

Computer Self-efficacy and Perceptions of Online Learning during the Covid-19 Lockdown in Iran High Schools

Mavadat Saidi*¹ & Mohammad Hossein Arefian²

^{1,2} Shahid Rajaee Teacher Training University, Tehran, Iran

² Ph.D. candidate in applied linguistics at Imam Khomeini International University

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Abstract: The sudden shift to online teaching following the outbreak of COVID-19 has confronted English language learners with numerous challenges. The students' perceptions and practices in online learning environments might be influenced by their technology-oriented abilities to survive in the current educational predicament. The current study elucidated the 12th-grade high school students' online learning experiences in a developing country during the global pandemic in light of their computer self-efficacy (CSE) level. To this end, a total number of 110 students completed the computer self-efficacy scale. The results indicated a moderate to low level of computer self-efficacy among the participants. According to the obtained scores, they were divided into low-CSE and high-CSE groups and asked to ruminate over their online learning experiences during the pandemic by answering eight questions in the form of self-reflection essays. The self-reflections of the two groups were separately analysed, and the recurrent themes were extracted. The results revealed several commonalities and discrepancies between the low- and high- CSE students considering their distant learning experiences within the COVID-19 lockdown. The findings provide pedagogical recommendations for enhancing online learning efficiency among high school students.

Keywords: computer self-efficacy, COVID-19 pandemic, online learning experiences, self-reflections

الكفاءة الذاتية الحاسوبية وتصورات التعلم عبر الإنترنت أثناء حظر تجوال كوفيد-19 في المدارس الثانوية في إيران

مودت سعیدی^{1*} ومحمد حسين عارفيان²

^{1,2} جامعة الشهيد رجائي لتدريب المعلمين، طهران، إيران

² طالب دكتوراه تخصص اللغويات التطبيقية بجامعة الإمام الخميني العالمية

الملخص: إن النقلة الفجائية إلى التدريس عبر الإنترنت بعد انتشار كوفيد-19 وضعت متعلمي اللغة الانجليزية أمام تحديات عدة. وللنجاح أمام هذه التحديات التعليمية، كان لا بد من أن تُؤثر قدراتهم الموجهة نحو التكنولوجيا على فهمهم وتصورهم وممارساتهم في بيئات التعلم عبر الإنترنت. تصف الدراسة الحالية تجربة التعليم عبر الإنترنت لطلاب الصف الثاني عشر الثانوي في إيران خلال فترة الجائحة في ضوء مستوى كفاءتهم الذاتية الحاسوبية (CSE). ولهذا الهدف استجاب 110 طلاب على استبانة الكفاءة الذاتية الحاسوبية. أشارت النتائج إلى درجة متوسطة إلى منخفضة من الكفاءة الذاتية الحاسوبية بين المشتركين. طبقاً للنتائج التي تم الحصول عليها قُسم المشاركون إلى مجموعتين وهي مجموعة ذات كفاءة ذاتية منخفضة ومجموعة ذات كفاءة ذاتية مرتفعة، وطُلب منهم أن يفكروا ملياً في تجربتهم في التعليم عبر الإنترنت خلال الجائحة بالإجابة على ثمانية أسئلة ضمن نموذج مقالات للتأمل الذاتي. تم تحليل التأملات الذاتية لكلا المجموعتين بشكل منفصل، وتم استخراج الأنماط المتكررة. أظهرت النتائج عدة قواسم مشتركة وتناقضات بين الطلاب من ذوي الكفاءة الذاتية الحاسوبية المرتفعة والمنخفضة مع أخذ تجربتهم في التعلم عن بعد خلال إغلاق كوفيد-19 بعين الاعتبار. تقدم النتائج نصائح تربوية لتحسين الكفاءة الذاتية الحاسوبية بين طلاب الثانوية.

