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The Relationship Between EFL Learners' Learning Style Preferences and their Satisfaction with Online Education

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Abstract. This study was an attempt to investigate to what extent Iranian EFL learners are satisfied with online education. It also aimed at exploring which type of learning style is more associated with learners' satisfaction with online education. Further, it sought if EFL learners' perceptual style preferences modify their satisfaction with online education. To this end, 104 EFL learners from three English Language institutes in Shiraz (61 females and 43 males) with the age range from 13 to 25 were selected through convenience sampling. The Learning Style Questionnaire and the questionnaire on learners' satisfaction with online education were utilized as the instruments of the study. The data obtained from the two questionnaires were analyzed quantitatively utilizing the descriptive and inferential statistics. Means and standard deviations, as well as the Pearson product-moment correlation coefficient and the One-way ANOVA, were run to analyze the data. The results demonstrated that although EFL learners were not satisfied with the internet quality, they were satisfied with online education in general, and four dimensions of online education namely instructor, course, technology, and environment. The results showed that among the three learning styles, the visual learning style was more associated with learners' satisfaction with online education. Moreover, based on the results, compared

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with the learners with kinesthetic style, learners with visual learning style were more satisfied with online education. Finally, the pedagogical implications of the study for language teachers, administrators, syllabus designers, and curriculum developers were listed.

Keywords: EFL learner's satisfaction, Iranian EFL learners, learning style, online education.

1. Introduction

Learning is considered as a process which brings together cognitive, emotional and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and worldviews (Illeris, 2004). It is also defined as the lifelong process of transforming information and experience into knowledge, skills, behavior, and attitudes (Cobb, 2009).

To acquire, improve, or alter one's knowledge, abilities, beliefs, and worldviews, learning is regarded as a process that combines cognitive, emotional, and environmental factors and experiences (Illeris, 2004). It may also be described as the ongoing process of turning knowledge and experience into skills, attitudes, and behaviors (Cobb, 2009).

A more significant focus is being placed on learners' views and preferences as the trend in language learning and teaching moves toward learner-and learning-centeredness, and learners are becoming more involved in making decisions concerning language learning and teaching procedures. According to Barkhuizen (1998), the change toward learner-centered methodologies often resulted in a higher focus on learners' perceptions of the objectives and activities in the classroom. There is little question that students enter the class with a variety of preferences and dislikes, linguistic and educational attitudes, and ways of absorbing and understanding knowledge.

Learning preferences or learning styles relate to various ways that a learner assimilates and processes information. These overall patterns that provide basic guidance to linguistic conduct are known as styles (Cornett, 1983). Understanding how pupils learn is increasingly recognized as the key to bettering education.

Several researchers studied how people comprehend or acquire new material, then adapted it to their preferred learning styles (e.g. Bruner, 1967; Dobson, 2009; Grasha, 1972). In truth, educators have long accepted the idea that individual variations play a fundamental role in learning and instruction because people absorb and process information in different ways (Moallem, 2008). Learning styles have been cited as important factors in the learning process. According to West (2010), educators might adopt a constructivist approach and serve as guides (rather than knowledge dispensers) to aid learners in creating new information based on prior knowledge and experience by determining and evaluating students' preferred learning methods. Scholars are examining learning styles in diverse educational environments as a result of the educational push toward a more student-centered approach (e.g., face-to-face and online classroom settings). Additionally, several academics have created a variety of tools to evaluate students' learning styles, but the literature on this subject is replete with unresolved problems, both theoretical and practical (Pashler et al., 2008; Wilson, 1998).

On the other hand, as different learners favor different learning styles, various teaching and learning modes are proposed, one of which is online education. In the latter part of the 20th century desktop computers, laptops, netbooks, and web-based applications greatly facilitated flexible access to online courses and language learning materials. Different scholars tried to study the opportunities regarding language learning provided by online courses. In this regard, Villaverde, Godoy, and Amandi (2006) stated that "e-learning environments can take advantage of different forms of learning by recognizing the style each individual student using the system and adapting the content of courses to match this style" (p. 197). Therefore, identifying the relationship between learners' learning styles and their satisfaction with online education could contribute to this growing area of research and possibly be really helpful both for students and teachers.

