

The Relationship between High School Students' Perceptual Language Learning Style and Their Attitudes towards Computer-Assisted Language Learning

Abstract

The present study investigated the relationship between perceptual learning style and Iranian EFL secondary school students' attitudes toward Computer Assisted Language Learning. To fulfill the objectives of the study, the researcher used two intact classes (40-second grade secondary school students) at Farzanegan secondary school in Eslamabad, Kermanshah. The participants were requested to complete the PLSPQ to measure their preferred learning style. The participants responded to the items of another questionnaire that measured their attitudes toward CALL. The results of this study revealed that Iranian secondary school EFL learners' preferred perceptual learning style is visual. The findings also demonstrated that among different perceptual learning styles, the only one, which has a significant correlation with learners' attitudes toward CALL, is the kinesthetic learning style. In other words, a learner whose preferred learning style is an individual has more positive attitudes toward CALL than learners with other types of learning styles do. The results indicated that there is not a significant correlation between perceptual learning styles and attitudes toward CALL.

Keywords:: *Perceptual language learning style, Computer-assisted language learning, EFL learners*

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Introduction

Today, using a computer is considered a revolutionary that affects all areas of human life. All the people around the world continue to have much more interaction with computers. Using a computer has some effects on all aspects of life. Along with the development of computer technology, much greater attention is paid to educational technologies in teaching and learning. and countries all around the world use a computer in their educational programs. Among developments in using computers and new technologies in education, teaching foreign language through computers is considered a major reform, Batty (2003) defined computer-assisted language learning (CALL) as "any process in which a learner uses a computer and, as a result, improves his or her language" (p.7).

In fact, modern technology brings about noticeable changes in language courses (Xiong, 2008; Zhao & Liu, 2011). Accordingly, in this age of technology, using computers in education, especially in language teaching and learning is an effective way to help learners improve their language proficiency.

According to Talebinezhad and Abarghoi (2013), researchers believe that CALL is in accordance with students' requirements as it supplies functional and practical information. There are advantages to using computers in language learning. The first advantage is a stress-free environment and a more relaxed atmosphere compared with traditional classrooms (Talebinezhad & Abarghoi, 2013). Moreover, by using a computer, students can rely on their own knowledge and, as a result, can become autonomous.

EFL Learners and teachers have different attitudes toward CALL. These attitudes are dependent on certain personal features. Some learners like to work with computers as an educational tool, but others do not. One of the features, which is related to personal differences, is perceptual language learning style.

Claxton and Murrell (1987) believe that learning is the most important issue in education. It is also true that people learn and comprehend information in different ways. Educators have for many years noticed that several learners prefer certain ways of learning over others. Other learners prefer to see and others like to listen, Some prefer to learn individually, independent of others, while others enjoy interaction and relations with their peers (Riazi & Riasati, 2007). These ways of learning are referred to as learning styles, which are students' unique learning preferences. Learning styles are those personal characteristics that are different from person to person and can be defined as "the overall patterns that give general direction to learning behavior" (Cornett, 1983, p. 9). Some researchers in the field of second language learning agree that learning style affects the rate and the degree of success in second language learning (Williams & Burden, 1997).

Literature Review *Learning Style*

Brown (1994) defines learning style as "a consistent and rather enduring tendency or preference within an individual and styles as those general characteristics of intellectual functioning (and personality types as well) that especially pertain to one as an individual that differentiates one from someone else" (cited in Li, 2011, p. 1780).

Cross (1976) believes that learning styles are the characteristic ways that learners utilize to collect, organize, and transform information into useful knowledge.

Many researchers have focused on the importance of identifying preferred learning styles. Claxton and Ralston (1978) pointed to this crucial issue and they alluded that the results of research on learning styles bring pedagogical implications for teachers, counselors, and students regarding finding better ways for students to learn a language.

Identifying and explaining different kinds of learning styles can become an enormous task. Corbett and Smith (1984) believe that learning style is a complex construction involving the interplay of different elements: therefore, at the outset, the experimenter is faced with the difficult task of having to decide which dimensions of learning style to clarify and which interactions might be meaningful, in a practical sense, in understanding their contribution to achievement.

