EXPLORING THE RELATIONSHIP BETWEEN EFL LEARNERS' NEED SATISFACTION, LEARNING STYLE PREFERENCES AND LEARNER SATISFACTION IN ONLINE LEARNING

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

EXPLORING THE RELATIONSHIP BETWEEN EFL LEARNERS' NEED SATISFACTION, LEARNING STYLE PREFERENCES AND LEARNER SATISFACTION IN ONLINE LEARNING

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This study investigates the relationship between individual affective characteristics, which are need satisfaction, perceptual learning style preferences, gender and proficiency level in English and EFL learner satisfaction in a synchronous online learning environment at higher education. 176 students who were studying English as a foreign language (EFL) in the preparatory program within the academic year of 2020-2021 at the school of foreign languages at a state university participated in the study. In order to find out whether EFL learner satisfaction differed according to the variables, correlational research design based on quantitative data was administered. The findings of the study showed that there was no significant difference between gender, proficiency level of English and sociological learning styles of the students regarding their online learner satisfaction. On the other hand, there was a significant difference between students with auditory learning style and students with visual learning style in terms of their online learner satisfaction. Moreover, the participants' autonomy need satisfaction and auditory learning style preference were predictors of online learner satisfaction. These findings suggest that high levels of autonomy satisfaction and auditory learning style preference can be described as a characteristic of learners with a high level of EFL learner satisfaction.

Key Words: Online Learner Satisfaction, Perceptual Learning Style Preferences, Need Satisfaction, EFL, Synchronous EFL Online Learning

ÖZ

YABANCI DİL OLARAK İNGİLİZCE ÖĞRENEN ÖĞRENCİLERİN İHTİYAÇ DOYUMU VE ÖĞRENME BİÇİMİ TERCİHLERİ İLE ÖĞRENCİLERİN ÇEVRİMİÇİ ÖĞRENMEDEKİ ÖĞRENCİ MEMNUNİYETİ ARASINDAKİ İLİŞKİNİN ARAŞTIRILMASI

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Bu çalışma yabancı dil olarak İngilizce öğrenen öğrencilerin ihtiyaç doyumu, öğrenme biçimleri, cinsiyetleri ve İngilizce seviyeleri ile öğrencilerin yüksek öğrenimde eş zamanlı çevrimiçi eğitim ortamındaki memnuniyetleri arasındaki ilişkiyi araştırmaktadır. Çalışmaya 2020-2021 eğitim öğretim yılında bir devlet üniversitesinin yabancı diller yüksekokulunda hazırlık programında yabancı dil olarak İngilizce öğrenen 176 öğrenci katılmıştır. Yabancı dil olarak İngilizce öğrenen öğrenci memnuniyetinin değişkenlere göre farklılık gösterip göstermediğini bulmak amacıyla nitel veriye dayalı ilişkisel tarama modeli kullanılmıştır. Çalışmanın bulguları çevrimiçi öğrenci memnuniyeti açısından bakıldığında öğrencilerin cinsiyetleri, İngilizce seviyeleri sosyolojik öğrenme becerileri arasında anlamlı bir farklılık olmadığını göstermiştir. Diğer bir yandan çevrimiçi öğrenci memnuniyeti açısından bakıldığında, işitsel öğrencilerle görsel olarak öğrenen öğrenciler arasında anlamlı bir farklılık vardır. Ayrıca, öğrencilerin özerklik ihtiyaçlarının doyumunu ve dinleyerek öğrenme tarzının tercihleri çevrimiçi memnuniyetini tahmin etmektedir. Bu bulgular, yüksek düzeyde özerklik memnuniyeti ve işitsel öğrenme tercihinin, yüksek düzeyde İngilizce öğrenme memnuniyeti olan öğrencilerin bir özelliği olarak tanımlanabileceğini göstermektedir.

Anahtar Kelimeler: Çevirim içi Öğrenci Memnuniyeti, Öğrenme Tarzları, İhtiyaç Doyumu, İkinci Dil Olarak İngilizce, Eş zamanlı Çevirim İçi İngilizce Öğrenme

To my family,

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Since this study was completed during Covid-19 pandemic, I have faced with some challenges. Fortunately, I was able to manage these challenges. I would also like to thank to my family who has always supported me throughout my life. I also offer my gratitude to my husband, Aydok Moralıoğlu who encouraged me to start the master's program, and supported me.

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LIST OF ABBREVIATIONS

EFL	English as a Foreign Language
L1	First Language
L2	Second Language
PLSPQ	Perceptual Learning Style Preference Questionnaire
SDT	Self Determination Theory
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

CHAPTER 1

Introduction

In this chapter, the topic of the study is introduced. Also, the problems and the reasons that prepared the ground for the author to study on the topic, the significance of the study and the research questions are explained. Lastly, definitions to the terms mentioned in the present study are given.

1.1 Overview

Since the Internet has been a part of the everyday life, online learning has become a prominent alternative for people who cannot be present at face-to-face classes because of several factors such as time and space. Online learning can be defined as a type of learning delivery that enables technological tools to promote the transfer of materials that are used during the process of learning (Carline, 2004). The number of higher educational institutions which offer online courses has been rising in recent years not only because online lessons are preferred by many students but also because taking courses through online learning has been the only option due to the breakout of the Covid-19 pandemic. Due to the applying social distancing in all areas, face-to-face classes had to be cancelled and online methods needed to be used instead (Meuthia, 2020).

During online learning, students are expected to be as active as they are in face-to-face classroom while processing what they have learnt in addition to constructing new knowledge. In this constructivist student-centered model, teachers and institutions are supposed to present students an environment that enables them reflect themselves critically while constructing new knowledge by using the social interaction with the other learners. (Palloff & Pratt, 2001).

Synchronous online learning, which provides teachers and students with the chance of interaction in a real time enables collaborative studying by using e-tivities (Salmon, 2013). E-tivities can be described as “frameworks for enhancing active and participative online learning by individuals or groups” (Salmon, 2002, p. 3) Video-conferencing during synchronous online lessons promotes face-to-face interaction. Moreover, students can communicate with not only their teachers but also the other students through synchronous voice and text chat rooms (Perveen, 2016).

Online English courses have also started to be commonly offered by many institutions. The goal of online English courses is enabling learners not only to learn more efficiently but also access the learning environment more easily. (Dabbagh & Bannan-Ritland, 2005; Sun et. al., 2008) Despite the efforts to offer high quality education in foreign language learning, many people are still doubtful about both the quality and the results of online education in language learning. One of the crucial issues related to online education is that the number of students who continue online courses or programs is low. According to a study with undergraduate students, when it is compared to the traditional courses which are held in a face-to-face classroom, the rate of course completion in online courses is lower (Hart et. al., 2018). Murphy and Stewart (2017) also claim that there are more students who drop out in online courses compared to face-to-face teaching. Two studies that show the dropout rates in Massive Open Online Courses (MOOC's) were conducted in 2014. In one of the studies dropout rate is 87% higher in MOOC's, and the other study shows that dropout rate is 90% higher in MOOC's. The reasons for students to give up online courses have been studied by many researchers. Theories of marginalization and social exclusion have been given as a reason for starting or giving up online courses (Ball, Davies, David, Reay, 2002). On the other hand, self-efficacy beliefs of students claimed to possibly be affected more positively during face-to-face interaction (Shea & Bidjerano, 2010), and the importance of paying attention "to supporting the relationship between teaching presence and self-efficacy in fully online environments" (p. 1727). However, there is limited research that has concentrated on the area of foreign language learning in synchronous online learning environment.

1.2 Statement of the Problem

Language learning may be very hard in online education since learners are physically distant from their instructors and friends in addition to being away from the language community (Wang & Chen, 2007). Due to these reasons, students may feel demotivated, and, therefore, they may even decide to drop out of the course. While learning a language, affective factors have great influence on whether the language learning process will be success or failure. Khouya (2018) claims that demotivation leads to several problems while learning a language, and learner may even give up learning completely.

Moreover, the satisfaction level of learners with the online program they are studying in predicts not only dropout rate but also students' plan to take online courses in the future. (Arbaugh, 2000; Dabbagh & Bannan-Ritland, 2005).

In this study, EFL online learners' gender and proficiency level of English are focused on. Moreover, affective factors related to online learner satisfaction are concentrated on. Although various factors such as anxiety, and self-efficacy are regarded as crucial for English as a Foreign Language (EFL) and have widely been studied in literature, some other factors such as motivation, need satisfaction and perceptual learning style preferences are also important and need to be considered. Despite several possible reasons for the high non-completion rates, motivation, an important element in any educational environment, has been the area of research for many researchers (e.g., Broadbent & Poon, 2015; Chen & Jang, 2010). Researchers with social cognitive point of view claim that self-regulation, self-motivation and time management skills need to be higher in learners attending online programs compared to the ones in traditional face-to-face learning environment. (e.g., Broadbent & Poon, 2015; Serwatka, 2003). Moreover, contextual support is also essential in online programs; learners in an online learning environment require support from not only their instructors but also their peers in many ways (Chen & Jang, 2010).

Self-determination theory (SDT) is a valuable framework to examine learners' motivation in online learning environment. (Chen & Jang, 2010; Deci & Ryan, 2002). SDT suggests that autonomy, competence and relatedness need to be answered in social context in order to create self-determination (Ryan & Deci, 2017). Autonomy means the desire to self-regulate actions of a person; competence is being able to succeed in tasks effectively; relatedness is about the feelings of connection with other people. Autonomy, competence and relatedness are necessary for psychological growth and wellbeing (Ryan & Deci, 2017). Considering the literature given, it might be concluded that possible factors connected to online learner satisfaction in distant education can be specified as the need for autonomy, competence and relatedness, and these factors may predict the online learner satisfaction as well as affecting high dropout rates in online courses.

Moreover, perceptual learning styles are also important, and need to be focused on in online learning. Perceptual learning style can be defined as how students perceive, arrange, use, and keep the information in a course via different senses (Alkhatnai, 2011). Since learners have various learning styles, perceptual learning styles of learners' may predict their online course satisfaction.

Though needs satisfaction and perceptual learning styles seem to be related to learner satisfaction, not much exploration on these affective characteristics in the context of EFL online learning environment in Turkey has been conducted.

1.3 Purpose of the Study

Synchronous online language education is a heavily researched pedagogical approach; however, the success and effectiveness of learning English in an online environment still leads to some doubts. Especially, with the breakout of COVID-19 pandemic, most universities across the globe had to switch to online setting for education in order to ensure the safety of individuals (Gacs, Goertler & Spasova, 2020). Online education can reach more learners since it removes time and location problems; however, it is important to be careful while creating the atmosphere and interactions because there is no physical presence, and often no facial expressions and body language (Gacs, Goertler & Spasova, 2020). Since there is rare face-to-face interaction as well as other ways of communication during online language learning compared to the traditional learning, individual affective characteristics of students might be vital while deciding whether the online English learning experience has been effective or ineffective.

The goal of the present study is to explore the relationship between EFL online learners' gender, their proficiency level of English, some individual affective characteristics, which are need satisfaction, perceptual learning styles, and EFL learner satisfaction in a synchronous online learning environment since above-mentioned affective characteristics, perceptual learning style preferences, and other characteristics of learners may predict online learner satisfaction. Moreover, these factors can be listed as important ones which affect students' success inlanguage learning, their motivation and performance (Al-Seghayer, 2021; Ababneh, 2015; Hu, 2017; Yükseltürk & Yıldırım, (2008); Öz, 2015). In the present research, dependent variable is online learner satisfaction whereas gender, proficiency level of English, need satisfaction and perceptual learning styles are independent variables.

1.4 Research Questions

The present study aims to answer the following research questions:

1. Does EFL online learner satisfaction significantly differ according to;

   a) students' gender,

   b) students' proficiency level of English,

   c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic),

   d) students' preferred social learning styles (individual and group)?

2. Is there a correlation between;

   a) EFL students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group),

   b) EFL students' need satisfaction (autonomy, competence, and relatedness),

   c) EFL students' gender,

   d) EFL students' proficiency level of English

   and their online learner satisfaction?

3. Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?

4. Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?

1.5 Significance of the Study

There are several factors including time, space and personal issues causing EFL learners to look for new learning environments which will help them learn the foreign language more practically. Moreover, at universities, the outbreak of Covid-19 pandemic has also required the language learning process to be delivered through distant education platforms. (Rineks & Muslim, 2020). In Turkey, many universities have had to prefer to give their online courses synchronously. Synchronous online learning environments give the chance for interaction not only among students but also between students and the teacher (Shahabadi and Uplane, 2015). In this new online learning environment, appreciating individual learner characteristics that may be effective in satisfaction of EFL online learner seems important. Some previous studies were conducted on needs satisfaction and perceptual learning styles in EFL context. A study conducted by Balcı (2017) aimed to find out the relationship between the language learning strategies of first-year students and their learning styles, and according to the findings of the study, there was a positive relationship between auditory and visual learning styles and six language learning strategies. Balcı (2017) indicated that students' choice of language learning strategies is considerably affected by learning styles. Another study carried outby Heidar (2013) to investigate whether the ability level of EFL language learners have an effect on their learning styles; moreover, the study aimed to discover which learning styles are preferred by different level of learners that are at a beginner, intermediate and advanced level. According to the results of the study, students' learning style preferences are highly affected by their proficiency level; moreover, beginner-level learners prefer sensory styles, intermediate-level learners prefer personality styles, and advanced-level learners prefer degree-related styles (Heidar, 2013). A study was conducted by Hu (2017) to see the correlation between psychological need satisfaction and motivation in EFL context. The results of the study revealed that there is a positive correlation between learners' autonomy, competence and relatedness need satisfaction and their motivation in foreign language learning. (Hu, 2017). As it can be seen in the literature, need satisfaction and perceptual learning styles have been studied in language learning context, they haven't been the center of research in online English learning contexts.