الكلمات المفتاحية: الكفاءة الذاتية الحاسوبية، جائحة كوفيد-19، تجربة التعلم عبر الإنترنت، التأمل الذاتي

*m.saidi@sru.ac.ir

Introduction

The Coronavirus 2019 (COVID-19) pandemic has subjected the education community to numerous challenges all over the world (Crawford et al., 2020) and led to the closure of educational institutions (Zhu & Liu, 2020). As a result, the governments were obliged to run their educational programs online in a newly emerging condition and discard the prevailing traditional face-to-face learning. This predicament was even more demanding for developing countries with no experience in distant education before the pandemic (El Said, 2021; Toquero, 2020). In this regard, Iran, as a developing country, was no exception. The first case of COVID-19 in Iran was officially broadcasted on February 19, 2020. To avoid the spread of the pandemic, the government decided to announce national school and university closures. Consequently, the teachers were perforce impelled to hold online classes synchronously or present the educational materials asynchronously (Caterine, 2020).

Teaching exposes practitioners to daunting and stressful challenges; teaching a language complicates the matter further. The sudden shift to online teaching following the outbreak of COVID-19 has proliferated English as a Foreign Language (EFL) teachers' challenges (Crawford et al., 2020). In the same vein, the EFL learners were also put through unfamiliar online platforms. On the one hand, the teachers' immature preparation for offering distant education (Efriana, 2021) and the learners' unfamiliarity with the utterly strange learning situation (Rahim & Chandran, 2021) have multiplied the challenges. Numerous studies have focused on EFL teachers' rumination over their online teaching experiences (Atmojo & Nugroho, 2020). However, merely investigating the teachers' perceptions of the e-learning paradigm shift does not suffice since this sudden change in the educational programs impacted the students' performance (El Said, 2021). Hence, it seems urgent to study the students' learning experiences, particularly in developing countries with limitations (Atmojo & Nugroho, 2020; Pasaribu & Dewi, 2021). In this regard, Efriana (2021) analyzed the online learning experiences from three groups' perspectives, including the EFL teachers, students, and parents. The results revealed a wide range of problems in three categories, including teacher-related issues such as a proper understanding of the content, teachers' level of ability to use technology in online teaching, limited control over the students' learning, student-related issues such as lack the required devices, lack of motivation to attend online classes, no access to the high-speed internet,

and parent-related issues such as not having the appropriate condition to control and monitor their children and high expenses of the online learning.

Furthermore, Tanjung and Utomo (2021) attempted to analyze the students' perspectives on their online learning experiences in tertiary education by adopting the survey method and found that the students' various levels of familiarity with the technological advances impacted their perceptions. The students mainly referred to the utmost significance of receiving consistent feedback. Likewise, Rahim and Chandran (2021) demonstrated that EFL university students in Afghanistan perceived online education as a useful and desirable alternative to traditional approaches. Despite their difficulties due to the high cost of the required facilities and teachers' and students' lack of information and technological communication knowledge, they preferred e-learning to face-to-face classes. In the context of medical education, Bhandari et al. (2021) found that undergraduate medical students were satisfied with their online learning experiences. Nevertheless, their major problems were internet connectivity and limited interactions with the faculty.

Not surprisingly, the increasing growth in distance learning programs resulting from the COVID-19 pandemic pushed the educational stakeholders to become more seriously concerned with enhancing the students' engagement in online classes (Carrahar Wolverton et al., 2021). In this sense, one factor that seems to impact the students' engagement and perspectives towards the learning experience is their perceptions of computer self-efficacy. Engagement as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p.74) has been related to the learners' motivation (Flynn, 2014) and achievement (Kuh et al., 2021) and their success in online learning environments (Carrahar Wolverton, 2018; Fredrickson, 2015; Street, 2010).

Since the COVID-19 pandemic created a stressful and taxing situation, students' self-concept, motivation, and survival turned significant in education. As previously stated by Bandura (1977), Self-efficacy is the personal awareness of one's abilities to manage and perform a series of actions to reach the desired goals and "about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 71). Thus, the actions taken and the lengths, efforts, perseverance, and resilience needed have created another meaning for others in online settings. However, in 2008,

Hodges mentioned that “research on self-efficacy in online environments is in its infancy” (p. 10).

