13. I think I can learn Turkish better if I can use technologies to communicate with my teachers.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

14. I think I can learn Turkish better if I can use technologies to communicate with my classmates.

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

15. I think I can learn Turkish better if I can get supports from my teacher with technologies (e.g. answering my questions by e-mail or online chatting).

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

16. I think I can learn Turkish better if I can get supports from my classmates with technologies (e.g. answering my questions by e-mail or online chatting).

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

17. I think I can learn Turkish better if I can get supports from my school with technologies (e.g. someone who can answer my questions about technologies if I need to use them to learn Turkish, such as online journal articles).

1. Strongly Agree    2. Agree    3. Just O.K.    4. Disagree    5. Strongly Disagree

## Appendix B. Quantitative interview questions for IELC teachers.

Basic Info: How many years have you been teaching Turkish? What are your student populations? (e.g. foreigners or native speakers)

1. Have you heard of the idea of technology-enhanced language teaching and learning? What are your perceptions about the teaching and learning methods? In your opinion, what are the strengths and weaknesses?
2. Some studies have suggested that technology-enhanced teaching or learning is better than traditional language teaching? Why or why not?
3. Have you used technology to support and promote your teaching? If yes, in what ways? If no, please explain.
4. (for YES person) What are the best or better ways to demonstrate your teaching contents and meanwhile improve learners' Turkish in the technology-enabled classrooms? And what makes you the advocate of those teaching strategies or methodologies?
5. (for NO person) What are the major reasons for you not to include technology in the teaching process? Can you explain?
6. If you are asked to integrate technologies into your teaching processes, what are the benefits and risks that a technology-enhanced learning environment might have on your learning process?
7. How do you implement technology into your teaching process? What are the general outcomes? Have you attended any training programs?
8. Some people think technology-enhanced teaching and learning is a both time-consuming (preparation for lessons) and costly (equipment and software) process. What do you think of this statement?
9. What are the roles of language teacher and students in the technology-enhanced learning environment? How are they different from that of the traditional classroom settings?
10. Does technology-enhanced teaching make the learning process more learner-centered? What are your beliefs about teacher-led and learner-focused learning with the help of technology?
11. Asymmetrical distribution of interaction in technology-enhanced learning environment has been reported in research studies. What do you think of this issue? Do you have any comments or suggestions?
12. Do you think that technology-enhanced language learning can cause teaching or learning anxiety? If yes, how so? If not, please explain.
13. Do you think teachers who use technologies are better teachers? Do you think learners who use technologies to learn Turkish are better learners? Why or why not?
14. **Do you think that technology-enhanced language learning can cause teaching or learning anxiety? If yes, how so? If not, please explain. And what do you do when you are having anxiety of implementing technologies into your teaching and students' learning processes?**