Reid (1995) classifies learning styles into three categories: sensory learning styles, cognitive learning styles, and affective/temperament learning styles. Sensory learning styles encompass two subcategories, perceptual Learning styles, and environmental learning styles. Perceptual learning styles include auditory, visual, tactile, and kinesthetic learning styles, Physical and sociological learning styles are subcategories of environmental learning styles. Cognitive styles encompass four different types: field independent/field-dependent, analytical/global, reflective/impulsive, and Kolb experiential learning styles, tolerance of ambiguity styles, and temperament styles. Auditory, visual, tactile, and kinesthetic are subcategories of perceptual learning styles, which is a subcategory of sensory learning styles.

Much research has been conducted to investigate EFL learners' preferred language learning styles from different perspectives. For example, Obralic and Akbarov (2012) conducted a study to determine the learning styles of students at the International University of Sarajevo. The participants of this study were 34 students. To determine the perceptual learning style of ELS learners, the researcher used PLSPQ. Learning styles were assessed according to students' nationality. Accordingly, the ethnic composition of the sample was an important factor in this study. Moreover, the difference between male and female learners regarding their style preferences was investigated. The study suggested elements that teachers should consider in relation to students' preferred language learning style preferences and their cultural features to get the learning environment and achieve knowledge.

In the same vein, Yaseri, Razavi, and Jayervand (2013) conducted research to determine the Iranian ESL learners' intelligence and perceptual learning styles in English language learning. The subjects of this study were 60 Iranian M.A. learners, majoring in Teaching English as a Foreign Language

(TEFL) at Islamic Azad University, Najafabad Branch, who were randomly selected. The researchers used Oxford Quick Placement Test to ensure the homogeneity of the participants' proficiency level and the Perceptual Learning Style Preference Questionnaire, developed by Reid to investigate the learners' preferred learning styles based on their perceptions and social aspects of learning. Then, the Multiple Intelligences Inventory was employed. The results of data analysis revealed that most of the learners preferred kinesthetic learning style while a few numbers chose individual learning style. In addition, the participants of this study used linguistic intelligence more than other pieces of intelligence and they used musical instrument intelligence less than other forms of intelligence.

Computer Assisted Language Learning (CALL)

Many researchers believed that computer technology is an appropriate tool to improve learners' language learning. Warschauer (1996) asserted that computers help learners to learn English in three ways: "computer as a tutor (offers to tutor to students), computer as stimulus (improves synthetic and analytic thinking of students), and computer as a tool (e.g. grammar checking, word processing, collaborative writing, and Internet)" (cited in Afshari et al.,2013, p. 853). Beatty (2003) defined CALL as "any process in which a learner uses a computer and, as a result, improves his or her language" (p.7).

CALL as a field of research has received considerable attention over the past few years, and several studies have been done to identify the characteristics and limitations of research in this field (Stockwell, 2007). The learner is first presented with a rule and some examples then answer a series of questions, which test her or his knowledge of the rule and the computer, gives appropriate feedback, and awards a mark, which may be stored for later inspection for the teacher (Gunduz, 2005).

Levy (1998) asserts that CALL is considered a tool with the teachers energetically and naturally participating in the learning process. Healey (1999) argues that the effect of technology can just drop learners into the middle of a large library. Warschauer, Shetzer, and Meloni (2000) agree with this idea and argue that as students cannot learn simply by being present in a classroom, neither can they learn by being sat down in front of a networked computer.

Brown (1997) listed the advantages of CALL as giving immediate feedback, allowing students to work at their own pace, and causing less frustration among students. Winter (2002) stressed the importance of flexible learning, learning anywhere, anytime, anyhow, anything you want, which is very true for web-based instruction and CALL.

According to Garcia and Arias (2000), using CALL in a classroom has the following advantages: Increased motivation of the students, individualization of the learning process, immediate feedback, non-linear access to the information, and

the introduction of new exercise types in the classroom. The use of CALL in and out of the classroom makes new opportunities to promote language learning by increasing learners' skills in reading, writing, listening, and speaking along with grammar, vocabulary knowledge, and pronunciation.

CALL has been the focus of various studies in recent years. Nobar and Ahangari (2012), for example, explored the effect of CALL on improving Iranian EFL learners' task-based listening as a motivating device to enhance the formation of positive attitudes. The participants of this study were 40 EFL learners. The subjects were taking the two-credit conversation course and made two intact classes, randomly classified into experimental, and control groups. During the treatment that was based on CALL, each student in the experimental group had access to a computer in the English lab. They also received extra task-based listening comprehension materials and activities along with some comprehension questions three times a week through their e-mails. The results of data analysis of the post-test listening comprehension scores showed that there were considerable differences between the two groups and the participants of the experimental group had better performance than the participants of the control group. The results also revealed that the participants of the experimental group have higher levels of motivation than the participants of the control group.