2. Literature Review

2.1. Theoretical considerations

The rapid and unexpected advent of the fatal coronavirus epidemic con-

vulsed the whole planet, confronting the educational system worldwide and forcing instructors and learners to adapt to online education delivery rather than traditional teaching and learning system (Dhawan, 2020). The introduction of online learning, which is a component of e-learning, has had an important impact on educational continuity and the advancement of information technology.

A surge in the launch of innovative e-learning systems happened globally, allowing learners to attend lessons amid the COVID-19 epidemic (Gonzalez et al., 2020). Because of the decreased expense of transportation, accommodation, and the total cost of fact-to-face learning, e-learning is viewed as a significantly cheaper means of teaching and learning.

Online education is also referred to as e-learning, online learning, mobile learning, and internet learning (Sangwan, Sangwan, & Punia, 2021). However, Sangwan et al. (2021) simply defined online education as a way of teaching and learning via the internet.

Learners' satisfaction with online teaching and learning is considered as a significant factor which influences the use of online education. As Chogo (2020) pointed out, approximately 52% of students prefer traditional education to the online system.

Learning satisfaction shows their emotions and attitudes toward the learning process, as well as their perceived level of fulfillment as a result of learning experiences (Topala & Tomozii, 2014).

Learning satisfaction also relates to how much learners like utilizing online learning platforms and devices. It assesses if the learning content effectively stimulates learners' strong desire for knowledge, assisting them in developing positive attitudes toward learning, and allowing them to participate in the learning process, all of which can enhance the efficiency of online learning (Zhang, Li, & Wang, 2008).

The adaptation of students to the network environment is critical. There are various types of interaction in the learning process such as the interaction between learners, between learners and instructors, and between learners and learning materials. Compared with other types of interaction, interactions between learners and learning materials, as well as interactions between learners and instructors, are considered as the

most significant factors influencing online learning satisfaction. Furthermore, learners' self-efficacy is linked to learning pleasure since it influences self-regulated learning capacity in an online situation (Xu, Zhao, & Liu, 2017). In a nutshell, the primary goal of learning is learner-centered.

One issue that can potentially influence learners' satisfaction with online education is learners' perceptual style due to the multimodality of online educational context. Various definitions of learning style and learning styles approaches have been presented by scholars. For example, Felder and Henriques (1995) defined the learning style as "the ways in which an individual characteristically acquires, retains and retrieves information" (p. 21).

Vermunt (2014) considered learning styles as a cohesive set that students commonly use in their mental frameworks and learning inclinations. He said that learning styles more broadly refer to the idea of related cognitive and emotional learning activities, thought patterns, and directions. Vermunt (2014) argued that learning style preferences are not necessarily personality qualities. He believed that a person's learning preferences are a function of their interactions with their environment.

According to Reid (1987), the phrase 'perceptual learning style' refers to the different ways that different learners use one or more senses to comprehend, categorize, and recall experiences. Perceptual learning methods were categorized by Reid (1987) into six groups (Table 1).

Table 1: Reid's Perceptual Learning Styles (Adapted from Wong, 2015)

Learning styles	Definitions
Visual	Learning more effectively through the sight
Auditory	Learning more effectively through the hearing
Tactile	Touch facilitates learning more efficiently (hands-on)
Kinesthetic	Learning is more successful when it involves the whole body experience
Group	Learning more effectively through interacting with others
Individual	Learning more efficiently through working alone

2.2. Empirical studies

Satisfaction has been highlighted as one of the most important elements influencing the continuance of e-learning in the online context (Moore & Kearsley, 2011; Parahoo, Santally, Rajabalee, & Harvey, 2016).

Previous online learning research has discovered that learner satisfaction is a significant predictor of learning outcomes and the efficacy of online learning system adoption (Ke & Kwak, 2013). A wide range of research has been undertaken to investigate the variables that influence learners' satisfaction with online education. Rostami Ravari and Fathi Rad (2021) conducted a study to compare 75 Iranian intermediate EFL learners' satisfaction in online and face-to-face classrooms. The researchers found that the learners had a high level of satisfaction with e-learning, however, they held negative attitudes toward the challenges and obstacles of online contexts.