In this study, students learning English in a preparatory class in Turkey via synchronous online education are the target sample. The findings of this study might be helpful while comprehending which learner affective factors may help online learners to be successful in online learning and which factors might be the reason for not completing the online programs at higher education in Turkey.

1.6 Definitions

EFL

EFL means English as a foreign language, and in the present study, the setting of the language learning process is a preparatory class of a university.

SDT

SDT refers to self-determination theory. SDT considers three basic needs which are relatedness, competence and autonomy as crucial necessities for well-being. (Deci & Ryan, 2000).

Need Satisfaction

Need Satisfaction refers to satisfying three needs mentioned in self-determination theory.

Synchronous Online Learning

According to Pappas (2015), synchronous learning requires students to attend class by using an online platform as well as participating the discussions in the classroom. The physical presence of learners is necessary in synchronous online learning.

Perceptual Learning Styles

Reid (1987) states that learning style preferences consists of six elements, and these elements are visual, auditory, tactile, kinesthetic, individual and group learning style preference.

CHAPTER 2

Literature Review

In this chapter, relevant literature about the study will be given in five sections. In the first section, online education is defined. The second part focuses on synchronous online language learning. The third section defines online learner satisfaction. The fourth section explains need satisfaction. The fifth section focuses on perceptual learning style preferences.

2.1 Distance and Online Education

Distance education appeared to be an alternative for the individuals who were not able to attend face-to-face programs due to time, location or lifestyle restrictions. Videoconferencing can be stated as the earliest form of distance learning (O'Dowd, 2006). Distance education can be seen in several forms these days such as online learning, e-learning, video-conference learning, hybrid learning or independent study. According to previous studies on distance learning, there wasn't a considerable difference between distance learning and traditional learning when their effectiveness was considered (Means et al., 2009). However, synchronous online learning and asynchronous online learning can make use of a variety of web resources, new technologies and web-based applications, which makes online learning more useful than previous distance learning tools.

Due to technological advances, traditional learning environment has changed (Bax, 2011). Using technology has turned into an ordinary way to do many things; learning and interacting in a second language. Using technology in education has been such a normal part of the classroom that it is considered as the use of textbooks. As it is stated by Bax (2011); "A technology has reached its fullest possible effectiveness in language education when it has arrived at the stage of 'normalization', namely when it is used without our being consciously aware of its role as a technology, as a valuable element in the language learning process" (p.1)

Some advantages of online learning can be specified as its flexibility regarding availability, participation and the possibility to be customized in connection with the needs of the students (Croxton, 2014; Richardson et al., 2017). Online learning provides learners with the possibility of attending their classes wherever they are available by utilizing online learning sources in their personal computers or mobile devices. Thanks to this advantage, time and place limitations of learners to take specific courses can be reduced. Learners today can be categorized as Generation Z and digital natives, and these learners tend to make use of any electronic device near them in comparison with the generations before them (Krause et al., 2017). On the other hand, as students lack the face-to-face interactions not only between the instructor and the learner but also among the learners themselves, more efficient practices to help students to be engaged in online learning is necessary (Watts, 2016). According to Perveen (2016), there are three main categories in online learning, and these categories are synchronous learning, asynchronous learning, and hybrid learning (Perveen, 2016).

2.1.2 Synchronous Online Learning

Synchronous online learning can be explained as a learning activity where learners and instructors take part in learning simultaneously by means of video and/or conferencing (Ruiz, Mintze& Lepzig, 2006). Some other examples of online learning environment can be specified as video conferencing, live chats, teleconferencing, and lectures held as live-stream. According to studies, synchronous online learning environment results in effective learning experience (Clark, Strudler, & Grove, 2015). Since learners and the instructors do their lectures in the real time, learners can get instant feedback and communicate easily, which leads to increased learner engagement (Abdelmalak, 2015; Watts, 2016). Learners are able to listen to the lecturer and are exposed to input from native or non-native speakers of the language. Moreover, learners can be given simultaneous feedback by the instructor, which brings about meta-learning. As chat box can be used to write the answers to the instructors' questions, instructor and the peers can see the immediate construction of sentences (Perveen, 2016). In addition, communicating with instructors and other learners directly makes synchronous online learning similar to a traditional face-to-face education; moreover, students waste no time by travelling and they can participate the lectures from a distant place as they connect through the Internet.

The relationship between synchronous online learning and learners' increased engagement and motivation is certain since it is possible for instructors to observe the answers and reactions of the learners throughout the learning process (Hrastinski, 2008) A study indicating the idea that not only learners' engagement levels but also the quality of their learning is to be developed and increased also confirmed this belief (Wdowik, 2014).

Also, students feel less distant with their classmates and their instructors due to the real-time interaction among the students and their lecturer, and this results in a strong sense of community (Francescucci & Rohani, 2019). For example, tone of voice and facial expressions of the lecturer and peers help the students to have the human feel. Moreover, as it is possible to record the lessons, students can access and watch the lectures again to practice the material they have learned.

In synchronous online learning environment, students and instructors are able to interact with each other in addition to giving feedback (Giesbers, Rienties, Tempelaar, & Gijselaers, 2013). For instance, during synchronous online lessons, students can be put into groups in order to study on a certain subject or do exercises collaboratively just like they can do in a face-to-face environment. This can be possible by using digital technologies such as breakout rooms in Zoom.

According to a study conducted in higher education context by Yamagata-Lynch (2014), it can be concluded that compared to the asynchronous online courses, synchronous online courses are more likely to bring about more motivation due to learners' engagement in e-tivities, presence of both instructor and peers.

2.1.3 Covid-19 pandemic and emergency remote teaching. Online language learning research appeared in the 1990s due to the wider use of the Internet in the United States and Canada (Blake, 2011, 2013; Macaro et al.,2012; Warschauer, 1997). Online education has some drawbacks that can be listed as absence of instant communication, feeling of disconnection with peers though it has a lot of advantages such as flexibility in terms of time, location and cost. The problem gets greater for the learners who learn a language via online education. Although language learners need to improve their language skills in the target language, they cannot find much opportunity to practice the language in online learning environment. This may cause learners to lose their confidence as well as feel frustrated.

On December 31, 2019, in China, there was a pneumonia that couldn't be treated, World Health Organization (WHO) was informed about this serious health issue. The pneumonia was caused by coronavirus, and coronaviruses are known to cause infections such as common cold or more severe infections causing respiratory problems. (Mardiah, 2020). The new coronavirus disease was named as Covid-19 by WHO, and it was declared to be a global pandemic. Many countries in Europe, America and Asia reported that there had already been several coronavirus cases affecting their citizens (Mardiah, 2020). Mardiah (2020) mentions that the common symptoms of Covid-19 disease are cough, fever, tiredness, difficulty in breathing which may result in severe pneumonia. The fastest way to transmit illness is the droplets from coughing or sneezing. As Covid-19 pandemic was defined as a public health emergency, in most countries many public places including schools were closed.

The Covid-19 pandemic the world has been facing has had several effects on our lifestyle and changed the usual phase that has been experienced in the world for the past decades. Covid-19 pandemic has had an obvious impact on the economy, social life, politics in addition to education. In Turkey, the Higher Education Council and the Ministry of Education offered online education and online exam for all schools and higher education institutions. Therefore, synchronous or asynchronous lessons had to be carried out by all teachers including EFL instructors. Though there were immediate changes for learners and teachers due to pandemic, they were not ready to adapt to the online platforms. E-learning provides social distance as it restricts face-to-face interaction even though it cannot alter the pandemic (Murphy, 2020). Thanks to improvements in technology, some higher education institutions in Turkey started to conduct new instructions involving online education partially or fully. However, with the emergence of Covid-19, higher education institutions has been forced to employ online learning fully in order to continue instruction.

2.2 Synchronous Online Language Learning

Learning effectively can generally be described as establishing a stronger connection between learning processes such as teamwork, interaction and cooperation, and learning goals and results such as thinking critically and competency in problem solving (Watkins, Carnell, Lodge & Whalley, 1996). Hence, while forming and implementing an online language learning pedagogy, the importance of support to learners in order to achieve their goals and consequences that prevent frustration should ultimately be considered (McCloskey et al., 2013). While doing this, students can be asked to do group e-tivities which creates a collaborative learning environment supporting communicative approach of language; moreover, creating learner autonomy can be the aim during learning rather than a teacher-centered learning environment by enabling interaction. (Borg and Al-Busaidi, 2012).

There are several language learning styles facilitated in online learning. For instance, in a community of inquiry approach, in addition to teaching presence, being present socially and cognitively are also highlighted as essential elements to help a good learning experience in both synchronous and asynchronous online education (Garrison, Anderson&Arecher, 1999). Synchronous online learning facilitates a conversational framework for direct communication that highlights the importance of direct feedback from the instructor as well as asking questions to be answered (Laurrilard, 2013).

Ongoing Covid-19 pandemic starting at the beginning of 2020 forced governments and institutions to stop face-to-face education in all levels of education nearly in all the countries (Bozkurt et al., 2020). A need to find alternative ways of teaching and interaction has been necessary for English language teachers as well as for the instructors teaching in other disciplines. With the recent technological improvements, teachers now have more alternatives to reach students, and synchronous online classes that use video-conference software are possible to be used (Peachey, 2017).

A recent study conducted by Rinesko and Muslim (2020) showed that the attitude of EFL learners studying at university is positive about synchronous online discussions since it is easier for them to discuss, plan the assignments, share their ideas and answer through these discussions. On the other hand, synchronous online language classroom environment has many differences from face-to-face classrooms especially in terms of location difference of instructors and learners. It is not easy for them to see each other’s faces due to the sizes of screen they use to interact. In addition to several possible technical problems, students are usually distracted by other environmental factors that make it hard for them to concentrate (Peachey, 2017) Due to these differences, instructors may be affected negatively and they may not create a suitable environment for language learning as well as deep communication. Moorhouse (2020), explains his view for synchronous online classroom as "The VCS sessions are still more 'bumpy' and more teacher-centered than face-to-face sessions. Group and whole- class discussions are characterized by longer silences and shorter student responses" (p. 2). Payne also states the difficulties in online learning as he quotes; "it is difficult to have an interactive L2 conversation with more than about four to six individuals' and 'conversational turn-taking in a video conference is challenging enough when everyone is speaking their first language (L1), let alone a L2" (Payne, 2020, p. 246).

2.2.1 Online platforms used in EFL classes. Due to pandemic, instructors and institutions have paid a lot of attention to the online learning platforms where they are able to reach the students, and various tools to be used in online lessons were adopted according to the needs of the schools. Some popular tools that can be used in synchronous online lessons are chat conversations, audio or video conferencing, whiteboard presentation and polls (Mardiah, 2020). In the spring of 2020, Covid-19 pandemic brought about sudden restrictions, and educational institutions didn't have enough time to provide their teacher with necessary training. Teachers might not be ready to teach real-time in an online setting as there are some requirements regarding having new digital skills (Starkey, 2020). Pedagogical skills, content skills, social skills, communication skills, and technological skills are essential for instructors if they want to teach effectively in online setting (Albrahim, 2020).

Instructors and institutions prefer video-conferencing tools which enable real-time interaction through video, audio and chat. Moallem (2015) shows the cause of this demand as "the opportunity for a high level of real-time, students-to-students and students-to-instructor interaction in online learning environments [offering] ... virtual, yet interactive learning experiences that are closer to what is possible in face-to-face learning environments" (p.55).

One of the most common and easy-to-use applications used in online setting has been Zoom, which includes a lot of features including breakout rooms, screen and audio sharing, chat box and polls. Moreover, there are some non-verbal icons in Zoom which students can use when they have a question, or when they agree or disagree with something during the lesson. With these icons, students attention in the lesson can also be predicted. According to Wang and Loewn (2016), with the help of non-verbal functions, teachers are able to give corrective feedback to their students. Also, students can interact with the instructor privately by using chat box. Zoom also has a breakout room function. In breakout rooms, students can do several speaking practices, do exercises collaboratively, or negotiate with their peers as small groups or pairs during the lesson. As Nation (2007) suggests, student-to-student interaction and meaning focused output are very important while learning a language.

2.3 Online Learner Satisfaction

Learner satisfaction is identified as "learner-reported feelings about interaction with instructors and peers, course structure, institutional support, and flexibility" (Yukselturk & Yildirim, 2008, p. 52). The educational experience of learners is influenced by the satisfaction of them during learning process (Amro, 2014). Moreover, learner satisfaction can be stated as an essential factor while deciding how successful a learning program is (Wiechowski & Washburn, 2014). Kuo (2010) claims that when learners are satisfied, in addition to learners' motivation, completion rates in the programs are also higher.

In the research that focused on the quality of online learning, learner engagement and learner satisfaction have been studied continuously (Biner et al. 1994; Rienties et al 2018). There has been a sudden change in the learning environment, and online learning has been as common as traditional face-to-face classrooms, and studies on online learner satisfaction is related to the future of both learning and teaching in online environments. Learners' satisfaction and outcomes are regarded as reliable indicators when evaluating the quality of online learning environments (Sampson, 2010). Moreover, educational institutions also want to learn if the students are contended with the quality of their learning experience (Kember and Ginns, 2012). Online learner satisfaction was defined by Wang (2003) as "a summary affective response of varying intensity that follows asynchronous e-learning activities, and stimulated by several focal aspects such as content, user interface, learning community, customization, and learning performance" (p77).