In the same vein, Afshari et al. (2013) conducted research to test the learners' attitudes about using CALL. The participants of this study were 100 students. The findings of this study revealed that students had moderate attitudes towards CALL. Moreover, study results indicated that there were some significant predictors of attitudes toward computers such as perceived usefulness, perceived ease of use, and subjective norms,

Research Questions

What are Iranian secondary school students' attitudes toward CALL?

What is Iranian secondary school students' preferred perceptual language learning style?

Is there any significant relationship between secondary school students' perceptual language learning style and their attitudes towards CALL?

Research Hypotheses

There is not any significant relationship between language learning style and attitudes towards CALL.

Method Participants

A total of 40 Iranian second-grade secondary female students participated in this study. The researcher used two intact classes of students at Farzanegan secondary school in Eslamabad, Kermanshah. The participants were EFL learners

and all of them were native speakers of Kurdish. The age range of the participants was 13 to 14. The researcher chose these students as the participants of the study because she always uses computers and Khate sefid prospect plus CDs to teach them. Therefore, the students were completely familiar with CALL. The researcher used available sampling in this study.

Instrument

To gather data, this study used two questionnaires as data collection instruments. As O'Maley and Chamot (1990) asserted compared with other instruments for data collection, questionnaires can be considered a conceivable and effective way of data gathering. Therefore, two close questionnaires were used as the instruments of this study: PLSPQ and the CALL questionnaire.

Reid (1987) developed the PLSPQ and it is particularly used for learners of foreign languages. It was used to assess the preferred learning styles of the students based on how they learn best using their perceptions: visual, auditory, kinesthetic, and tactile preferences, and two social aspects of learning: group and individual preferences.

There are several reasons for choosing this questionnaire as the research instrument; It was used because it was easy to use and interpret, it was relatively quick to administer and complete, it had easily reportable scales, and Reid (1987) has reported its reliability and validity in his study. PLSPQ consists of 30 self-report questions. The researcher expects the participants to indicate how much they agree with each item on a scale from 1 to 5 when they learn English.

To gather data on students' attitudes toward CALL, the researchers used the CALL questionnaire that was developed by Talebinezhad and Abarghoui (2013). This questionnaire includes three parts. The first part was used to gather background information about the participants, their gender, age, schooling grade, location, and some others including how often they use a computer or whether they have passed a computer educational course or not. The second part assesses students' level of computer accessibility and their familiarity with computers. In this part, the variable of accessibility was directed to the first five questions and the second five referred to the variable of familiarity. The third Section comprises fifteen questions concerning their general attitudes towards CALL. The questionnaire includes Likert-scale items (sections 2 and 3) asking the participants to choose the item that expressed their ideas, opinions, and attitudes towards integrating computer technology in language learning best,

Data Collection

This study is ex post facto in design and is a quantitative correlational study. It was an attempt to find out how students learn English and which perceptual language style they

prefer for language learning. The other aim of this study was to find the students' level of familiarity with computers and computers used to learn English and investigated their attitudes toward CALL, too. To attain the purpose of the study, the researcher and the participants took the following steps:

At first, the researcher selected 40-second grade secondary school female students at Farzanegan secondary school, Eslamabad. Kermanshah. randomly to participate in this study. Then the researcher did a pilot study and asked some of the randomly selected participants to answer the questionnaires to find out if any misunderstanding arises.

After doing the pilot study, the researcher started the remaining stages of the research. First, the researcher asked the participants to answer PLSPQ. The researcher asked the participants to indicate how much they agree with each item on a scale from 1 to 5 when they learn English. Then the researcher computed the score of the questionnaire by adding

Table 1

One-Sample Kolmogorov-Smirnov Test for PLSPQ and CALL Questionnaire

		Visual	Tactic	Auditory	Group	Kinesthetic	Individual	CALL
N		40	40	40	40	40	40	40
Normal parameters	Mean	28.60	31.90	28.00	29.40	27.20	26.70	73.70
	Std. Deviation	4.48	5.43	5.62	6.78	6.08	6.63	5.70
Most Extreme Differences	Absolute	.172	.113	.157	.187	.128	.142	.133
	Positive	.128	.113	.157	.187	.128	.122	.060
	Negative	-.172	-.100	-.139	-.101	-.127	-.142	-.133
Kolmogorov-Smirnov Z		1.091	.717	.994	1.18	.810	.898	.840
Asymp. sig. (2-tailed)		.185	.683	.277	.122	.528	.395	.481

a-test distribution is Normal

The above table shows the results of the one-sample Kolmogorov-Smirnov test. The results showed that the data of all of the tests are normal, because for all of the variables sig>0.05, Accordingly, it is possible to use parametric tests to analyze data.