The concept of self-efficacy proposed in the social cognitive theory (Bandura, 1986) and computer self-efficacy (CSE) (Compeau & Higgins, 1995) formed the theoretical foundation of the current study. Drawing on Bandura’s theory, Campeau and Higgins (p.192) put forth the term computer self-efficacy as “a judgment of one’s capability to use a computer,” which has been investigated in a wide range of educational contexts (Carrahar Wolverton et al., 2021). The results of previous studies have pointed to the positive relationship between the students’ CSE and their satisfaction (Lim, 2001), readiness (Achukwu et al., 2015), performance (Wu et al., 2015), and engagement (Chen, 2017) in online learning. In general, the literature has pointed to the vital role of the students’ perceptions of their technology-oriented abilities in their learning outcomes (Pellas, 2014; Tzeng, 2009). Earlier studies have also highlighted the students’ positive perceptions and successful practices as predictors of their effective participation and performance in online educational settings (Ertmet et al., 1994). Indeed, their CSE beliefs would influence their use of computers and technological tools (Oliver & Shapiro, 1993).

The Study

The COVID-19 pandemic caused educational institutions, particularly schools, to rely on computer technologies heavily. Appropriate identification of the students’ CSE beliefs and possible challenges they encountered during the pandemic era would help the stakeholders and practitioners to make more informed and conscious decisions about the teaching and learning procedures during the pandemic and post-pandemic periods. Indeed, online learning seems highly demanding and requires more significant actions than is believed (Dhawan, 2020). Carrahar Wolverton et al. (2021) called for further research to understand the mediating role of CSE in online learning environments. Bearing in mind the significant impact of CSE on the students’ online learning processes, the current study aimed to examine Iranian high school students’ CSE beliefs. It was followed by scrutinizing their self-written reflections on their learning experiences during the COVID-19 pandemic. Few studies have yet focused on casting light on the students’ online learning experiences during the global pandemic (El Said, 2021). Online classes provided the teachers with innovative approaches

to teaching the English language on various platforms. Investigating the possible links between the students’ CSE and their experiences in such a new environment would contribute to developing more computer-based technology-oriented classes in the post-pandemic period. Accordingly, the study elucidated the Iranian high school students’ challenges and possible strategies to meet them within the pandemic period. The study further attempted to analyze their learning experiences in light of their level of CSE. Hence, the following research questions were posed:

- 1) What is the level of CSE among Iranian high school students?
- 2) How do Iranian EFL high school students of different levels of CSE perceive the implementation of e-learning?
- 3) What are the barriers and opportunities to implementing e-learning from the Iranian high school students’ perspectives?

Methodology

Participants and Setting

The study was carried out in the context of Iranian high schools. The participants consisted of 110 Iranian high school students in public schools in Tehran who voluntarily took part in the study. They were aged between 17-18 ($M=17.5$) and studied the “English for Schools: Vision 3” textbook. English was presented to them as a foreign language. They have attended online classes and had the experience of distance learning within the past academic year (2020-2021). They were the students in the last grade of high school, the so-called 12th grade. Although the only limitation of the study might be perceived as the exclusion of females from the study, the participants’ gender contributes to self-efficacy beliefs (Cassidy & Eachus, 2002), and only male students were included in the convenient sample. Also, as the school was dedicated to boys, we selected them from the same school to enhance the reliability of collected data from those participating in the same learning route. The convenient sampling was used to save time and money as students were available in the local setting; thus, students who were accessible at a public school were invited to participate in the study. The school manager, parents, and students were informed about the study’s nature, procedure, and process, along with collecting consent forms.

Data collection and analysis

The computer Self-Efficacy Scale (Cassidy & Eachus, 2002) was used to investigate the students' level of CSE. It consists of 30 six-point Likert scale items in which the response may range from 1 (Strongly disagree) to 6 (Strongly agree). The items included how easy, applicable, enjoyable, efficient, motivating, and productive computers can be for students. Also, the way it can be complicated and baffling. The researchers checked the scale to meet the needs of Iranian students and our context. The Cronbach Alpha coefficient was calculated as 0.91, indicating high internal consistency. A high score on the scale would indicate high computer self-efficacy.