Jalilinia (2021) also conducted a survey study to investigate the attitudes of 60 Iranian high school students toward online learning. Based on the results, the researcher concluded that students mainly had negative perspectives on online learning and most of them did not have pleasant experiences with the online learning platforms.

In a recent study, Derakhshan, Fathi, Hosseini, and Mehraein (2022) explored the factors influencing Iranian intermediate EFL learners' online course satisfaction. Through conducting the structural equation modeling, they discovered that online course satisfaction was strongly influenced by both online learning self-efficacy and online learning atmosphere. They came to the conclusion that the environment for online learning was a better predictor.

Education research has recently focused on student characteristics and learning disparities as a result of the expansion of online education courses (Hills, 2003; Khan, 2005). Approaches to learning stressed the need of considering learners while developing education. For a very long time, educators, designers, and academics have struggled greatly with the qualities of learners (Khan, 2005; Laulliard, 2001; Moore & Kearsley, 2005; Schwitzer, Ancis, & Brown, 2001).

In this regard, a large and growing body of literature has investigated students' learning styles as one of the learners' characteristics in online

education. For instance, in a study West's (2010) compared students in traditional face-to-face and online web-based courses in terms of their preferred learning techniques and levels of satisfaction. In order to do this, 247 sport management undergraduate students, 101 in-person and 146 online, were chosen at random to take part in the study. Despite the fact that the learning styles in online and face-to-face courses did not significantly differ, the researcher discovered that online respondents were much happier with the course than face-to-face students.

In another research, Zarabian (2019) examined the connection between academic satisfaction and learning styles across two groups of students at Payam Noor University: online and conventional. The sample for the study consisted of 302 students from electronic courses and 310 students from conventional courses. The study's instrument was a learning styles questionnaire developed by Kolb (1999). The converging, diverging, assimilator, and accommodator course results exhibited the strongest correlation with academic satisfaction. Divergent, assimilator, and convergent learning styles were most correlated with academic satisfaction in online courses. The results also revealed that assimilator learning style predominated in conventional courses whereas divergent learning style predominated in online courses. Additionally, it was shown that most students were dissatisfied with traditional courses whereas the online group reported higher levels of academic satisfaction.

Berlianda and Indriani (2020) explored EFL learners' learning style in online speaking class. 33 EFL learners constituted the sample. The researchers used the VARK questionnaire as the instrument of the study. Based on the results, they reported that the most suitable learning style in student online speaking class is auditory.

In a recent study, Baherimoghadam et al. (2021) explored the effect of dental students' learning style and general self-efficacy on their satisfaction with online learning. The results of the correlation analysis depicted a moderate significant association between the students' learning styles and the level of their satisfaction.

As the literature highlights, learners' learning style preferences play an important role in both their learning process and their achievement. Furthermore, online education is a new educational field that

includes the use of computer network in teaching and learning and offer many advantages for language learners. Although there have been a large number of studies related to these two factors (online education and learners' learning styles), there are still some areas that haven't been explored up to now. Most of the previous studies focused on university students' learning styles and satisfaction. One of the neglected areas is the relationship between EFL learners' perceptual style preferences and their satisfaction with online education. Therefore, the following research questions are put forward:

1. To what extent are Iranian EFL learners satisfied with online education?

2. Which type of learning style is more associated with learners' satisfaction with online education?

3. Do EFL learners' perceptual style preferences modify their satisfaction with online education?

3. Method

3.1. Design

The current study generally followed a quantitative design. To answer the first research question, the study followed a descriptive design to determine whether Iranian EFL learners are satisfied with online education. Correlation analysis, employed to answer the second research question, dealt with estimating correlation coefficient between several variables (learners' satisfaction and their learning styles). One-way ANOVA, used to answer the second research question, is a quantitative research method which is used when the study involves the statistical differences among the means (satisfaction mean scores) of two or more group (learning style groups; i. e., visual, auditory, and Kinesthetic groups).