Table 2

Descriptive Statistics of CALL of the Participants of the Study

		familiarity	attitudes
N	Valid	40	40
	Missing	0	0
	Mean	2.01	1.57
	Std, Deviation	.26	.29
	Minimum	1.40	2.93
	Maximum	2.60	4.20

The average score of each item of the questionnaire is 3.00 and as it is clear from the above table, the mean score of learners' familiarity with a computer is less than average, Since the first 10 items of the questionnaire are negative statements, and most

the score of each question and multiplying it by two as was mentioned in the original version of the questionnaire.

4, In the same session of the class, the participants answered the other questionnaire to measure their attitudes toward CALL. Then, the researcher computed the scores. The results were analyzed using SPSS 21.00 software.

Data Analysis

In the first step, the researcher investigated the normality of the data using the one-sample Kolmogorov-Smirnov test. Then a set of descriptive statistics were performed. Then

A Parametric Pearson Correlation test was used to analyze the data and to find any correlation between students' preferred language learning style and their attitudes toward CALL. The researcher used one sample *t*-test to analyze data too.

Examining the Normality of Data

To investigate Students' attitudes toward CALL, a set of descriptive statistics have been performed.

of their answers were strongly disagree and disagree, the results indicated that they have positive attitudes regarding these items of the questionnaire. Moreover, since the mean score of learners' attitudes toward CALL is more than average,

it could be concluded that the participants of this study had positive attitudes towards CALL.

T-test Analysis

Table 3
One Sample Test of Learners' Familiarity with Computer

	Test Value=3			Mean Difference	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)		Lower	Upper
Familiarity with computer	-23.542	39	.000	-.98500	-1.0696	-.9004

The above table shows that based on the obtained *t*- value, df = 39, and sig<0.01. Accordingly, it could be concluded that the learners' familiarity with a computer is significantly lower than

the average. The next table shows the results of the t-test of learners' attitudes toward CALL.

Table 4
One Sample Test of Learners' Attitudes Toward CALL

	Test Value=3			Mean Difference	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)		Lower	Upper
Learners' attitude toward CALL	12.10	39	.000	.57	.4748	.6652

The above table shows that based on the obtained *t*- value, df = 39, and sig<0.01. Accordingly, It could be concluded that the learners' attitudes towards CALL are significantly higher than the average. Therefore, the results revealed that learners had positive attitudes toward CALL.

To find students' preferred perceptual language learning style a set of descriptive was performed. The next table shows the descriptive statistics of perceptual language learning style.

Table 5
Descriptive Statistics of Perceptual Learning Styles

	N	Minimum	Maximum	Mean	Std. Deviation
tactile	40	20.00	38.00	28.60	4,48
visual	40	22.00	42.00	31.90	5,43
auditory	40	20.00	38.00	28.00	5,62
group	40	20.00	44.00	29.40	6,78
kinesthetic	40	16.00	40.00	27.20	6,08
individual	40	12.00	44.00	26.70	6,63
Valid N (listwise)	40				

The above table demonstrated that the mean score for the visual learning style (31.90) is higher than other styles. To investigate the relationship between secondary school students' perceptual language learning style and their attitudes

towards CALL Pearson Correlation test was used. The result of this test is reported in the following table.

Table 6

Pearson Correlation Test of Perceptual Learning Style and Attitudes toward CALL

		CALL
Visual	Pearson Correlation	-.221
	Sig. (2-tailed)	.170
	N	40
Tactile	Pearson Correlation	.040
	Sig. (2-tailed)	.805
	N	40
Auditory	Pearson Correlation	-.218
	Sig. (2-tailed)	.177
	N	40
Group	Pearson Correlation	.191
	Sig. (2-tailed)	.237
	N	40
Kinesthetic	Pearson Correlation	.338
	Sig. (2-tailed)	.033
	N	40
individual	Pearson Correlation	-.133
	Sig. (2-tailed)	.415
	N	40

As it is obvious from this table, the correlation between the visual, group, individual, auditory, and tactile styles and CALL is not significant ($\text{sig} > 0.05$). Therefore, there is not any significant correlation between these five learning styles and EFL learners' attitudes toward CALL. In other words, there is not any significant relationship between these learning styles and CALL.