In this study, what online learner satisfaction concerns with is learners' satisfaction in the synchronous online programs in terms of taking the courses, their feelings regarding the programs' quality, and learners' likelihood of attending synchronous online programs in the future. There are different factors affecting online learner satisfaction. Some of these factors are learner characteristics, instructor characteristics, and technology factors (Yukselturk & Bulut, 2007; Hong, 2002; Arbaugh& Duray, 2002). The satisfaction of learners with their online learning experience will probably affect the possibility of attending other online programs in the future (Bayrak et al., 2020). If the factors affecting student satisfaction in online programs are identified, these programs may be improved (Kaufmann, 2015; Kurucay & Inan, 2017).

According to Woods (2002), not only quantity but also quality of interaction with the teacher and the other students is much more important for the student satisfaction in online education environment compared to traditional education setting. In a study conducted by Swan (2001), satisfaction of university level students who were attending an online program was examined, and the findings of the study showed that there are three factors that influence satisfaction in online courses, and these factors are contact and feedback from the teachers, active interaction among students, and certainty in course design. According to Seaberry (2008), there are also some factors affecting the online learner satisfaction, and these factors are interaction with the teacher and the peers, immediate feedback, and interaction with the content. In this study, online learner characteristics centering affective factors were examined. The affective factors to be discussed in the following sections are need satisfaction and perceptual learning style preferences.

2.4 Need Satisfaction

Motivation of EFL learners and their ability to learn autonomously as well as efficiently is vital to reach necessary learning outcomes. The effectiveness of a teacher doesn't affect the students' language learning if they don't want to learn the language outside their learning environment (Harmer, 2001). The fact is that having intrinsic motivation is not common when students learn a foreign language for educational reasons. The main cause of EFL learning may be stated as concerns about academic consequences. Arousing self-determined motivation in students is not easy for EFL teachers. In order to better understand learners' motivation, the essential needs of people to indicate what they desire should be cleared (Pintrich, 2003).

The self-determination theory (SDT), which mainly studies the connection between basic human needs and social-cognitive approaches, makes it possible to analyze the relationship between human needs and motivation. Moreover, according to studies on SDT regarding education, more successful learning and higher academic success is achieved by autonomous motivation compared to controlled motivation (Deci, Ryan& Williams,1996; Taylor, et al., 2014).

2.4.1 Self-determination theory. SDT can be described as a macro theory of motivation and psychology which considers that individuals look for challenges and new experiences for mastery and integration (Deci&Ryan 1985, 1991). SDT (Deci&Ryan, 1985) states that the types of motivation can be named as intrinsic motivation, extrinsic motivation and amotivation. Intrinsic motivation means that an individual performs an action for innate satisfaction and happiness caused by the activity, not for external reasons. In EFL online learning environment classroom, this can be exemplified as a student who engages in the online EFL lessons due to the joy and satisfaction during the lessons. On the other hand, amotivation is the opposite of intrinsic motivation, and it means that an individual doesn't have an aim to do an action or cannot find a connection between the activity and the expected result. (Deci& Ryan 1985, 1991). Extrinsic motivation, which is between amotivation and intrinsic motivation, means that individual do actions due to external reasons which can be rewards or punishments. An individual with extrinsic motivation performs an action in order to stay away from a negative result as well as to achieve a positive result.

SDT also concerns people's psychological needs for autonomy, competence and relatedness. According to SDT, individuals get motivated when their psychological needs are fulfilled in these areas, and the satisfaction of their basic psychological needs for autonomy, competence and relatedness, individuals' performance and creativity increase; on the other hand, when the basic psychological needs are not fostered, this brings about decrease in motivation and well-being. Studies on SDT suggest that these needs are crucial regarding people's psychological development and well-being (Ryan, Sheldon, Kasser & Deci, 1996). Autonomy can be described as feeling of free will to do activity. (Ryan & Connell, 1989). Individuals can control the beginning and direction of an activity, and in this way they adjust their behavior. (Ryan & Powlson, 1991). When online learning is considered, the flexibility of time and location, which provides the learners with the possibility of attending courses from different places, enables learners to be more independent, autonomous and motivated, so online learner satisfaction of students may increase. In a study carried out by Chou and Lin (2005), a technology-mediated virtual learning environment (TVLE) was used for a group of learners and they were compared with the face-to-face learners group. The study concluded that learners in TVLE group felt greater satisfaction, became more successful and encountered a better learning environment compared to their peers in face-to-face group. Competence can be defined as feeling of effectiveness in an individual's actions (Deci & Ryan, 1985) in addition to feeling of effectiveness during interaction and difficult assignments and achieving desired results. (White, 1959; Skinner, 1995). In an online learning environment, the problems that may have an influence on competence of a learner can be using a computer which requires certain capabilities and being able to perform self-regulated learning strategies. Many problems faced by learners in online learning environment stems from having technical problems and too much information (Chen et al.,2010). Technical issues are claimed to be one of the most important causes of dropping online courses as some studies suggest. (Tait, 2003). Students may feel nervous and stressed if they are not competent while using the necessary technologies or when they face with technical problems (Motteram & Forrester, 2005). Therefore, students' readiness regarding technology, learning management and pedagogical practice should be considered by the teachers who want to guarantee satisfaction in an online learning environment (Vonderwell & Zachariah, 2005). Relatedness can be defined as feeling of connected with the others in addition to feeling of belonging in a social environment. (Deci & Ryan, 1991; Ryan & Deci, 2000). In terms of online learning environment, it is important to remember that in contrast to traditional face-to-face learning environment, learners are rather isolated. In their courses held in an online setting, learners can communicate and interact with their instructor and peers by using chat box or breakout rooms as well as speaking. According to Carr (2000), the rates of completing online courses rise from 62% to 90% when the online learning system is more interactive, and learners are guided by their instructors effectively. Interaction between the instructor and learners in addition to interaction between students and the other students in the classroom are considered as very important while predicting perceived learning (Marks et al., 2005).

The detailed findings of a study conducted by Hu (2016) showed that learners' autonomous motivation increased and their controlled motivation slowly moved to autonomous one when their basic needs are satisfied, and these changes led to desirable learning performance as well as academic success in EFL learning context. Specifically, the study also showed that relatedness was necessary in EFL learning regardless students' level of English and their motivation in learning, and competence was found to be vital while motivating controlled learners; on the other hand, autonomy was especially essential for autonomous learners.

In terms of synchronous online education, not much research has been conducted to show the relationship between learners' basic psychological needs and their online learning satisfaction. One of the aims of the present study is to investigate if satisfaction of basic psychological needs of EFL students affect their online learner satisfaction or not.

2.5 Learning Style Preferences

How people get and make use of knowledge can be the definition of the concept of learning styles. Learning style preference is a term that explains how learners approach to learning situations in addition to explaining whether there are some differences in the way students learn. Innate characteristics of learners concerning what they prefer as teaching instructions are assumed to be learning styles (Al-Hesabi, 2012) Studies related to the subject of learning style preferences can be found almost four decades ago, which makes this subject a relatively old one. (Cassidy, 2004). Despite the awareness of the educators about how important it is to appreciate learning styles and preferences of learners, some researchers are still in doubt about their impact on learning (Pashler, McDaniel, Rohrer, & Bjork, 2008). In the existing literature, there is limited research related to the affect of learning style preferences on second language online classes. However, it is definite that studies on learning have provided some important insights in learning; therefore, it is essential to begin with explaining learning style preferences.

Learning styles are described as affective and psychological characteristics which show the way individuals see, communicate and react to the learning environment (Keefe and Farrell, 1990) According to Dunn (1990), learning styles are mixture of various factors such as environment, emotions, sociology, physical conditions, and psychology, all of which helps people to get, collect, and facilitate knowledge and abilities. Perceptual learning styles are defined as ‘a term that describes variations among learners in using one or more senses to understand, organize and retain experience’ (Reid, 1987, p.89). In addition, Reid (1987) classifies perceptual learning styles of individuals learning English as a second language, and these learning styles are auditory, kinesthetic, visual and tactile learning styles.

2.5.1 Perceptual learning style preferences. The term learning style can be defined as characteristics of an individual in learning situations; also despite the changes in the content, the characteristics don’t change, so it is claimed that learning style is “applicable to all areas of education” (Brandt, 1990, p.11). Although there are several types of learning style preferences, three main groups of learning preferences can be mentioned related to the area of foreign language learning (Reid, 1995); these categories are perceptual learning styles, cognitive learning styles and affective learning styles. ‘Perceptual learning styles’ refers to sensual modes that are employed while arranging information and communicating with the surroundings (Dunn, R., 1983). In the present study, perceptual learning style preferences are focused. Reid (1995) described perceptual and sociological learning style preferences and the learners with these learning types. Perceptual learning style preferences are visual, auditory, tactile and kinesthetic learning styles; sociological learning style preferences are individual and group learning styles.

2.5.1.1 Visual learning style preference: Students with a visual learning style preference can learn well when they see the information in books or other types of visual materials such as the chalkboard or workbooks. It is easier for them to remember and comprehend information when they read them. Compared to the auditory learners, students who have visual learning style need less oral explanation, and they can learn by reading from a book.

2.5.1.2 Auditory learning style preference: Students with auditory learning style preference learn best when they hear oral explanation and when they hear someone speak. Reading aloud while learning new information helps them remember the new information. Lectures, discussions in the classroom or audios help them learn. They also improve when they teach to other students or talk to their teacher.

2.5.1.3 Tactile learning style preference: Students with tactile learning preference learn well when they touch something; therefore, hands-on experience gives them the chance to take part in learning. When they study on experiments, build models, or touch materials, they learn best. Also, in a lesson, when they write notes, this helps them understand the new material.

2.5.1.4 Kinesthetic learning style preference: Students with kinesthetic learning preference learn well if they participate in the lesson actively. When they are active in a classroom, it gets easier for them to remember the new information.

2.5.1.5 Individual learning style preference: Students with individual learning preference learn well when they study independently and on their own. It is easier for them to remember the new material when they learn it by themselves.

2.5.1.6 Group learning style preference: Students with group learning preference learn well when they work with one or more students as a group. Working with others help them remember the new information easily.

There are self-reporting questions in perceptual learning style questionnaires, and these questions show what students for selected elements. Perceptual learning style preferences (PLPS) survey was developed by John Reid in 1984. The six categories that have already been explained above were utilized to find out ESL students preferred learning styles. The study was carried out among the study who were studying in English programs across the USA. When the results of the Reid's study were published (1987), they showed that:

- Most ESL students were more tactile and kinesthetic than native speakers.
- ESL learner who were from different cultural or language backgrounds showed differences with regards to their learning styles.
- Learners' preference for learning style change due to their learning environment.

The research findings on learning style preferences are claimed to confirm that most students are able to accurately determine their learning style (Dunn, 1984). According to Dunn, when students' learning style preferences are suitable for the learning environments or learning methods, learners become more successful, and she claims that "their preferences must be their strengths" (Dunn, 1984, p.13.)

Reid (1987) suggested that perceptual learning style preferences of EFL learners differ according to nationality, education level, gender, the time they spend in the academic environment in the US. However, how perceptual style preferences affect language learning motivation wasn't examined. According to a study conducted by Tai (2013), in which he investigated the relationship between learning style preferences of students and their motivation to learn English, auditory, tactile and kinesthetic learning styles was found to have a positive relationship with motivation in learning English.

In the online learning context, there is limited research. According to Neuhauser (2002), there was not a significant impact of learning style preferences of learners on their learning performance when online learning environment and face-to-face education were compared. On the other hand, according to a study conducted by Murray (2004), students studying in an online learning environment showed a learning preference for kinesthetic learning style. A qualitative study carried out by Gülbahar and Alper (2011) showed that there are eight dimensions of learning style preferences to take into consideration in online learning environments, and these are individual, collaborative, auditory, visual, concrete, abstract, logical, and sensual learning style preferences. According to Gülbahar and Alper (2011), "online learning environment possesses passive learning features when a student reads, listens, and analyzes graphics, and consist of active learning features when students discuss and express themselves through writing in various platforms" (p. 275). They suggested that teaching styles of instructors in online environments needed to be relevant to the online learning preferences of students, which could be achieved by mixture of all suitable methods.

CHAPTER 3

Methodology

3.1 Overview

In this chapter, detailed information related to methodological process that is carried out to get the findings. There are four sections in this chapter. It starts with research questions of the study; after that, information about the participants and setting is mentioned. Then, data collection procedures are explained. Finally, the limitations of the study are mentioned.

As it was stated earlier in the introduction part, the aim in this study is to explore the relationship between EFL online learners' gender, their proficiency level of English, some individual affective characteristics, which are need satisfaction, perceptual learning styles, and EFL learner satisfaction in a synchronous online learning environment since above-mentioned affective characteristics, perceptual learning style preferences, and other characteristics of learners may predict online learner satisfaction. In the present research, dependent variable is online learner satisfaction whereas gender, proficiency level of English, need satisfaction and perceptual learning styles are independent variables.

3.2 Research Questions

The present study aims to answer the following research questions:

1. Does EFL online learner satisfaction significantly differ in terms of;

   a) students' gender,

   b) students' proficiency level of English,

   c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic),

   d) students' preferred social learning styles (individual and group)?

2. Is there a correlation between;

   a) EFL students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group),

   b) EFL students' need satisfaction (autonomy, competence, and relatedness),

c) EFL students' gender,,

d) EFL students' proficiency level of English

and their online learner satisfaction?

3. Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?
4. Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?

The aim in this study is to explore the relationship between EFL online learners' gender, their proficiency level of English, some individual affective characteristics, which are need satisfaction, perceptual learning styles, and EFL learner satisfaction in a synchronous online learning environment at higher education. In order to find answers to the presented research questions, the quantitative method was implemented. In quantitative research, the researcher starts by asking specific questions related to the research problem; then, gathers numerical data from participants; after that, uses statistics and analyses the numerical data; finally, makes objective explanations regarding the relationship among the variables in the study (Creswell & Clark, 2007). According to Babbie (2010), the focus in quantitative research is collecting numerical data and than making predictions with regard to the data.