3.2. Participants

The participants of the present study included 104 EFL learners from three English language institutes in Shiraz, Iran. The sample of convenience was utilized in this study. To ensure the familiarity of participants with online education, learners who attended online classes at

least for two semesters were asked to participate in the study. All the participants were Iranian EFL learners whose first language was the same, Persian. The focus group constituted of both male (N=43) and female (N=61) participants classified in intermediate and advanced levels (based on the placement tests administered by the institutes) with the age range of 13 to 25 years old (mean= 19.32, SD= 6.43).

3.3. Instruments

3.3.1. Learning style questionnaire

A modified version of a Learning Style Questionnaire designed by Slack and Norwich (2007) with 18 items was used to investigate learners' style preferences in one of three style categories: visual, auditory, and kinesthetic. The items had yes/no alternatives in the original version. The researcher converted the alternatives into Likert-type items on a five-point scale, ranging from "never" (1 point) to "always" (5 points) (5 points).

3.3.2. Learners' satisfaction with online education questionnaire

The satisfaction of learners with online education was investigated using a 39-item questionnaire designed by Stefanovic, Drapsin, Nikolic, and Scepanovic (2011). The measurement was done using a 7-point Likert scale. The questionnaire included four major independent dimensions: instructor dimension, course dimension, technology dimension, and environmental dimension, as well as one dependent variable: e-learning satisfaction, all of which were considered to have an influence on e-learner satisfaction.

3.3.3. Reliability of the questionnaires

The researchers used the Cronbach's Alpha analysis to calculate the reliability of the surveys because they contained Likert questions (Table 2).

Table 2: Reliability of the Questionnaires

	Cronbach's Alpha	*N of Items*
Learning Style Questionnaire	.872	18
Learners' Satisfaction with Online Education Questionnaire	.812	39

As shown in Table 2, the reliability coefficients of the learning style survey (r =.87) and learners' satisfaction questionnaire (r =.81) were greater than .70 demonstrating the instruments to be highly reliable. In the present study, expert judgment technique was used to confirm the validity of the instruments. In order to do so, two experts verified the questionnaires' content and face validity.

3.4. Data collection procedure

Before collecting data and distributing surveys, permission was acquired from those in authority at language institutes (institute principals and teachers). Following that, EFL learners were requested to participate in this research.

The surveys were sent electronically via social media networks, WhatsApp, and Telegram. The first page of the survey explained the goal of the study and how to complete the questions. The participants were also notified on the opening page of the questionnaires that they might withdraw from the study at any time without disadvantages.

Furthermore, while evaluating and reporting the results, the participants' confidentiality and identity were ensured by assigning the EL (English Learner) codes 1-104. The questionnaires with partial, incomplete, or inconsistent replies were eliminated at the end of the data collection.

Data had been obtained from 111 learners by the end of the data-collecting period, with 7 of them being rejected due to partial, incomplete, or inconsistent replies. Following that, the obtained data were tallied and parametric statistical analyses were performed.

3.5 Data analysis

Statistical data analyses were performed using SPSS Statistics (version 27). First, the reliability of the instruments was evaluated by running Cronbach's Alpha. Then, preliminary analyses were performed to confirm that no violation of the assumption of normality happened. The normality of the data was assessed by running the skewness and kurtosis analyses.

In the next step, to identify whether Iranian EFL learners are satisfied with online education, the descriptive of the response regarding the

learners' satisfaction and its four dimensions was estimated. Regarding the second research question, the Pearson-moment correlation analysis was employed to find the relationships between learner style preferences and their satisfaction with online education. In the next step, to answer the last research question, One-way ANOVA was conducted to see whether there was any difference between visual, auditory, and kinesthetic learners' satisfaction with online education.

4. Results

In the first step, the skewness and kurtosis ratios were assessed to check the normality of the data. To satisfy the normality assumption, the skewness and kurtosis ratios over their respective standard errors must be between +/- 1 (Kim, 2013). Table 3 shows the normality test results.