Furthermore, the participants were asked to provide us with self-written reflections, which enabled them to reflect upon their online learning experiences during the pandemic period (Barkhuizen, 2014). The students were required to answer eight questions reflecting on their own learning experiences during the COVID-19 pandemic. The questions were about the comparison of online and in-person learning, online application and platform, merits and demerits of online learning, teachers' teaching style, strategies, and performance, synchronous or asynchronous online classes, and duration of online classes.

The study was conducted in the academic year 2020-2021, and the students were requested to jot down their experiences, challenges, and strategies in online learning contexts. Due to the constraints resulting from the school closure during the outbreak of COVID-19, the questionnaire and the self-written reflection questions were sent to the students via a Google Form on WhatsApp. The CSE scores were calculated to collect the data, and the self-written essays were analyzed in terms of the recurrent themes adopting a sequential explanatory strategy (Creswell, 2009). The texts were read, categorized, and labeled manually by both researchers individually, and data were coded, reviewed, and prepared for the final analysis. The themes were extracted, and the inter-coder reliability of 0.91 was obtained.

The minimum and maximum possible scores were 30 and 180, respectively. Descriptive statistics were provided for the computer self-efficacy of the participants to determine the level of CSE among Iranian high school students. The students who scored below 60 were considered the low-CSE group, and those who scored above 120 were assigned to a high-CSE group. A few participants should be investigated in-

depth to reach data saturation. Those who scored between these values were not considered for the self-reflection analysis since they were neither challenged by nor mastered online learning. Hence, a total of 30 low-CSE and 30 high-CSE students (each group of 30 students) were asked to provide their responses to the self-written questions. The essays of the students in each group were coded and analyzed. The study adopted a qualitative content analysis method which entails "close reading of a relatively small amount of textual matter plus scrutinizing the constituent systematic discursive practices" (Krippendorff, 2004, p.17).

Findings

Quantitative Findings

The study aimed to investigate Iranian high school students' computer self-efficacy and its possible impact on their perceptions of online learning experiences during the COVID-19 lockdown. The descriptive statistics for the participants' CSE scores shows that the high school student's level of CSE was moderate ($N = 110$, $M = 89.09$, $SD = 4.25$). The students were confident to work with the technological devices at an average level. Except for those students who enjoyed a high range of CSE scores (30 in the high-CSE group), the rest had a moderate to low level of CSE.

Qualitative Findings

As previously mentioned, the students who scored below 60 and above 120 were considered low-CSE and high-CSE groups. They were asked to provide their written self-reflection essays in response to eight questions regarding their online learning experiences during the global pandemic. A total of 30 low-CSE (L1-L30) and 30 high-CSE (H1-H30) students provided their responses. Their answers to the questions were analyzed regarding the recurrent themes and reported through thematic analysis.

The first questions elicited the participants' responses considering their preference for online or face-to-face classes. Interestingly, regardless of their CSE level, most students ($N=52$, %86.66) preferred in-person classes since they facilitate meaningful interaction, expedite their attention, raise questions, and push them for better perseverance.

I prefer face-to-face classes over online ones due to their facilitative nature for a better learning rate, higher achievement level, and close attention. (H1)

I like face-to-face classes as they provide opportunities for the students to ask to-the-point questions at the exact moment freely. (H3)

Real classes can become not only cooperative but also competitive for students. (L19)

The obligatory nature of being present in real classes pushes me for better attention and, therefore, higher learning outcomes. (L25)

However, six students (4 high-CSE and 2 low-CSE) opted for online learning conditions due to their accessibility, convenience, and time efficiency.

Online classes save a lot of time and energy because of their accessibility. (H13)

As a student and a worker, I can find more time to focus on my vocational aspects; hence, it is not time-consuming. (L27)

Among the respondents, two students (%3.33) in the high-CSE group propounded blending both online and real classes. They believed that the two modes seemed propitious for more effective learning outcomes.