Creswell (2002) states that there are three main research designs to use in quantitative research method, and these are experimental design, correlational design and survey design. In the present study, a correlational design is used to look for the research goals. Creswell (2002) claims that the relationship between variables can be predicted and explained by utilizing correlational design. Two or more variables are related and how they affect each other is found out in correlational design (Creswell, 2002). Explanation and prediction are the two main correlational designs. In this study, prediction correlational design is utilized. According to Creswell (2002), prediction research design intends to recognize variables forecasting an outcome. Behaviors and attitudes that can be observed in the future can be predicted with the help of predictive studies. (Creswell, 2002).

3.3 Setting and Participants

In the process of selecting the people to study, a researcher needs to choose a population. A group of people sharing the same traits are named as population (Creswell, 2002). Considering the goals of this study, the population was chosen as students who learn English as a foreign language. Then, EFL learners at preparatory class were agreed as a subgroup of the population aiming to narrow down the research area.

As a result, this research was carried out with students who learn English at an English preparatory program at a school of foreign languages of a state university located in Istanbul, Turkey. The preparatory program has about 3100 students most of whom are Turkish EFL learners. The major goal of the program is to teach English to the students who are the leaders and entrepreneurs of the future as well as providing students with sufficient language skills that will help them to interact in their educational life in the following years when they start their faculties. At the beginning of the year, before starting the preparatory program, students enter the proficiency exam. They need to get an average of 60 to pass the exam. TOEFL exam and PTE are the alternative exams students can take. The average score for TOEFL exam is 72, and the average score for PTE is 90. Students who get the average scores continue their education in their faculties. However, if students are not able to pass the proficiency exam, they took the placement exam held by the school of foreign languages; then, they were placed into the suitable level by considering the results they get in the placement test. There are four levels of EFL learners in the program in the first term which are A1, A2, B1 and B1+. In the second term, there are three levels which are A2+, B1 and B1+. Students starting in the program are placed in the classrooms according to their level, and continue the first term in the same classroom. In the second term, students who don’t fail due to absence continue the program. The program consists of main course, reading, writing, and listening and speaking lessons. To summarize, all language skills are combined in the program to prepare students for the proficiency exam.

The present research was conducted in 2020-2021 academic year. Before the study was conducted, permissions to conduct the study were taken from the ethical committee (see Appendix 6). Due to Covid-19 restrictions, schools and universities in Turkey were closed, education continued in online settings. In this study, the participants were 176 Turkish EFL students during the second term of the 2020-2021 academic year. Attendance was obligatory when the study was held, so students attended the lessons regularly to enter the proficiency exam. The participants who answered the questionnaires consisted of 80 females and 96 males who mostly aged between 18 to 20 years (N = 168). 40 of the students were A2+ level, 79 of them were B1 level, and 57 of them were B1+ level.

Table 1

Demographic Characteristics of the Participants

		N	%
Gender			
	Female	96	54,5
	Male	80	49,5
Total			
Age			
	18-20	168	95,5
	21-30	6	3,4
	31-40	2	1,1
Total		176	100
Level of English			
	A2+	40	22,7
	B1	79	32,4
	B1+	57	44,9
Total		176	100

In social and behavioral sciences, there are four sampling procedures, and these sampling strategies are probability sampling, purposive sampling, convenience sampling, and mixed-method sampling (Teddlie & Yu, 2007). Since the present study employed mixed-methods design, it consists of two parts. In the quantitative part of this study, the sampling procedure to be employed was convenience sampling. Teddlie and Yu (2007) defines convenience sampling as "drawing samples that are both easily accessible and willing to participate in a study" (p.78). Since there were restrictions in face-to-face education due to pandemic, it was difficult to reach participants. Moreover, the preparatory program where the study was carried out started the online education. Because of the limitations caused by the pandemic, collecting data from the students who are studying at the same program was convenient. There are two sub-categories of convenience sampling, which are captive samples and volunteer sample (Teddlie & Yu, 2007). In the present study, participants were voluntary to participate. 176 students agreed to respond to the questionnaires after read the consent form.

3.4 Procedures

3.4.1 Data Collection Instruments. In the present study, the data collection tool was a questionnaire. A questionnaire is a data collection tool that is presented to a group of individuals at a specific time for a certain aim, and it is administered directly. (Ary, Jacobs & Sorensen, 2010) Measurement is the major aim of a questionnaire. (Oppenheim, 1992). Questionnaires are the main instruments in data collection process. The main reasons for using a questionnaire in a research are that it requires a short period of time, the respondents don't face with long writing, it is not difficult to continue, and it is helpful in target hypotheses (Oppenheim, 1992).

In order to gather the data, an online questionnaire was administered via Google Forms as it was more efficient and time effective since there were restrictions due to Covid-19 pandemic. The advantage of questionnaires is that they are easy to form (Dörnyei and Taguchi, 2009). In this study, the questionnaire was utilized to measure students' online course satisfaction, their psychological needs and perceptual learning styles. 176 students completed the questionnaire anonymously. At the beginning of the questionnaire, demographic data were also collected.

3.4.1.1 Perceptual learning style preference questionnaire. The questionnaire was developed by Reid (1987). It has 30 items, and it was designed particularly for foreign language learners. In the questionnaire, there are five statements for each of four learning style preferences which are visual, auditory, kinesthetic, tactile, and two social aspects of learning which are group learning, and individual learning. The questionnaire uses a 5-point Likert-scale, ranging from ‘strongly disagree’ to ‘strongly agree’. Likert Scale is described as a tool that “asks individuals to respond to a series of statements by indicating whether they strongly agree (SA), agree (A), are undecided (U), disagree (D), and strongly disagree (SD) with each statement” (Seliger & Shohamy, 1989, p. 173). Without changing the content, the questions were translated from English to Turkish by two experienced instructors who work at the school of foreign languages a state university. Then, the translation was reviewed by three instructors, and the necessary changes were made. Perceptual learning style preferences questionnaire by Reid was chosen since it was suitable for foreign language learners.

3.4.1.2 The scales of the balanced measure of psychological needs. In order to assess students’ need satisfaction, the Balanced Measure of Psychological Needs questionnaire (BMPN; Sheldon & Hilpert, 2012) was administered. In the questionnaire, there are sets of six statement on three psychological needs which are relatedness, competence, and autonomy: relatedness (items 1-6), competence (items 7-12), autonomy (items 13-18). According to reliability analysis of BMPN, it was found that “coefficients of .71 and .85 for positively and negatively worded relatedness, .71 and .70 for positively and negatively worded competence, and .69 and .72 for positively and negatively worded autonomy; also, after reverse scoring the negatively worded items, reliabilities for BMPN autonomy, competence, and relatedness were .78, .79, and .78, respectively” (Sheldon & Hilpert, 2012, p. 442). Without changing the content, the questions in the scale were translated from English to Turkish by two experienced instructors who work at the school of foreign languages a state university. Then, the translation was reviewed by three instructors, and the necessary changes were made.

3.4.1.3 Online course satisfaction scale. In order to measure the online learner satisfaction, Online Course Satisfaction Scale was administered (Bayrak, Tibi and Altun, 2020). Bayrak, Tibi and Altun (2020) claim that the questionnaire was a “reliable, valid, and practical instrument to measure online students’ satisfaction” (p. 117). There are 10 items in the questionnaire. Both English and Turkish versions of the questionnaire are presented. The necessary permission for using the questionnaire was taken by researchers (see Appendix 6).

3.5 Data Collection Procedures

To collect the quantitative data, the researcher first got permission from the director of the School of Foreign Languages. The data were gathered via an online questionnaire platform Google forms. The researcher informed the instructors about her study and kindly asked them to share the link for the questionnaire with their students during their online lesson. Teachers shared the link with the students and gave them 20 minutes to answer the questions. Data collection process continued for one week.

The data collected by the questionnaire were analyzed by using SPSS 23.0. Shapiro- Wilk was used to test the conformity of the data with the normal range.

Table 2

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Online Learner Satisfaction	.075	176	.017	.949	176	.000
Auditory Learning Style	.103	176	.000	.974	176	.003
Visual Learning Style	.086	176	.003	.982	176	.025
Tactile Learning Style	.099	176	.000	.976	176	.004
Kinesthetic Learning Style	.096	176	.000	.956	176	.000
Individual Learning Style	.099	176	.000	.963	176	.000

Group Learning Style	.062	176	.098	.983	176	.032
Competence	.092	176	.001	.984	176	.038
Relatedness	.104	176	.000	.983	176	.030
Autonomy	.081	176	.007	.979	176	.010

As displayed in the table 2, the scores of Online Learner Satisfaction ($p<0.05$), Auditory Learning Style ($p<0.05$), Visual Learning Style ($p<0.05$), Tactile Learning Style ($p<0.05$), Kinesthetic Learning Style ($p<0.05$), Individual Learning Style ($p<0.05$), Group Learning Style ($p<0.05$), and Competence ($p<0.05$), Relatedness ($p<0.05$), and Autonomy ($p<0.05$), are in a normal range.

3. 6 Data Analysis Procedures

In this study, quantitative data analysis technique was used in order to answer the research questions. All statistical analysis was computed through the Statistical Package for Social Sciences (SPSS). Descriptive statistics was required to analyze the quantitative findings gathered via questionnaire. In descriptive statistics, frequency and variability were analyzed in order to organize the demographic features of the students. Descriptive statistics methods including mean and standard deviation were used to describe gender, proficiency level of English, learning styles (perceptual learning styles and sociological learning styles) and the level of effect for online learner satisfaction. Also, correlation analysis was calculated for online learner satisfaction, perceptual learning styles, basic psychological needs, gender and proficiency level of English. Additionally, regression methods were calculated for online learner satisfaction, learning styles and basic psychological needs. Table 3 presents the overview of research questions and the procedures that are held for each question.

Table 3

Overview of Research Questions and Corresponding Procedures

Research Questions	Data Collection Instruments	Data Analysis
1. Does EFL online learner satisfaction differ in terms of;		
a) students' gender,	Questionnaire (Demographic Information and Online Learner Satisfaction Scale)	Descriptive Statistics (means and standard deviations) t-test for Equality of Means
b) students' proficiency level of English,	Questionnaire (Demographic Information and Online Learner Satisfaction Scale)	Descriptive Statistics (means and standard deviations) One-Way *ANOVA*
c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic),	Questionnaire (Perceptual Learning Styles Questionnaire and Online Learner Satisfaction Scale)	Descriptive Statistics (means and standard deviations) One-Way *ANOVA* Post Hoc Test, Games – Howell
d) students' preferred social learning styles (individual and group)?	Questionnaire (Perceptual Learning Styles Questionnaire and Online Learner Satisfaction Scale)	Descriptive Statistics (means and standard deviations) One-Way *ANOVA*
2. Is there a correlation between;		

a) EFL students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group) and EFL online learner satisfaction, b) EFL students' need satisfaction (autonomy, competence, and relatedness) and EFL online learner satisfaction, c) EFL students' gender and EFL online learner satisfaction, d) EFL students' proficiency level of English and EFL online learner satisfaction?	Questionnaire (Demographic Information, Perceptual Learning Styles Questionnaire, The Balanced Measure of Pyschological Needs and Online Learner Satisfaction Scale)	Pearson Correlation
3. Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?	Questionnaire (The Balanced Measure of Pyschological Needs and Online Learner Satisfaction Scale)	Regression (Enter Method)
4. Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?	Questionnaire (Perceptual Learning Styles Questionnaire and Online Learner Satisfaction Scale)	Regression (Enter Method)

3.7 Reliability

Ensuring the reliability of the questionnaire of a study has a crucial importance for the results of the study. Cronbach's alpha coefficient of scales in the present study was found by a reliability analysis of the questionnaire items. Kılıç (2016) states that if Cronbach's alpha value is in the range of 0.61-0.80, it is considered moderate reliability and acceptable, and Cronbach's alpha values in the range of 0.8-1.00 is considered high reliability. Reliability scores are presented in Table 4.

Table 4

Overview of the Reliability of the Scales Used in the Questionnaire

Scale	Reliability Coefficient
1. Online Course Satisfaction Scale	Cronbach's alpha = 0.90
2. Perceptual Learning Style Preference Scale	Cronbach's alpha = 0.81
3. Need Satisfaction Scale	Cronbach's alpha = 0.63

3.7 Limitations

Since data was collected in an online setting, the instructors who shared the questionnaire link with their students gave them 20 minutes to answer the questions during the lessons. However, they weren't sure whether all the students in the class completed the questionnaire. Therefore, data collected from the participation of 176 students. As the data were gathered towards the end of the spring semester, though students were in different proficiency levels (A2+, B1 and B1+), their level of English was close to each other. The difference between students' proficiency level of English in online learner satisfaction could have been analyzed better if this study had been conducted in the first term of the preparatory program.

Although questionnaires were used to gather data, there could be other additional instruments for data collection such as interviews or journals. When the participants are considered, teachers could also be part of the study in order to provide a deeper comprehension of the issue.

CHAPTER 4

Findings

In this chapter, results of the research questions are covered. The goal of this study is to explore the relationship between some individual affective characteristics, which are need satisfaction, perceptual learning styles, and EFL learner satisfaction in a synchronous online learning environment.

The present study aims to answer the following research questions:

1. Does EFL online learner satisfaction significantly differ in terms of;
   a) students' gender,
   b) students' proficiency level of English,
   c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic),
   d) students' preferred social learning styles (individual and group)?
2. Is there a correlation between;
   a) EFL students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group),
   b) EFL students' need satisfaction (autonomy, competence, and relatedness),
   c) EFL students' gender,
   d) EFL students' proficiency level of English
   and EFL online learner satisfaction?
3. Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?
4. Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?