Table 3: Normality Test

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Learners' satisfaction	-.531	.237	.024	.469
Instructor Dimension	.551	.237	-.210	.469
Course Dimension	.396	.237	.278	.469
Technology Dimension	.383	.237	-.126	.469
Environment Dimension	.537	.237	.466	.469

As the values are not greater than 1.0, then the skewness or kurtosis for the distribution is inside the range of normality, so the distribution can be considered normal.

As mentioned earlier, the first research question sought to identify to what extent Iranian EFL learners are satisfied with online education. Table 4 shows the descriptive statistics of the satisfaction scores. It is important to note that the questions on the learners' satisfaction survey were graded on a seven-point Likert scale, with 7 being the strongest agreement and 1 being the strongest disagreement. Since the range of the average score on the questionnaire was 1 to 7, point 4 was chosen as the middle value. In other words, mean scores above 4 indicated high levels of satisfaction, whereas mean scores below 4 indicated low levels of contentment.

Table 4: Descriptive Statistics of Learners' Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
Learners' satisfaction	104	2.67	6.22	4.8451	.52720
Instructor Dimension	104	3.40	7.00	5.0000	.81061
Instructor response timeline	104	1.00	7.00	5.2404	1.28845
Instructor's attitude toward online education	104	3.00	7.00	4.9399	.83934
Course Dimension	104	3.55	6.82	4.8453	.63729
Online course flexibility	104	3.38	7.00	4.9207	.69653
Online course quality	104	3.00	6.67	4.7532	.80048
Technology Dimension	104	3.25	6.25	4.5950	.63056
Technology quality	104	2.50	6.50	4.7380	.74990
Internet quality	104	2.00	6.00	3.8702	.85615
Environment Dimension	104	3.17	6.67	4.6442	.64322
Diversity in assessment	104	1.00	7.00	4.4327	1.81560
Interaction in class discussion	104	3.20	6.60	4.5981	.67262

According to Table 4, the participants' satisfaction mean score was 4.84. Therefore, it can be inferred that the participants were satisfied with online education in general. It is also worth mentioning that among the dimensions of online education, instructor received the highest mean score (M= 5.0, SD= .81), meaning that learners are highly satisfied with instructors in online education. The results also showed that compared with other dimensions of online education, environment dimension had the lowest mean score (M= 5.0, SD= .81).

Concerning the dimensions of online education, the results of the descriptive statistics revealed that participants' mean scores were higher than 4, suggesting that they believed that instructors' response timeline (M= 5.24, SD= 1.28) and their attitudes towards online education (M= 4.93, SD= .83), online course flexibility (M= 4.92, SD= .69) and equality (M= 4.75, SD= .80), technology quality (M= 4.73, SD= .74), diversity in assessment (M= 4.43, SD= 1.81) and interaction in class discussion (M= 4.59, SD= .67), are satisfactory. The results of the descriptive statistics also revealed that the participants were not satisfied with the internet quality (M= 3.87, SD= .85) in online education.

The second research question intended to determine which type of learning style is more associated with learners' satisfaction with online education. To find out if there is any relationship between EFL learners' perceptual style preferences and their satisfaction with online education, correlation analysis was run.

As previously mentioned, the participants answered a Learning Style Questionnaire. The questionnaire included three learning styles (visual, auditory, and kinesthetic). Each learner received a mean score for each learning style. Table 5 demonstrates the results of the correlation.