Each mode has its benefits. They can be mixed to be more helpful. (H14)

The second question requested the students to mention the platforms and applications for teaching-learning during the pandemic era. They asserted that Shad (N= 42, %70), WhatsApp (N= 10, %16.66), or both of them (N= 8, %13.33) were used for presenting and practicing the pedagogical sources. It is worth noting that Shad was the application perforce designed following the school closures as a local platform specially developed for educational purposes. It was found that most of the high-CSE students (N= 28, %93.33) found the newly developed local application user-friendly, while 20 low-CSE students (%66.66) referred to it as a demanding application.

It seems easy for me to work with the Shad application. It has different potentials like live sessions, contact with others, etc. (H17)

We would receive the content and deliver our homework through the Shad application. It was ok to do the tasks with it. (H29)

The Shad application was new, and I was not comfortable using it. (L15)

I preferred WhatsApp since I was not familiar with Shad. It was new and unknown to me. (L30).

The third question asked the students to verbalize the merits of online learning. They referred to such advantages as preventing the spread of the disease (15 high-CSE and 12 low-CSE students), being convenient (28 high-CSE students), saving time (2 high-CSE and 21 low-CSE students), and reviewing the lessons with accessibility at their own convenient time (19 high-CSE and 23 low-CSE students). The high-CSE group of students expressly referred to the comfortable learning situation provided through distance education and its possible impact on their educational achievements due to the time-saving and personalized nature of the learning experiences (N=19, %63.33). In contrast, the low-CSE group found online experience parallel to having more time to review and practice the new lessons (N= 22, %73.33).

Previous materials are accessible; hence, it is a comfortable learning situation. (H23)

It can help us match the content with learning styles by personalizing the related content. (H30)

We can read and listen, practice, and review the materials repeatedly. (L12)

Protecting the students against Coronavirus is the greatest help of online classes. (L24)

The fourth question asked the students to explain the disadvantages of online classes. The students believed that teachers' approachability was weakened by remote education, and they were incapable of asking for clarification when ambiguities arose (11 high-CSE and 23 low-CSE students).

Sometimes teachers are not accessible in distant learning conditions after online classes when we try to seek help and guidance. (H7)

I cannot ask my teacher the questions I have when I study the lessons. (L26)

Furthermore, they referred to the low quality and insufficiency of the school infrastructure (13 high-CSE students). Hence, the major problems of the high-CSE students were related to the required facilities and their need to gain further support from their teachers to enhance their learning efficiency.

Low speed, constantly disconnected internet, and lacking infrastructure are the major problems. (H15)

Sometimes teachers are not well-prepared to provide online classes. (H20)

On the other hand, the low-CSE students complained about the possible risks of working with technological devices for their eyes and brains. Moreover, they stated that online classes put a heavy burden on the students' shoulders and added to their responsibilities. Some of the low-CSE students (N= 4, %13.33) believed that online classes were accompanied by distractions resulting from the house atmosphere, and thereby, they could hardly concentrate on the presented content. Moreover, many of them (N= 25, %83.33) felt irritated due to working with technological advances.

Online devices weaken eye-sight and bring irritation to the eyes. (L13)

Drowsiness, tiredness, and irritation lead to malfunctioning. (L18)

The house atmosphere often gets tense and destructive, which hinders cognitive attention and function. (L23)

The responses to these two questions revealed variations in the impact of the students' CSE level on their perceptions of the merits and demerits of online learning experiences. While the high-CSE students referred to technology-related and teacher-related problems, the low-CSE group was frustrated due to working with the devices. They seemed to lack adequate motivation, concentration, and capabilities to manage online learning experiences.

The fifth question elicited the high school students' responses focused on teaching practices. They stated that the teachers provided them with audio-visual or pdf files (N= 25, %41.66) and/or held online sessions (N= 35, %58.34). They complained about the low variety of classroom activities and the frustrating nature of the repetitive tasks. These were common among both high- and low-CSE groups.