4.1 Findings for the Research Questions

Below are the findings of the data regarding the research questions of this study.

Findings for Research Question 1: . Does EFL online learner satisfaction

significantly differ according to; a) students' gender, b) students' proficiency level of English, c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic), d) students' preferred social learning styles (individual and group)?

a) Gender

When quantitative data were analyzed, no major difference was found between female and male students regarding their online learner satisfaction. As Table 5 shows, mean score of female students (*N*=80) was 3.97 while for male students (*N*=96) it was 3.85. Female students' online learner satisfaction score was slightly higher than male students, but this was not found to be statistically significant (p = 0.28). (see table 6)

Table 5

Descriptive Statistics for Online Learner Satisfaction and Gender

	Gender	N	M	SD
Online Learner Satisfaction	Female	80	3.97	.76
	Male	96	3.85	.74

Table 6
Results of t-test for Equality of Means regarding Online Learner Satisfaction and Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Online Learner Satisfaction	Equal variances assumed	.28	.59	1.06	174	.28	.12	.11
	Equal variances not assumed			1.06	166.63	.29	.12	.11

b) Proficiency level of English

As it is presented in table 7, students who were studying in B1+ level had the highest online learner satisfaction (*M*= 3.95). In addition, the mean score for online learner satisfaction for all levels was high (*M*= 3.91).

Table 7

Descriptive Statistics for Online Learner Satisfaction and Proficiency Level of English

	N	M	SD	Range
A2+	40	3.83	0.87	1.40-5.00
B1	79	3.91	0.80	1.30-5.00
B1+	57	3.95	0.58	2.50-5.00
Total	176	3.91	0.75	1.30-5.00

Table 8

Results of ANOVA for Proficiency Levels of English regarding Online Learner Satisfaction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.36	2	.18	.32	.72
Within Groups	99.09	173	.57		
Total	99.45	175			

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

However, as Table 8 shows, there was no statistically significant difference among the students according to their proficiency level of English (p = 0.72).

c) Students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic)

When quantitative data were analyzed, and as table 9 shows, students with auditory learning style (N=58) had the highest score (*M*=4.14). Mean score of students with more than one learning style (*N*=20) was 4.02. In addition, mean score of students with visual learning style (N=31), tactile learning style (N=14), and kinesthetic learning style (N=53) were 3.60, 3.92 and 3.79 respectively.

As it is presented in table 11, there was a significant difference in the mean scores of students with auditory learning style and students with visual learning style in terms of their online learner satisfaction ($p = 0.001$). There wasn't a significant difference among the students with other sensory learning styles with regards to their online learner satisfaction. (see table 10)

Table 9

Descriptive Statistics for Online Learner Satisfaction and Sensory Learning Styles of Students

	N	M	SD	Range
Auditory	58	4.14	.69	1.40 -5.00
Visual	31	3.60	.52	2.40-4.50
Tactile	14	3.92	.87	2.00-5.00
Kinesthetic	53	3.79	.79	1.30-5.00
Two or more learning styles	20	4.02	.86	1.70-5.00
Total	176	3.91	.75	1.30-5.00

Table 10

Results of ANOVA for Sensory Learning Styles of Students regarding Online Learner Satisfaction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.10	4	1.77	3.28	.013
Within Groups	92.35	171	.54		
Total	99.45	175			

Note. *$p < 0.05$

Table 11

Results of Post-Hoc Test for Multiple Comparisons of Sensory Learning Styles of Students regarding Online Learner Satisfaction

		Mean Difference	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Auditory	Visual	.54*	.13	.00	.17	.90
	Tactile	.22	.25	.89	-.53	.98
	Kinesthetic	.34	.14	.10	-.04	.74
	Two or more learning styles	.11	.21	.98	-.50	.73
Visual	Auditory	-.54*	.13	.00	-.90	-.17
	Tactile	-.32	.25	.70	-1.08	.44
	Kinesthetic	-.19	.14	.66	-.59	.20
	Two or more learning styles	-.42	.21	.30	-1.05	.20
Tactile	Auditory	-.22	.25	.89	-.98	.53
	Visual	.32	.25	.70	-.44	1.08
	Kinesthetic	.12	.25	.98	-.64	.90
	Two or more learning styles	-.10	.30	.99	-.98	.77
Kinesthetic	Auditory	-.34	.14	.10	-.74	.04
	Visual	.19	.14	.66	-.20	.59
	Tactile	-.12	.25	.98	-.90	.64
	Two or more learning styles	-.23	.22	.83	-.87	.40
Two or more learning styles	Auditory	-.11	.21	.98	-.73	.50
	Visual	.42	.21	.30	-.20	1.05
	Tactile	.10	.30	.99	-.77	.98
	Kinesthetic	.23	.22	.83	-.40	.87

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

d) Students' preferred social learning styles (individual and group)

When quantitative data were analyzed, as it is presented in table 12, mean score of students with both group learning style and individual learning style (N= 16) was 4.26, and it was slightly higher than mean score of students with individual learning style (N=77), which was 3.91. In addition, mean score of students with group learning style (N=83) was 3.84. Table 13 shows that there wasn't a significant difference among the students with social learning styles with regards to their online learner satisfaction (p = 0.11)

Table 12

Descriptive Statistics for Online Learner Satisfaction and Social Learning Styles of Students

	N	Mean	SD	Range
Individual	77	3.91	0.69	1.80- 5.00
Group	83	3.84	0.80	1.30-5.00
Both	16	4.26	0.68	2.40-5.00
Total	176	3.91	0.75	1.30-5.00

Table 13

Results of ANOVA for Online Learner Satisfaction and Social Learning Styles of Students

	df	F	Sig.
Between Groups	2	2.17	.117
Within Groups	173		
Total	175		

Findings for Research Question 2: . Is there a correlation between; a) EFL students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group) and their online learner satisfaction, b) EFL students' need satisfaction (autonomy, competence, and relatedness) and their online learner satisfaction, c) EFL students' gender and their online learner satisfaction, d) EFL students' proficiency level of English and their online learner satisfaction?

In order to determine all possible simple coefficients among the variables, a correlation analysis was carried out. Table 14 presents the correlation matrix which shows how strongly each independent variable is correlated with the dependent variable.

Table 14

Correlations among the Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 OLS												
2 ALS	.27**											
3 VLS	.20**	.09										
4 TLS	.25**	.36**	.30**									
5 KLS	.24**	.44**	.11	.58**								
6 GLS	.02	.24**	.11	.55**	.54**							
7 ILS	.12	-.01	.34**	-.06	-.21**	-.48**						
8 CN	.05	.27**	.23**	.33**	.23**	.19*	.22**					
9 RN	.05	.25**	.19**	.31**	.34**	.30**	-.03	.32**				
10AN	.21**	.20**	.23**	.32**	.16*	.19**	.10	.35**	.44**			
11G	-.80	-.01	-.08	-.00	-.05	.07	-.06	-.15*	-.01	.02		
12 L	.06	-.04	.09	-.03	-.07	-.00	.02	-.00	-.05	-.04	.02	

*p < .05, ** p < .01

Note. OLS = Online learner satisfaction, ALS = Auditory Learning Style, VLS = Visual Learning Style, TLS = Tactile Learning Style, KLS = Kinesthetic Learning Style, GLS = Group Learning Style, ILS = Individual Learning Style, CN = Competence Need, RN = Relatedness Need, AN = Autonomy Need, G = Gender, L = Level

As it is indicated in table 14, the values of the correlations between each independent variable and dependent variable ranged from -.080 (gender and online learner satisfaction) to .27 (autonomy and online learner satisfaction). Five correlations were significant at the p < .01 level, showing that that five predictor variables (auditory learning style, tactile learning style, kinesthetic learning style, and autonomy need) were significantly correlated with online learner satisfaction. When correlations between each pair of predictor variables are considered, the absolute values of the correlations were 0.27 (p < .01, auditory learning style and online learner satisfaction), 0.20 (p < .01, visual learning style and online learner satisfaction), 0.25 (p < .01, tactile learning style and online learner satisfaction), 0.24 (p < .01, kinesthetic learning style and online learner satisfaction), 0.21 (p < .01, autonomy need and online learner satisfaction).

Findings for Research Question 3: Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?

There are three components in need satisfaction, which are autonomy need, competence need, and relatedness need. In order to see the contribution of autonomy, competence and relatedness on prediction of online learner satisfaction, simultaneous multiple regression was used. In simultaneous regression model, all of the predictors are entered into the analysis together (Petrocelli, 2003). By using multiple regression, a participant's score on one score can be predicted on the basis of the participant's scores on various other variables. (Brace et al., 2006). 'Enter' method was employed, and all the predictors were put into the regression model at one time in order to regress online learner satisfaction on scores of need satisfaction components which are autonomy, competence and relatedness scores. In table 15, the multiple regression analysis for need satisfaction as a predictor of online learner satisfaction is presented.

Table 15

Multiple Regression Analysis for Need Satisfaction Predicting Online Learner Satisfaction

Variable	Beta	*t*	*p*
Competence	-.01	-.15	.87
Relatedness	-.04	-.52	.59
Autonomy	.23	2.73	.007

Note. R^2 = .04, F(2,778) = 2,60 p < .05

According to the regression model for a combination of satisfaction of autonomy, competence, and relatedness need, predicting online learner satisfaction was significant, F (2,778) = 2,60 p < .05, and suggests that at least one of these three need satisfaction factors can predict on online learner satisfaction.

The values of beta for autonomy (.23), competence (-.01), and relatedness (-.04) show that only autonomy was significant and positive, and this indicates that the participants' autonomy satisfaction predict online learner satisfaction. Field (2013) suggests that the standardized beta values are all measured in standard deviation units; therefore, they can be compared directly, and it helps to see which predictors in the model are important. When the beta is higher, it has more effect on the predictor. In the present study, the beta value for autonomy was .23, competence was -.01, and relatedness was -.04, suggesting that satisfaction of autonomy need was the only predictor of online learner satisfaction whereas competence satisfaction and relatedness satisfaction were not found to be predictors of online learner satisfaction.

The value of R2, as seen in Table 14, was .046, suggesting that autonomy satisfaction contributed to the prediction of online learner satisfaction significantly and explained 4% of the variation in overall online learner satisfaction.

Findings for Research Question 4: Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?

There are six components in the perceptual learning styles, which are auditory, visual, tactile, kinesthetic, individual and group learning styles. To understand the relative contribution of auditory, visual, tactile, kinesthetic, individual and group learning styles on predicting online learner satisfaction, multiple regression analysis was used. 'Enter' method was employed, and all the predictors were put into the regression model at one time in order to regress online learner satisfaction on auditory, visual, tactile, kinesthetic, individual and group learning style preference scores. In table 16, the multiple regression analysis for perceptual learning style preferences as predictors of online learner satisfaction are presented.

Table 16

Multiple Regression Analysis for Perceptual Learning Style Preferences Predicting Online Learner Satisfaction

Variable	Beta	*t*	*p*
Auditory	.17	2.13	.03
Visual	.12	1.55	.12
Tactile	.17	1.72	.08
Kinesthetic	.17	1.79	.07
Individual	.04	.44	.66
Group	-.19	-1.87	.06

Note. R^2 = .15, F (5,335) = 2.10, p < .05

The regression model for a combination of visual, auditory, tactile, kinesthetic, individual, and group preferences predicting online learner satisfaction was found to be significant, $F(5,335) = 2.10$, $p < .05$. According to this regression model, at least one of the six perceptual learning style preferences had an impact on online learner satisfaction.

The values of beta for auditory (.17), kinesthetic (.17), tactile (.17), visual (.12), individual (.04), and group (-.19) preferences show that only auditory learning style was significant and positive, showing that participants' auditory preference had positive effect on online learner satisfaction. According to Field (2013), when the beta is higher, the effect of predictor increases. In the present study, the beta value for auditory preference was .17, for kinesthetic was .18, for tactile was .17, for visual was .15, and for individual was .03. Moreover, it can be said that auditory learning style preference was the only predictor of online learner satisfaction ($p=0.03$).

In addition, according to the regression model, the value of R^2, as it can be seen in Table 15, was .15, and this value suggests that auditory preference influenced the prediction of online learner satisfaction and contributed significantly to the prediction of online learner satisfaction, and explained 15% of the variation in overall learner satisfaction.

CHAPTER 5

Discussion and Conclusion

5.1 Discussion of Findings for Research Questions

This study aims to investigate the relationship between EFL online learners' gender, their proficiency level of English, some individual affective characteristics, which are need satisfaction, perceptual learning styles, and EFL learner satisfaction in a synchronous online learning environment at higher education. The relationship between online learner satisfaction and demographic features, gender, proficiency level of English, perceptual learning style preferences and satisfaction of basic psychological needs was looked into. Participants of the present study were studying English at the preparatory program of a state university in Istanbul, Turkey. Quantitative data collection instruments were used to collect the data. Quantitative data was gathered by a questionnaire. The questionnaire was competed by 176 students. In the following section, findings of each research question are discussed, and conclusion and implications are included.

5.1.1 Discussion of the Findings for Research Question 1: Does EFL online learner satisfaction significantly differ according to; a) students' gender, b) students' proficiency level of English, c) students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic), d) students' preferred social learning styles (individual and group)?

a) Gender

When quantitative data were analyzed, no major difference was found between female and male students regarding their online learner satisfaction. This result revealed that online learner satisfaction of students between male and female students were similar and gender cannot be identified as an outstanding factor while determining the success of EFL learners' satisfaction in online learning environment.

In the modern world, young people use technology as part of their lives. Not only males but also females actively use technological tools for educational purposes. They also use technology during their lessons. For example, they use online dictionaries or watch videos to improve their skills in English.