Table 5: Correlation between the Learners' Satisfaction with Online Education and Their Learning Styles

		Visual	Auditory	Kinesthetic
Satisfaction	Pearson Correlation	.619**	.422**	.281**
	Sig. (2-tailed)	.000	.000	.004
	N	104	104	104
Instructor	Pearson Correlation	.347**	.341**	.142
	Sig. (2-tailed)	.000	.000	.151
	N	104	104	104
Course	Pearson Correlation	.397**	.343**	.269**
	Sig. (2-tailed)	.000	.000	.006
	N	104	104	104
Technology	Pearson Correlation	.399**	.342**	.259**
	Sig. (2-tailed)	.000	.000	.008
	N	104	104	104
Environment	Pearson Correlation	.414**	.402**	.166
	Sig. (2-tailed)	.000	.000	.092
	N	104	104	104

The correlation results in Table 5 showed that there were significant relationships between learners' satisfaction with online education and their learning styles. Based on the correlation coefficients, it can be inferred that compared with other learning styles, the visual learning style is more associated with learners' satisfaction with online education ($r = .61, p < .05$). The learners' satisfaction with online education also had significant and positive relationships with the auditory ($r = .42, sig.p < .05$), and kinesthetic ($r = .28, p < .05$) styles. The results also demonstrated that among the learning styles, the visual learning style had the highest relationship with the dimensions of online education namely instructor ($r = .34, p < .05$), course ($r = .39, p < .05$), technology ($r = .39, p < .05$), and environment ($r = .41, p < .05$).

It is worth noting that there were significant and positive relationships between the auditory learning style and four dimensions of online education: instructor ($r = .34, p < .05$), course ($r = .34, p < .05$),

technology ($r = .34, p < .05$), and environment ($r = .40, p < .05$). Additionally, of four dimensions of online education, the kinesthetic learning style correlated significantly with course ($r = .26, p < .05$) and technology ($r = .25, p < .05$).

To investigate if there is a significant difference between visual, auditory and kinesthetic learners' satisfaction, the One-way NOVA was run. To this end, the participants were divided into three groups (visual, auditory and kinesthetic) based on their responses to the learning style questionnaire. As mentioned earlier, each participant received three mean scores for three learning styles. Among the three learning style mean scores, the highest one was considered as the learner's preferred learning style. Table 6 shows the number of participants in each group.

Table 6: Frequency of the Participants' Learning Style Preferences

		Frequency	Percent	Valid Percent
Valid	Visual	45	28.0	43.3
	Auditory	34	21.1	32.7
	Kinesthetic	25	15.5	24.0
	Total	104	64.6	100.0

As shown in Table 6, visual style was the most frequent learning style (F= 45). Auditory style was the second frequent learning style (F=34), and kinesthetic style was the least frequent one (F=25). Table 7 and 8 summarize the results of the descriptive statistics and One-way ANOVA, respectively.

Table 7: Descriptive Statistics of Learning Styles Groups' Satisfaction with Online Education

	N	Minimum	Maximum	Mean	Std. Deviation	Std. Error
Visual	45	4.11	6.22	4.9654	.45863	.06837
Auditory	34	3.89	5.78	4.8529	.46317	.07943
Kinesthetic	25	2.67	5.56	4.6178	.65662	.13132
Total	104	2.67	6.22	4.8451	.52720	.05170

As Table 7 displays, the visual (M=4.96, SD=.45) and the kinesthetic groups (M=4.61, SD=.65) received the highest and the lowest mean scores, respectively.

Table 8: One-way ANOVA to Compare Learning Style Groups in terms of Their Satisfaction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.946	2	.973	3.682	.029
Within Groups	26.682	101	.264		
Total	28.628	103			

According to Table 8, there was a statistically significant difference in the satisfaction score for the three learning style groups: F (2, 101) = 3.68, p=.02. Despite reaching statistical significance, the actual difference in mean scores between the learning style groups was quite small. The effect size calculating the eta square was .06. In the next step to explore exactly where the differences among the groups occurred, the post-hoc comparisons using the Tuckey HSD test was run. The results of the post-hoc test are shown in Table 9.

Table 9: Post-hoc Comparisons

(I) Learning style	(J) Learning style	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Visual	Auditory	.11249	.11679	.602	-.1653	.3903
	Kinesthetic	.34765*	.12821	.021	.0427	.6526
Auditory	Visual	-.11249	.11679	.602	-.3903	.1653
	Kinesthetic	.23516	.13541	.197	-.0870	.5573
Kinesthetic	Visual	-.34765*	.12821	.021	-.6526	-.0427
	Auditory	-.23516	.13541	.197	-.5573	.0870

*. The mean difference is significant at the 0.05 level.