Based on Table 6, there is a significant correlation between kinesthetic learning style and CALL ($\text{sig} < 0.05$). In other words, learners whose preferred language learning style is kinesthetic had more positive attitudes toward CALL.

Discussion

To find learners' level of familiarity with the computer (the second part of the CALL questionnaire), a set of descriptive statistics and one sample t-test were performed. The results of descriptive statistics revealed that the mean score of items related to learners' familiarity with a computer was less than the average score of the questionnaire. Since the items in the second part of the questionnaire were negative statements, most of the students were disagree or strongly disagree with them. For example, the participants of this study believed that they have adequate access to computers. They agree that suitable educational software is available at their school. In addition, most of the students were of the opinion that the school management provide them with equipped and sufficient computer labs and provide them with any specialized supervisor in computer labs. The results revealed that most of the participants of this study were familiar with computer and

computer use and they had generally positive attitudes regarding the second part of the questionnaire.

Regarding the learners' attitudes toward CALL, in the third part of the CALL, the results demonstrated that a majority of learners had positive attitudes toward CALL. The results of this study are in line with Talebinezhad and Abarghoui (2013) who found that learners have positive attitudes toward CALL and use it in language receptive skills teaching. The findings are also in tandem with Tuncok (2010) who found that the majority of the participants found CALL motivating and had positive attitudes towards CALL. This result is in alignment with the findings of the studies conducted by Finkbeiner (2001), Ayres (2002), Dewhurst, Macleod, Norris (2000), and Debski (2000). Finkbeiner concluded that ESL undergraduates. learners had positive attitudes towards CALL and indicated that it is necessary to use CALL in language teaching and learning. In Ayres' study, it was demonstrated that university students appreciated and valued learning through CALL. Album asserted that the participants of the study had positive attitudes toward CALL and argued that CALL should be used in regular language classes.

The result of the present study is not in line with Shaw and Marlow (1999). The results of their study indicated that the participants did not have positive attitudes toward CALL and they preferred to learn a language in traditional language classes,

This study also demonstrated that Iranian secondary school students' preferred learning style is visual; followed by group,

tactile and auditory learning styles compared to the others. This indicated that most students preferred visual features in learning.

These results are in line with Dunn and Dunn (1979) who, in their studies, found that the learners' preferred learning style is visual. These results are in line with Tabatabaei and Mashayekhi (2013) who found the visual learning style as the learners' preferred style. The results of this study are consistent with the study conducted by Mulalic, Mohd Shah, and Ahmad (2009) who concluded that the visual learning style was the preferred way of learning. In addition, the results are in tandem with the study that has been done by Wintergerst, DeCapua, and Verna (2003). They demonstrated that Chinese students' preferred learning styles were visual and auditory. Furthermore, these results are not in tandem with Reid (1981), who found that learners used kinesthetic and tactile learning styles more than other styles.

The results of data analysis regarding the third research question revealed that there is not any significant correlation between the visual, group, individual, auditory, and tactile learning styles and the participants' attitudes toward CALL. In addition, the findings revealed that there is a significant relationship between kinesthetic learning style and learners' attitudes toward CALL. The result of this research question is new in the field of studies on perceptual learning styles. Therefore, based on the findings, the research hypothesis was accepted.

Conclusion

The present study had some findings. First, the results indicated that the participants of this study were familiar enough with computers and using them in language learning. It was also revealed that secondary school students had positive attitudes toward CALL and accepted it as a good way to learn the language. According to the results, it might be concluded that computers and language learning are closely integrated and their relationship could enable students to learn better and enjoy their learning. Computers are effective tools that could be used as an important source of input provided to EFL learners. Computers are authentic materials that improve learners' motivation and enthusiasm to learn new subjects and provide learners with the feeling that they are learning the real language (Guariento and Morely. 2001).

Second, the results indicated that the learners preferred learning style is visual. This finding implies that secondary school students use the visual style in language learning more than other styles.

Third, the results showed that there is a significant correlation between kinesthetic learning style and attitudes toward CALL. It means that the learners who use kinesthetic learning style more than other styles have more positive attitudes toward

CALL than learners who used other learning styles. In other words, the results demonstrated that there is not any significant correlation between the other five perceptual learning styles and CALL. Because there is not any significant correlation between individual language learning styles and attitudes toward CALL, it could be concluded that the research hypothesis was accepted.

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Conflict of interest

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Ethics statement

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