Therefore, it is normal that there is no significant difference between gender and EFL online learner satisfaction.

The finding was supported by a study by Tafazoli, Para & Abril (2019). The study aimed to investigate “the relationships of second and foreign language teachers’ and students’ attitudes towards Computer-Assisted Language Learning in terms of their gender, age group, and educational level in two countries, Spain and Iran” (p.22). In the study, the participants were 318 language teachers and 307 language students in Iran and Spain. The first research question investigated whether there was significance among the Spanish and Iranian language students' attitudes regarding the use of CALL regarding gender. 72 of the participants were male, and 235 of them were female. The results of the independent sample t-test showed that when gender was considered, there wasn’t any statistical difference among Spanish and Iranian language learners’ attitudes towards the practice of CALL. Another study conducted by Akbulut (2008) found out that there wasn’t any relationship between gender and attitudes towards CALL. Also, a study was carried out by Cavus (2011) in Cyprus in order to explore whether there was significant difference between the perceptions of male and female students regarding Mobile-learning and Learning Management System (LMS). The study included 40 female students and 53 male students, it was analyzed by the use of an independent t-test. According to the findings, when gender was considered, there was no significant difference among the students’ attitudes towards the use of online learning platforms. Cavus (2011) concluded that as females are part of work life in every area next to males, it is normal that females are as good at using new technologies as males in the modern world.

However, these findings contrasted with the results of a study conducted in Turkey (Öz, 2015). In the study, the researcher explored the relationship between demographic factors (gender and age) and attitudes towards Computer-Assisted Language Learning. The participants included 128 undergraduate freshman students, and 75% of the participants were female and 25% were male. The findings of the study showed there was a difference between male and female students in terms of their attitudes towards CALL. The researcher concluded that learning by using computers was more satisfactory for females.

b) Proficiency level of English

The findings of the present study revealed that among the students from A2+, B1 and B1+ levels, students who were studying in B1+ level had the highest online learner satisfaction (M= 3.95). However, there was no statistically significant difference among the students when their proficiency level of English was considered.

This finding was supported by a study carried out by Cavus (2011) in Cyprus in order to find out if there was significant difference between the perceptions of students with different academic performance levels regarding Mobile-learning and Learning Management System (LMS) included 44 high-level and 49 low-level students. According to the findings, when academic performance level was considered, there was no significant difference among the students' attitudes towards the use of online learning platforms. The researcher found it unexpected to get limited information about mobile learning as the study was carried out in department of Department of Computer Information Systems.

The present study was carried out through the end of the second semester of 2020-2021 academic year. When students start the second semester their English levels are closer to each other compared to the first semester. In addition, through the end of the semester, students learn similar subjects as they take the same proficiency exam when the term ends. Therefore, though students are in different levels, their proficiency level of English is close to each other. This is the reason why there is no significant difference between the students' proficiency level of English and their online learner satisfaction.

c) Students' preferred sensory learning styles (visual, tactile, auditory, and kinesthetic)

In this study, Reid's Perceptual Learning Style Preference Questionnaire (PLSPQ) was used to examine the participants' learning style preferences and the data was statistically analyzed. When the findings in this study are considered, it can be concluded that online learner style preference can be found if appropriate measurement instrument is used. According to Lee et al. (2016), learning styles of learners could clearly be different from each other. On the other hand, four learning styles are related to each other and it is likely that learners experience different learning styles while learning a language (Lee et al., 2016). This is also supported in this study since 20 of the participants prefer two or more learning styles at the same level.

In the present study, majority of participants described themselves as auditory learners and kinesthetic learners. These findings are supported by Çiftlikli (2018), who also used Reid's PLSPQ instrument in her study. The study aimed to examine the relationship between students' preferred learning styles and their IELTS reading test achievement. In this study it was found that majority of students favored kinesthetic learning style. A study by Muniandy and Shuib (2016) aimed to find out the preferred perceptual learning styles and language learning strategies of English for Specific Purposes learners, and the results of the study showed that most learners had auditory and kinesthetic learning style preferences.

The findings of the present study showed that there was a significant difference in the mean scores of students with auditory learning style preference and students with visual learning style preference in terms of their online learner satisfaction. There wasn't a significant difference among the students with other learning style preferences with regards to their online learner satisfaction.

d) Students' preferred social learning styles (individual and group)

The findings of this study show that there wasn't a significant difference among the students with social learning style preferences with regards to their online learner satisfaction.

When students who prefer group learning style are considered, it can be said that as online learners are studying alone, they generally need to complete their tasks individually. The activities or studies done as a group are limited in the online lessons. Although students have chance to study together in breakout rooms in Zoom, as they don't turn on their cameras group activities cannot be carried out as actively as traditional face-to-face classroom environment.

When students with individual learning style preference are considered it can be claimed that many students who feel shy even in face-to-face English classroom environment don't participate in online lessons as they are afraid to make mistakes. In the online learning setting, during the lesson, most of the time the teacher talks and gives information to the students. Moreover, when a question is asked to the students, they are usually unwilling to answer the questions as they are afraid to give wrong answers. They usually feel shy to speak when there is silence in most parts of the lesson as no other students are willing to participate in the lesson actively.

5.1.2 Discussion of the Findings for Research Question 2: Is there a correlation between; a) students' preferred learning styles (visual, tactile, auditory, kinesthetic, individual, and group) and online learner satisfaction, b) students' need satisfaction (autonomy, competence, and relatedness) and online learner satisfaction, c) students' gender and online learner satisfaction, d) students' proficiency level of English and online learner satisfaction?

In the present study, it is investigated whether there is a correlation between students' perceptual learning style preferences, students' need satisfaction, students' gender, students' proficiency level of English and their online learner satisfaction. According to the results, five correlations were significant at the $p < .01$ level, showing that that five predictor variables (auditory learning style preference, visual learning style preference, tactile learning style preference, kinesthetic learning style preference, and autonomy need) were significantly correlated with online learner satisfaction.

When examining the correlation between learning style preferences and EFL online learner satisfaction, it can be suggested that the nature of the task important. Cassidy (2004) supported that as the findings in the study suggested that the nature of a task might explain how learning style affects the performance. For instance, a visual learner most probably performs better in a task that is based on pictures not words (Rayner and Riding, 1997). In the online learning setting, students look at the screen and see various visuals related to the reading texts or the new words they are learning. Therefore, it can be said that when the visuals are commonly used in only setting to support the learning process, EFL online learners satisfaction is affected positively.

When the positive correlation between auditory learning style and online learner satisfaction is considered, it can be said that during the online lesson, students listen to their teacher's explanations just as they do in the traditional classroom. Moreover, since most of the students prefer not to turn on their cameras during the online lesson, they interact with each other only by hearing each other's voices. Therefore, it can be suggested students with auditory learning style preference feel satisfied in an online learning setting.

Also, there is a correlation between kinesthetic learning style preference and EFL online learner satisfaction. In the online learning environment, students not only look at the screen but also use the computer actively. When they are given a task, they use the buttons on the computer, they type words or they use the Internet to look for new words. As they are also physically active when they do the exercises rather than just reading a text or listening to their teachers, they feel as a part of learning experience.

There is also a correlation between tactile learning style and online learner satisfaction. Preference for tactile learning style seems to be suitable for the web-based activities where students read, write and they use their hands to practice their tasks. According to Reynolds (2005), "the typical structure of online classes places a very heavy emphasis on reading and writing as the primary information transmission modality ... [and] that students who prefer online classes would be higher on their preference for the read/write mode" (p. 2). Activities in which students can use their hands such as moving items in exercises should be added in the online learning activities so that students' satisfaction in online learning can increase. When the positive correlation between auditory learning style and online learner satisfaction is considered, it can be said that during the online lesson, students listen to their teacher's explanations just as they do in the traditional classroom. Moreover, since most of the students prefer not to turn on their cameras during the online lesson, they interact with each other only by hearing each other's voices. Therefore, it can be suggested students with auditory learning style feel satisfied in an online learning setting.

Also, there is a correlation between kinesthetic learning style and EFL online learner satisfaction. In the online learning environment, students not only look at the screen but also use the computer actively. When they are given a task, they use the buttons on the computer, they type words or they use the Internet to look for new words. As they are also physically active when they do the exercises rather than just reading a text or listening to their teachers, they feel as a part of learning experience.

There is also a correlation between tactile learning style and online learner satisfaction. Preference for tactile learning style seems to be suitable for the web-based activities where students read, write and they use their hands to practice their tasks. According to Reynolds (2005), “the typical structure of online classes places a very heavy emphasis on reading and writing as the primary information transmission modality ... [and] that students who prefer online classes would be higher on their preference for the read/write mode” (p. 2). Activities in which students can use their hands such as moving items in exercises should be added in the online learning activities so that students’ satisfaction in online learning can increase.

5.1.3 Discussion of the Findings for Research Question 3: Does the need satisfaction (autonomy, competence, and relatedness) predict EFL online learner satisfaction?

In the present study, the values of beta for autonomy (.23), competence (-.01), and relatedness (-.04) show that only autonomy significant and positive, and this indicates that the participants’ autonomy satisfaction predicts online learner satisfaction.

The finding suggesting autonomy as a significant predictor of online learner satisfaction is supported by the study of Chen et al. (2010), which concluded that autonomy predicted course satisfaction, perceived learning as well as student engagement. Also, when the positive relationship between autonomy and online learner satisfaction is considered, it can be concluded that when compared to the students who do not have high levels of control over their learning, students who have control on their learning had more course satisfaction. (Drennan et al., 2005).
A study was conducted by Liu (2015) with 150 first-year students learning a foreign language in face-to-face classroom environment at a private school in Taiwan, and the results showed that there was a significant positive correlation between motivation and autonomy.

Mestre (2006) and Lee et al. (2016) claim that there are some factors which can be related to an individual perspective of his/her learning style, and personality is one of these factors. Some people like to take control during the learning process and they are field-independent type of learners. Individuals with this type of learning tend to be more successful in individualized environment. In the online learning setting, though the lecture is mostly teacher-centered, students are expected to study independently while they are completing their tasks or doing their weekly assignments. Therefore, they have control over their learning process. It can be said that online learning setting favors independent learners more. This system of studying independently support the learners' autonomy during the learning process and makes students more autonomous. In the present study, the autonomy is found to be a predictor for online learner satisfaction. A study conducted in an engineering college in China by Hu (2017), aimed to investigate the relationship between need satisfaction and learning motivation, supports this finding. The results of the study suggested that need satisfaction was a predictor in EFL learning motivation. The researcher also noted that when students' autonomy need was not fully met, they didn't feel fully motivated. According to the data, 33.2% of the participants concluded that when they had more autonomy, they feel more motivated; moreover, when there is no autonomy, it caused them to get bored at EFL learning. Regarding online learning setting, the relationship between autonomy, motivation and success in English lessons was investigated by Güneş and Alagözlü (2020). The study was carried out Asynchronous Distance Education and Blended Learning Environments, and the participants were 144 first-year students of Agricultural Engineering, Civil Engineering and Veterinary Faculties. According to the results of the study, a significant relationship between students' autonomy and their motivation was found. The researchers made two different interpretations from the results of the study. They concluded that when students are motivated, they are able to manage their language learning process better in an asynchronous distance learning setting; on the other hand, they also suggested that when the students can manage their learning efficiently, their motivation will increase, and they become more motivated.

The findings which suggest that competence and relatedness do not predict online learner satisfaction contrast with some findings in the literature. Regarding competence, a study by Xie et al. (2011) showed that as learners felt competent in their ability to take part in online discussions, their attitudes towards the online course becomes more positive. When relatedness was considered, according to a study Marks et al. (2005), social interaction was found to have an effect on student motivation and learning outcomes; moreover, interactions between students themselves and also interactions between students and the teacher were found to be the most significant predictors of perceived learning.

5.1.4 Discussion of the Findings for Research Question 4: Does the perceptual learning style preference (visual, tactile, auditory, kinesthetic, individual, and group) predict EFL online learner satisfaction?

In the present study, only auditory learning style preference was statistically significant, showing that participants' auditory preference is a predictor of students' online learner satisfaction. Li & He (2016) investigated "the relationship between Chinese EFL learners' ambiguity tolerance and their preferred perceptual learning styles" (p.213). According to the results, the auditory learning style preference was found to have more effect on ambiguity tolerance than the visual, tactile and kinesthetic learning style preferences.

It can be suggested that the positive effect of auditory learning style preference might stem from the online English learning environment in this study. Students were presented with materials such as visuals, texts and audios, and they usually had to listen to the audios of them while reading some of the reading texts. Moreover, they had to listen to the instructor while presenting different skills.

The results of the study by Aliweh (2011) contrast with the findings of the present study. In the study, students' learning style preferences, their satisfaction with online learning, and the relationships between their learning style, online learning satisfaction and their gender was investigated. There were 51 EFL college students as participants in the study. The participants were different web-based materials as an add-on to their face-to-face courses. According to the results of the study, the learning styles that were favored by participants while studying with web-based material were kinesthetic learning style, tactile learning style, visual learning style.

Considering the findings, to improve the effect of kinesthetic learning style on EFL online learner satisfaction it can be said that students can be encouraged to use the computer more actively. They usually look at the screen, listen to teachers or peers during the online lesson; however, they can be given tasks in which they can individually use their computers and be active physically such as role-playing in breakout rooms as a group activity. When they do these type of activities even though they are in front of the screen, they can move their body and become more active and this increases their satisfaction during online learning.