As revealed in Table 9, the mean score for the visual group (M=4.96, SD=.45) was significantly different from and higher than the kinesthetic group (M=4.61, SD=.65).

5. Discussion

5.1 Discussion on the first research question

As mentioned previously, the first objective of the present study was to investigate if Iranian EFL learners are satisfied with online education. The results revealed that the participants were satisfied with online

education in general, and four dimensions of online education namely instructor, course, technology, and environment. The results also demonstrated that the learners were satisfied with instructors' response timeline and their attitudes towards online education, online course flexibility and equality, technology quality, diversity in assessment and interaction in class discussion. Furthermore, the finding revealed that the participants were not satisfied with the internet quality in online education.

The current study's findings may be justified in light of the characteristics of online education. Not all students learn at the same rate, nor do they all have the same educational requirements. Online education, on the other hand, allows students to learn at their own speed. Furthermore, by utilizing technology, teachers may tailor the learning and development objectives of their pupils to meet their specific requirements. This will assist to highlight a student's true strengths rather than exposing their weaknesses, resulting in greater students' satisfaction.

In line with Eom, Wen, and Ashill (2006), the study's findings may be related to the course management factor, suggesting that the learners' satisfaction with the online course may have positively affected their satisfaction towards online education. These findings may also be explained through the technology satisfaction model (TSM), proposed by Islam (2014). According to TSM, users will be satisfied with technology when they experience the ease of use and usefulness (Jiang et al., 2021). Therefore, it can be argued that the learners' satisfaction with the technology plays a significant role in their satisfaction with online education.

These results are in accord with those of the study conducted by Azizi and Rezaei (2021). They also found that Iranian students' are moderately satisfied with online classes. Similarly, Zarabian (2019) reported that Iranian university students are satisfied with online courses. Rostam Ravari and Fatehi Rad (2021) who compared learners' satisfaction in online and face-to-face classes concluded that Iranian learners had a high level of satisfaction with online learning.

The results of the current study also demonstrated that EFL learners were not satisfied with the internet quality in online education. These results are in agreement with previous studies which showed that inter-

net quality is one of the challenges of online education in the context of Iran (Abbasi, Hejazi & Hakimzade, 2020; Jalilinia, 2021; Mahmoodi Shahrebabaki, 2014).

5.2 Discussion on the second research question

The second research question posed in the present study explored which type of learning style is more associated with learners' satisfaction with online education. The results of the Pearson product-moment correlation coefficient showed that all three learning styles positively and significantly correlated with learners' satisfaction with online education. It was also found that among the three learning styles, visual learning style had the highest relationship with learners' satisfaction with online education.

These findings are in keeping with the previous study conducted by Zarabian (2019). She also found a statistically significant relationship between learning styles and university students' satisfaction with online learning courses.

This result can be also justified based on the fact that online education has the potential for providing a mechanism where each learner will have his or her own individualized learning process (Kinshuk & Lin, 2004). Additionally, the learning environment may be more readily customized to each student in an online classroom by putting an emphasis on their unique learning preferences. Therefore, all learners with different learning styles may benefit from online learning.

On the other hand, online education can be considered as an adaptive mechanism that provides learners with learning materials that fit their individual learning styles. Technology enables teachers to fit any learning style, whether students learn best through lectures, reading, examples, or video. Being aware of this potential, all learners may consider online education as a learning service that can provide them with learning materials, activities, and experiences that fit their individual needs and requirements.

In this regard, Villaverde, Godoy, and Amandi (2006) pinpointed that by identifying each individual student's preferred style and tailoring the course material to suit it, online learning environments may

make the most of various learning styles. Additionally, as the material presentation mode is mostly visual in online education (materials are presented through visual files on the screen), it is plausible to deduce that the more learners favor and apply visual learning styles, the more satisfied they are with online education.

5.3 Discussion on the third research question

The third research question asked if EFL learners' perceptual style preferences modify their satisfaction with online education. The results of the One-way ANOVA indicated that the satisfaction mean score for the visual group was significantly higher than the kinesthetic group, suggesting that learners with visual learning style were more satisfied with online education than the learners with kinesthetic style.

A possible explanation for these results may be the way (mode) information and material are presented in online education. The majority of knowledge is conveyed by educators orally through lectures and narrated presentations, tutorials, recordings, group discussions, web chats, and talking/speaking experiences or visually through drawings, diagrams, charts, films, and demonstrations.

These results are also partly in agreement with the findings of the studies conducted by Aragon, Johnson and Shaik (2002) and Buerck et al. (2003) which showed that there is a relationship between students' preferred learning style and their learning environment (face-to-face and online). The results of the current study also confirm Babadogan's (as cited in Dag & Gecer, 2009) opinion regarding the determining role of learning style in different learning environments. He stated that if a learning environment can be developed based on the learners' learning styles, or if the learners' learning styles can be determined in various learning environments and learning settings can be adapted to their styles, the learners' academic results would enhance.

These results are consistent with those of Sahin (2008) who found a significant relationship between university students' learning styles and their satisfaction with distance learning. Wang et al. (2006) also admitted the role of learning styles in students' performance in online courses and indicated that awareness of student learning styles would

increase students' positive attitudes and performance in online courses.

According to Moallem (2008), incorporating learning styles into the design of instructional materials and learning environments encourages students to spend more time interacting with content and investigating different instructional materials in order to attain learning goals. Moallem (2008) noted that if diverse learning styles are addressed through a range of instructional strategies, improved learning results may occur.

6. Conclusion

The ability to provide educational services depending on student requirements, which makes it simple for people to educate without regard to time or location limits, is one of the most significant advantages of online learning (Otar khane & Delavari, 2011). As a result, given the importance of the student in the virtual education system, system designers and executives place a high priority on ensuring that students are satisfied as end users, which is crucial for the system's success (Ruggeri, Farrington, & Brayne, 2013). The success of students in distant learning and in the educational process in general depends on their preferred learning styles (Diaz & Bontenbal, 2001).

The present study indicated that Iranian EFL learners were satisfied with online education. In addition, it was concluded that there was a positive and significant relationship between learners' learning styles (Visual, Auditory, and Kinesthetic) and their satisfaction with online education. Based on the results, the researcher also concluded that participants with visual learning style were more satisfied with online education than those with kinesthetic style. These results highlight the significant role of learning style in learners' satisfaction with online education.

The present study could have a number of pedagogical implications. In essence, the findings of this study might be fruitful for language teachers, administrators, syllabus designers, curriculum developers, and policy makers and could help them to better understand the relationship between EFL learners' satisfaction with online education and their learning style.

EFL teachers can adapt the results of this study to use in their online teaching. Since there are different learning styles, EFL teachers can design and present appropriate learning activities based on different learning styles in online education. Therefore, students can find the appropriate content based on their needs and learning style, which subsequently brings about their satisfaction with online learning.

The researchers suggest pedagogical strategies like dramatizing, pantomiming, interviewing, small group discussions, and hands-on approaches to cater to the needs of the kinesthetic learners because these learners perform well when they need to adapt themselves to doing things, carrying out plans and tasks, and engaging in new experiences (physical involvement with a learning environment like taking a field trip, dramatizing, pantomiming, or interviewing).

Besides, syllabus designers and curriculum developers are required to know the significant role of learners' learning style in the satisfaction with online education and include various course delivery methods and instructions to account for possible learning style differences.

The present study is nevertheless limited in a number of ways. The results of this study may not be applicable to other cultures and nations due to its particular setting. There were not many people that participated. As a result, it is not possible to generalize the study's findings to all EFL learners.

Additionally, the amount of quantitative data that was gathered for this study primarily through questionnaires was constrained. It is advised that further study be done to determine the approaches, instructional tactics, and scaffolding techniques that teachers employ to fulfill the requirements of learners with various learning preferences. To gain a more thorough and trustworthy understanding of the link between learners' learning styles and their satisfaction with online education, it would be useful to add classroom observations and interviews.

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