With regards to the relationship between tactile learning style and online learner satisfaction, it can be said that when students are encouraged to only listen to their teacher and answer the questions during the lesson without being active, students who prefer tactile learning style cannot feel satisfied and motivated. When these students are encouraged to do different activities in which students can use their hands such as matching exercises, their satisfaction in online learning can increase. Also, students with tactile learning preference were found to be keen on doing writing activities in the classroom (Naserieh, 2009). As tactile learners prefer to use objects, using computer mouse and keyboard actively may increase their online learner satisfaction.

5.2 Conclusion

First, no major difference was found between female and male students regarding their online learner satisfaction. This finding suggests that gender cannot be identified as an outstanding factor while determining the level of EFL learners' satisfaction in online learning environment.

Second, the findings of the present study revealed that among the students from A2, B1 and B1+ levels, there was no statistically significant difference among the students according to their proficiency level of English. According to this finding, students' proficiency level of English cannot be identified as a significant factor while determining the level of EFL learners' satisfaction in online learning environment.

Third, findings for the three need satisfaction factors as predictors of EFL online learner satisfaction showed that autonomy satisfaction is the only significant predictor for online learner satisfaction. According to this finding high levels of autonomy satisfaction can be described as a characteristic of learners with the high level of EFL learner satisfaction.

Finally, findings for the six perceptual learning styles as predictors of EFL online learner satisfaction showed that auditory learning style preference is the only significant predictor for online learner satisfaction. According to this finding high levels of auditory learning style preference can be described as a characteristic of learners with the high level of EFL learner satisfaction.

5.3 Implications

The present study was carried out in an online setting during the Covid-19 pandemic. Because of the restrictions of Covid-19 pandemic, educational institutions were asked to teach online. While instructors and parents were affected by this change in different ways, most students became depressed and felt lonely during the Covid-19 pandemic as they were not able get face-to-face education (Lee et al., 2021). It is natural that students' attitudes towards their lessons in the online learning setting and their motivation were affected in a negative way. Due to these conditions, the results of this the present study are probably affected. When the findings of this study are considered, in order to increase the effectiveness of synchronous online education, the focus should be on methods that could support students' auditory learning and autonomous behaviors.

Moreover, it can be suggested that online courses should be suitable for students who prefer different learning styles; in this way, more students can be successful in online learning setting. According to Gordon (1995), when students are taught in a way that is suitable for their learning style preference, they learn the best. It can be said that learners with auditory learning style preference would most probably favor audio materials whereas visual learners would favor visuals such as PowerPoint presentations, videos or pictures. When kinesthetic and tactile learners are considered, activities where they can use their hands via mouse of the computer. For social learning styles, instructors need to be careful when designing their lesson because some students may like working as a group in breakout rooms whereas others may feel shy and may not want to take part in group activities. Teacher should give options to their students to work alone or work collaboratively. In addition, if learners are not aware of their own learning styles and preferences, they may not perceive which learning styles are necessary to be successful in online learning environment.

When need satisfaction is considered, the findings of this study showed that satisfaction of autonomy need was the only predictor of online learner satisfaction. Therefore, it can be suggested that instructors should address learners' autonomy need and help them to be engaged in online English lessons. Students can be given option to choose the academic tasks they are going to study on and so that teachers can help them to be better at least in one of the tasks they are studying. When they become proficient in a task or area, they can develop autonomy and therefore satisfy their autonomy need in online English lessons, which helps them to be more motivated and satisfied. Wu (2003) states that when students are given chance to be involved in a task design such as choosing the content or methods, this will help them students to feel more responsible for their own learning. In addition, instructors should help EFL online learners' develop their competence and relatedness need. According to (Chen et al., 2010), students get frustrated in an online learning setting due to technical problems or introduction of too much information. It can be suggested that EFL students are provided with technical orientations. Also, when students become successful regularly, their perceptions of competence may increase (Carreira, 2012). Therefore, teachers can be careful when assigning tasks to their students, and should not assign tasks that would be too challenging for them. Satisfaction of relatedness need is also required to increase satisfaction of EFL learners in online learning setting. Instructors can do that by paying attention to each student in the online lessons (Furrer & Skinner, 2003). Also, instructors can enhance interaction, collaboration and sharing personal information among students by using small group tasks (Dornyei, 2001)

5.4 Recommendations

In this study, there are several recommendations for future research. Firstly, this study adopted quantitative method since it was thought to be sufficient for getting the goal of the study. In further research, interviews could also be added to gather qualitative data and the reasons relationship between EFL students' online learner satisfaction and learning style preferences and need satisfaction can be understood better.

In this study, cross-sectional method was employed to gather the data, and changes over time cannot be observed. Therefore, a study can be carried out by using longitudinal method to see if the results of the present study can be observed over time.

REFERENCES

Ababneh, S. (2015). Learning Styles and Preferences of Jordanian EFL Graduate Students. *Journal of Education and Practice, 6*(15), 31-37.

Abdel-Maksoud, N. F. (2018). The Relationship between Students' Satisfaction in the LMS" Acadox" and Their Perceptions of Its Usefulness, and Ease of Use. *Journal of Education and Learning*, *7*(2), 184-190.

Akbulut, Y. (2008). Exploration of the attitudes of freshman foreign language students toward using computers at a Turkish state university. *Turkish Online Journal of Educational Technology*, *7*, 18-31.

Albrahim, F. A. (2020). Online teaching skills and competencies. *Turkish Online Journal of Educational Technology (TOJET)*, *19*(1), 9-20.

Aliweh A. M. (2011), Exploring Egyptian EFL students' learning styles and satisfaction with web-based materials. *CALICO Journal*, *29*(1), p-p 81-99.

Alkhatnai, M. (2011). *Learning styles of EFL Saudi college-level students in online and traditional educational environments.* Doctoral dissertation, Indiana University of Pennsylvania. Proquest Dissertations and Theses Global.

Al-Hebaishi, S. M. (2012). Investigating the relationships between learning styles, strategies and the academic performance of Saudi English majors. *International Interdisciplinary Journal of Education*, *1*(8), 510-520.

Al-Seghayer, K. (2021). Characteristics of Saudi EFL Learners' Learning Styles. *English Language Teaching, 14*(7), 82-94.

Amro, H. J. (2014). *The effects of motivation, technology, and satisfaction on student achievement in face-to- face and online classes in college algebra at a college in South Texas*. Texas A&M University- Kingsville.

Arbaugh, J. B. (2000). Virtual classroom characteristics and student satisfaction with Internet- based MBA courses. *Journal of Management Education*, 24(1), 32–54.

Arbaugh, J. B. (2002). Managing the on-line classroom: A study of technological and behavioral characteristics of web-based MBA courses. *Journal of High Technology Management Research*, *13*(2), 203–223.

Babbie, E. (2010). *The practice of social research-12.* Belmont: Wadsworth.

Balcı, Ö. (2017). An Investigation of the Relationship between Language Learning Strategies and Learning Styles in Turkish Freshman Students. *English Language Teaching*, *10*(4), 53-61.

Ball, S., Davies, J., David, M., & Reay, D. (2002). “Classification” and “judgement”: Social class and the “cognitive structures” of choice of higher education. *British Journal of Sociology of Education*, *23*, 51-72.

Bax, S. (2011). Normalisation revisited: The effective use of technology in language education. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT) , 1* (2), 1-15.

Bayrak, F., Tibi, H,M., Altun, A. (2020). Development of Online Course Satisfaction Scale. *Turkish Online Journal of Distance Education-TOJDE, 21*(4), 110-123.

Biner, P., Dean, R., & Mellinger, A. (1994). Factors underlying distance learner satisfaction with televised college-level courses. *American Journal of Distance Education.*, *8*(1), 60–71.

Borg, S. & Al-Busaidi, S. (2012). Teachers’ beliefs and practices regarding learner autonomy. *ELT Journal*, *66*(3), 283–292.

Bozkurt A, Jung I, Xiao J, et al. (2020) A global outlook to the interruption of education due to COVID-19 Pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education 15*(1), 1–126.

Brace, N., Kemp, R., & Snelgar, R. (2006). *SPSS for psychologists: A guide to data analysis using SPSS for Windows* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum

Associates.

Brandt, R. (1990). On the learning styles: a conversation with Pat Guild. *Educational Leadership*, *48*, 10-12.

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, *27*, 1-13.

Carliner, S. (2004). *An overview of online learning*. Armherst, MA: Human Resource Development Press.

Carr, S. (2000). As distance education comes of age, the challenge is keeping the students. *Chronicle of Higher Education*, *46*(23), 39–41.

Carreira, J. M. (2012). Motivational orientations and psychological needs in EFL learning among elementary school students in Japan. *System*, *40*(2), 191–202.

Cassidy, S. (2004). Learning styles: An overview of theories, models, and measures. *Educational Psychology*, *24*(4), 419-444.

Cassidy, S., & Eachus, P. (2000). Learning Style, Academic Belief Systems, Self-report Student Proficiency and Academic Achievement in Higher Education, *Educational Psychology*, *20*(3), 307-322.

Cavus, N. (2011). Investigating mobile devices and LMS integration in higher education: Student perspectives. *Procedia Computer Science*, *3*, 1469-1474.

Chen, K. C., & Jang, S.-J. (2010). Motivation in online learning: Testing a model of self- determination theory. *Computers in Human Behavior*, 26(4), 741–752.

Chen, K. C., Jang, S. J., & Branch, R. M. (2010). Autonomy, affiliation, and ability: Relative salience of factors that influence online learner motivation and learning outcomes. *Knowledge Management & E-Learning: An International Journal*, *2*(1), 30–50.

Chou, S. W., & Liu, C. H. (2005). Learning effectiveness in a Web-based virtual learning environment: A learner control perspective. *Journal of Computer Assisted Learning, 21*(1), 65–76.

Clark, C., Strudler, N., & Grove, K. (2015). Comparing asynchronous and synchronous video vs. text-based discussions in an online teacher education course. *Online Learning, 19*(3), 48-69.

Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative* (pp. 146-166). Upper Saddle River, NJ: Prentice Hall.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, Calif. : SAGE Publications.

Croxton, R. A. (2014). The role of interactivity in student satisfaction and persistence in online learning. *Journal of Online Learning and Teaching, 10,* 314-324.

Çiftlikli, S. (2018). The Relationship between Perceptual Learning Styles and Language Learners' Success in Reading Tests. *Folklor/edebiyat, 96,* 173-190

Dabbagh, N., & Bannan-Ritland, B. (2005). *Online learning: Concepts, strategies, and application*. Upper Saddle River, NJ: Pearson Education.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York, NY: Springer.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. *In R. Dienstbier (Ed.), Nebraska symposium on motivation: Perspectives on motivation, 38*, 237–288. Lincoln, NE: University of Nebraska Press.

Deci, E. L., Ryan R.M & Williams G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences, 8*(3), 165-183.

Drennan, J., Kennedy, J., & Pisarki, A. (2005). Factors affecting student attitudes toward flexible online learning in management education. *Journal of Educational Research*, 98(6), 331– 338.

Dornyei, Z. (2001). *Motivational strategies in the language classroom.* Cambridge, England: Cambridge University Press

Dunn, R. (1983). Learning style and its relation to exceptionality at both ends of the spectrum. *Exceptional Children, 49*, 496-506.

Dunn, R. (1984). Learning style: state of the science. *Theory into Practice, 23*, 10-19.

Dunn, R. (1990*).* Rita Dunn answers questions on learning styles. *Educational Leadership*, *48*, 10-12.

Francescucci, A., & Rohani, L. (2019). Exclusively synchronous online (VIRI) learning: *The impact on student performance and engagement outcomes. Journal of marketing Education, 41*(1), 60-69.

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95*(1), 148–162.

Gacs, A., Goerstler, S. & Spasova, S. (2020) Planned online language education versus crises-prompted online language teaching: Lessons for the future. *Foreign Language Annals*, *53*(3), 380-392.

Garrison, D. R., Anderson, T. & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2–3), 87–105.

Giesbers, B., Rienties, B., Tempelaar, D., & Gijselaers, W. (2013). A dynamic analysis of the interplay between asynchronous and synchronous communication in online learning: The impact of motivation. *Journal of Computer Assisted Learning*, *30*, 30-50.

Gordon, H. R. D. (1995). Description of the productivity and learning style preferences of on- and off-campus distance education participants at Marshall University. ERIC document reproduction ED 390308.

Green, K. C. (2010). *The Campus Computing Survey*. Encino, CA: The Campus Computing Project.

Gülbahar, Y., Alper, A. (2011). Learning preferences and learning styles of online adult learners. In A. Mendez-Vilas (Ed.), *Education in a technological world: Communicating current and emerging research and technological efforts* (pp. 270–278). Badajoz, Spain: Formatex Research Center.

Güneş, S., Alagözlü, N. (2020). The Interrelationship between Learner Autonomy, Motivation and Academic Success in Asynchronous Distance Learning and Blended Learning Environments. *Novitas-ROYAL (Research on Youth and Language),* 14(2), 1-15.

Gütl, C., Rizzardini, R. H., Chang, V., & Morales, M. (2014). Attrition in MOOC: Lessons learned from drop-out students. In: Uden L., Sinclair J., Tao YH., Liberano D. (eds) Learning technology for education in cloud. *Communicaitons in Computer and Infirmation Science, 446,* 37-48. Springer, Cham.

Harmer, J. (2001). *The Practice of English Language Teaching* (3rd edn.). London: Pearson Education.

Hart, C. M. D., Friedmann, E., & Hill, M. (2018). Online course-taking and student out- comes in California community colleges. *Education Finance and Policy, 13* (1), 42-71.

Hong, K, S. (2002). Relationships between students' and instructional variables with satisfaction and learning from a web-based course. *Internet and Higher Education*, *5*, 267–281.

Heidar, K. (2013). Perceptual Learning-Style Preferences of Iranian EFL Learners in Relation to Their Proficiency Level. *American Journal of Linguistics,* *1*(4), 70-74.

Herbert, M. (2006). Staying the course: A study in online student satisfaction and retention. *Online Journal of Distance Learning Administration, 9*(4). Retrieved from http://www.westga. edu/~distance/ojdla/winter94/herbert94.htm

Hrastinski, S. (2008). Asynchronous and synchronous e-learning. *Educause Quarterly*, *31*(4), 51-55.

Hu, P. (2017). The correlation between need satisfaction and learning motivation: A self-determination theory perspective. *International Journal of Learning and Teaching*, *9*(1), 319-329.

Kauffman, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology, 23,* 1-13.

Keefe, J. W., Ferrell, B. G. (1990). Developing a defensible learning style paradigm. *Educational Leadership, 48*, 57-62.

Kember, D., & Ginns, P. (2012). Evaluating teaching and learning: A practical handbook for colleges, universities and the scholarship of teaching. *Routledge*, *66*, 375–377.

Khouya, Y. (2018) Students Demotivating Factors in the EFL classroom: The Case of Morocco. *Advances in Language and Literary Studies*, *9*(2), 150-159.

Kılıç (2016). Cronbach'ın alfa güvenirlik katsayısı. *Journal of Mood Disorders, 6*(1), 47-48.

Krause, J. M., Franks, H., & Lynch, B. (2017). Current technology trends and issues among health and physical education professionals. *Physical Educator, 74*(1), 164-180.

Kuo, Y. (2010). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in distance education courses (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3419203).

Kurucay, M., & Inan, F. A. (2017). Examining the effects of learner-learner interactions on satisfaction and learning in an online undergraduate course. *Computers & Education*, *115*, 20-37.

Kvale, S. (1996). *Interview Views: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, CA: Sage Publications.

Laurillard, D. (2013). *Rethinking university teaching: A conversational framework for the effective use of learning technologies*. Routledge.

Lee, S. J., Ward, K. P., Chang, O. D., & Downing, K. M. (2021). Parenting activities and the transition to home-based education during the COVID-19 pandemic. *Children and Youth Services Review*, *122*, 105585.

Lee, C., Yeung, A. S., & Ip, T. (2016). Use of computer technology for English language learning: do learning styles, gender, and age matter. *Computer Assisted Language Learning*, *29*(5), 1035-1051.

Li, H., He, Q. (2016). Ambiguity tolerance and perceptual learning styles of Chinese EFL learners. *English Language Teaching*, *9* (6), 213-222.

Liu, H.-ju. (2015). Learner Autonomy: The Role of Motivation in Foreign Language Learning. *Journal of Language Teaching and Research*, *6*(6), 1165-1174. https://doi.org/10.17507/jltr.0606.02

Mardiah, H. (2020). The use of e-learning to teach English in the time of the Covid 19 Pandemic. *English Teaching and Linguistics Journal*, *1*(2), 45-55.

Marks, R. B., Sibley, S. D., & Arbaugh, J. B. (2005). A structural equation model of predictors for effective online learning. *Journal of Management Education*, *29*(4), 531–563.

McCloskey, M. L., Thrush, E. A., Wilson-Patton, M. E., & Kleckova, G. (2013).

Developing English language curriculum for online delivery. *Calico Journal*, *26*(1), 182–203.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.* Project Report. Centre for Learning Technology.

Mestre, L. (2006). Accommodating diverse learning styles in an online environment. *Reference & user services quarterly*, *46*(2), 27-32.

Meuthia, A. A. A. (2020). Students' online learning satisfaction on learning management system. *Advances in Social Science, Education and Humanities Research, 506*, 528-534.

Moallem, M. (2015). The impact of synchronous and asynchronous communication tools on learner self-regulation, social presence, immediacy, intimacy and satisfaction in collaborative online learning. *The Online Journal of Distance Education and E-Learning*, *3*(3), 55-77.

Moorhouse BL (2020) Adaptations to a face-to-face initial teacher education course 'forced' online due to the COVID-19 pandemic. *Journal of Education for Teaching*, *46*(4), 609–611.

Motteram, G., & Forrester, G. (2005). Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education*, *26*(3), 281–298.

Muniandy, J., Shuib, M. (2016). Learning Styles, Language Learning Strategies and Fields of Study among ESL Learners. *Malaysian Journal of ELT Research, 12*(1), 1-19.

Murphy. M. P. A. (2020) COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy, *Contemporary Security Policy, 41*(3), 492-505.

Murray, M. R. (2004). An exploration of the kinesthetic learning modality and virtual reality in a Web environment (Unpublished doctoral dissertation). Brigham Young University, Salt Lake City, UT.

Murphy, C. A., & Stewart, J. C. (2017). On-campus students taking online courses: Factors associated with unsuccessful course completion. *The Internet and Higher Education, 34*, 1-9.

Naserieh, F. (2009). The relationship between perceptual learning style preferences and skill-based learning strategies. (Unpublished master's thesis). Shadid Beheshti University, Tehran, Iran.

Nation P (2007) The four strands. *International Journal of Innovation in Language Learning and Teaching 1*(1), 2–13.

Onah, D. F., Sinclair, J., & Boyatt, R. (2014). Dropout rates of massive open online courses: behavioural patterns. *EDULEARN14 Proceedings*, 5825-5834.

O'Dowd, R., & Klippel, F. (2006). *Telecollaboration and the development of intercultural communicative competence*. Berlin: Langenscheidt.

Öz, H. (2015). Investigating the relationship between foreign language learning and call attitudes among EFL freshman students. *Procedia-Social and Behavioral Sciences, 176,* 1041-1049.

Palloff, R. M., & Pratt, K. (2001). Building learning communities in cyberspace: Effective strategies for the online classroom. *The Canadian Journal of Higher Education*, 31 (3), 175-178.

Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer.* ERIC. Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*, *9*(3), 105-119.

Pappas, C. (2015). Synchronous vs asynchronous learning: Can you tell the difference? E-learning industry.

Payne JS (2020) Developing L2 productive language skills online and the strategic use of instructional tools. *Foreign Language Annals, 53*(2), 243–249.

Peachey N (2017) Synchronous online teaching. In: Carrier M, Damerow RM and Bailey KM (eds) *Digital Language Learning and Teaching: Research, Theory, and Practice*. New York: Routledge, 153–155.

Perveen, A. (2016). Synchronous and Asynchronous E-Language Learning: A Case Study of Virtual University of Pakistan. *Open Praxis*, *8* (1), 21-39.

Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development, 36*(1), 9–22.

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*, 667-686.

Rayner, S., & Riding, R. (1997). Towards a categorisation of cognitive styles and learning styles. *Educational psychology*, *17*(1-2), 5-27.

Reid, J. M. (1984). Perceptual learning style preference questionnaire. In J. M. Reid (Ed.), *The learning style in the ESL-EFL classroom*, 202–205. Upper Saddle River, NJ: Prentice-Hall.

Reid, J. M. (1987). The learning style preferences of ESL students. *TESOL Quarterly*, *21*(1), 87– 111.

Reid, J. M. (1995). Learning styles in the ESL/EFL Classroom. Boston, MA: Heinle & Heinle.

Reynolds, D. (2005). Learning styles of online students' vs. onground students (Unpublished master's thesis). Central Connecticut State University, New Britain, CT.

Richardson, J. C., Maeda, Y., Lv, J., & Caskurlu, S. (2017). Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis. *Computers in Human Behavior, 71*, 402-417.

Rienties, B., Lewis, T., McFarlane, R., Nguyen, Q., & Toetenel, L. (2018). Analytics in online and offline language learning environments: The role of learning design to understand student online engagement. *Computer Assisted Language Learning*, *31*(3), 273–293.

Rinesko, A. B., Muslim, A. B. (2020). Synchronous online discussion: Teaching English in higher education amidst the covid-19 pandemic. *Journal of English Educators Society, 5* (2), 155-162.

Ruiz, J. G., Mintzer, M. J., & Leipzig, R. M. (2006). The impact of e-learning in medical education. *Academic Medicine, 81*(3), 207–212.

Ryan R. M. & Connell J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two dimensions. *Journal of Personality and Social Psychology*, *57*, 749-761,

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78.

Ryan, R. M., & Deci, E. L. (2002). *Overview of self-determination theory: An organismic-dialectical perspective.* In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research*, 3–33. University of Rochester Press.

Ryan, R. M., Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness.* New York, UNITED STATES: Guilford Press.

Ryan R. M. & Powelson C. L. (1991).Autonomy and relatedness as fundamental to motivation and education, *Journal of Experimental Education, 60*(1), 49-66.

Ryan, R. M., Sheldon, K. M., Kasser T. & Deci E. L. (1996). All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The Psychology of Action: Linking Cognition and Motivation to Behaviour*, 7-26. New York: Guilford

Salmon, G. (2002). *E-tivities: the key to active online learning*. London, UK: Routledge.

Salmon, G. (2013). E-tivities: The key to active online learning (2nd ed.). New York, NY: Routledge.

Sampson, P., Leonard, J., Ballenger, J., & Coleman, J. (2010). Student satisfaction of online courses for educational leadership. *Online Journal of Distance Learning Administration*, *13*(3)

Seaberry, B. J. (2008). *A case study of student and faculty satisfaction with online courses at a community college.* University of California, Davis.

Serwatka, J. A. (2003). Assessment in on-line CIS courses. *Journal of Computer Information Systems*, *44*(1), 16–20.

Shahabadi, M. M., Uplane, M. (2015). Synchronous and Asynchronous e- learning Styles and Academic Performance of e-learners. *Procedia - Social and Behavioral Sciences*, *176*, 129–138.

Sprenger, M. (2003). *Differentiation through learning styles and memory*. Thousand Oaks, CA: Corwin Press.

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environ- ments. *Computers & Education*, *55*, 1721-1731

Skinner, E. A. (1995) *Perceived Control, Motivation, and Coping.* Newbury Park, CA: Sage Publications.

Smith, B. (2010). *E-learning technologies: A comparative study of adult learners enrolled on blended and online campuses engaging in a virtual classroom*

(Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database.

Sun, P. C., Tsai, R. J., Finger, G., Chen, Y. Y., & Yeh, D. (2008). What drives a successful e- learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, *50*(4), 1183–1202.

Starkey L (2020) A review of research exploring teacher preparation for the digital age. *Cambridge Journal of Education*, *50*(1), 37–56.

Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, *22* (2), 306-331.

Tafazoli, D., Para M. E. G., Abril C. A. H. (2019) Attitude towards computer-assisted language learning: do gender, age and educational level matter? *Teaching English with Technology*, *19*(3), 22-39.

Tai, F. M. (2013). Adult EFL students' preferred learning styles and motivation. The Journal of Human Resource and Adult learning, 9(2), 161–169.

Tait, A. (2003). Rethinking learner support in the Open University UK: A case study. In A. Tait & R. Mills (Eds.), Rethinking learner support in distance education: Change and continuity in an international context, 185–197. London, England: Routledge.

Taylor, G.,T. Jungert, G.A. Mageau, K. Schattke, H. D. (2014). A self-determination theory approach to predicting school achievement over time: the unique role of intrinsic motivation. *Contemporary Educational Psychology*, *39*(4), 342-358.

Vonderwell, S., & Zachariah, S. (2005). Factors that influence participation in online learning. *Journal of Research on Technology in Education*, *38*(2), 213–230.

Wang, Y., Chen, N.-S. (2007). Online synchronous language learning: SLMS over the Internet. *Innovate, 3* (3).

Wang, W., Loewen, S. (2016) Nonverbal behaviour and corrective feedback in nine ESL university- level classrooms. *Language Teaching Research 20*(4). 459–478.

Wang, Y. S. (2003). Assessment of learner satisfaction with asynchronous electronic learning systems. *Information & Management*, *41*, 75–86.

Watkins, C., Carnell, E., Lodge, C. & Whalley, C. (1996). *Effective learning.* The School Improvement Network, Research Matters, No. 5. Institute of Education, University of London.

Watts, L. (2016). Synchronous and asynchronous communication in distance learning: A review of the literature. *Quarterly Review of Distance Education*, *17*(1), 23-32.

Wdowik, S. (2014). Using a synchronous online learning environment to promote and enhance transactional engagement beyond the classroom. *Campus-Wide Information System*, *31*(4), 264-275

White R.W. (1959) Motivation reconsidered: The concept of competence. *Psychological Review*, *66*, 297–333.

Wiechowski, L., & Washburn, T. L. (2014). Online finance and economics courses: A comparative study of course satisfaction and outcomes across learning models. *American Journal of Business Education (Online)*, *7*(1), 37.

Woods, R.H. Jr. (2002). How much communication is enough in online courses? Exploring the relationship between frequency of instructor-initiated personal email and learners's perceptions of and participation in online learning. *International Journal of Instructional Media*, *29* (4), 377-394.

Wu, X. (2003). Intrinsic motivation and young language learners: The impact of the classroom environment. *System*, *31*(4), 501–517.

Xie, K., Durrington, V., & Yen, L. L. (2011). Relationship between students' motivation and their participation in asynchronous online discussions. *MERLOT Journal of Online Learning and Teaching*, *7*(1), 17–29.

Yamagata-Lynch, L. C. (2014). Blending online asynchronous and synchronous learning.*International Review of Research in Open and Distributed Learning*, *15*(2), 189-212.

Yukselturk, E., & Bulut, S. (2007). Predictors for student success in online course. *Educational Technology & Society*, *10*(2), 71–83.

Yukselturk, E., & Yildirim, Z. (2008). Investigation of Interaction, Online Support, Course Structure and Flexibility as the Contributing Factors to Students' Satisfaction in an Online Certificate Program. *Educational Technology & Society*, *11*(4), 51-65.

APPENDICES