Following these questions, the students were asked to provide suggestions for beneficial instructional activities. They mostly referred to the synchronous mode of teaching along with presenting a host of challenging tasks and activities like group-work assignments, reading and reflecting on the texts, providing audio files of the responses to the exam questions, designing online English games, etc.

Their response to the sixth question revealed that all high-CSE groups preferred online, synchronous learning environments. At the same time, most of the

low-CSE (N= 21, %70) were inclined towards asynchronous classes since they felt less confident in online learning modes.

Online classes are accessible anytime and anywhere. (H11)

Online classes are helpful because they give us an exciting experience and provide an interactive environment. (H28)

I prefer to receive materials and file and study when I feel ok. (L8)

I do not like the online class environment. It makes me nervous. (L22)

Regarding the seventh question, the students were asked to expound on the activities their teachers used in their English classes during the COVID-19 pandemic to assess the students' learning. The analysis revealed that measuring the students' learning outcomes involved various summative and formative assessment techniques and both oral and written modes. The students stated that their teachers mostly employed google Forms (N= 48, %80). Furthermore, twelve students (%20) referred to their teachers' assessment practices in the Shad application by sending the exam questions and requesting them to provide a high-quality photo of their responses within a limited time.

Our teacher provides us with the link for taking the exam. (H19)

The teacher sends us the exam questions on Shad, and we write the responses on paper. We send him the clear photo we take from our responses. (L29)

Regarding the last question, most high-CSE students (N= 21, %70) thought that forty-five minutes would suffice to present and practice the new lessons. They believed that a longer or shorter time would lower online learning efficiency. On the other hand, seven high-CSE students (23.33) referred to one hour as the optimal amount of time for holding online classes, while the rest of the respondents (2 high-CSE and 18 low-CSE students) referred to longer durations of time (e.g., 90 minutes, 120 minutes, etc.). Almost twelve (%40) of low-CSE did not respond to this question. They said they did not know the time required to learn something online and effectively.

Discussion

The study attempted to investigate how high school students' level of computer self-efficacy may influence their perceptions of online learning during the

pandemic era. Regardless of the participants' level of CSE, they preferred in-person classes over online ones. This contrasted with the findings of Rahim and Chandaran (2021), who demonstrated the students' interest in distance learning. This might result from a lack of the required facilities for online classes, namely, a lack of high-speed internet, high internet service prices, and lower levels of technological literacy in developing countries (Efraian, 2021). Moreover, the results indicated that the low-CSE group opted for the asynchronous model, and their high-CSE counterparts were inclined towards a synchronous mode of distance learning. This confirmed the results of previous studies (Ong & Lai, 2006), which revealed the critical role of CSE on the students' e-learning acceptance.

The results of the current study further indicated that the high-CSE students perceived online learning classes as the locus of considerable educational achievement. They asserted that online learning triggered their interests, individualized their progress, and saved time. This corroborated the findings in the existing literature (Tanjung & Utmojo, 2021), which demonstrated the role of CSE in the way the students perceived online settings as an opportunity for flexible and self-regulated learning. Indeed, e-learning entails a rich mixture of cooperation, creativity, and critical thinking skills, which all underlie the practical approach to learning a foreign language (Rahim & Chandran, 2021). However, the high-CSE students referred to the difficulty of accessing the teacher in remote education during the pandemic period. This showed that the teachers' position seemed irreplaceable in e-learning, and technology merely facilitated the transfer of knowledge (Efriana, 2021).

Considering the problems in online classes, high-CSE students mostly complained about the lack of the required facilities. This was commensurate with the findings of the studies conducted on the global pandemic in other countries (Efriana, 2021; Rahim & Chandran, 2021; Tanjung & Utmojo, 2021), which referred to insufficient infrastructures. On the other hand, the low-CSE students found it challenging to concentrate and engage in the learning procedures. As the existing literature indicated, student engagement was a significant determinant of students' success in an online setting (Carrahr Wolverton et al., 2021). This factor was directed by the students' perceptions of their computer self-efficacy. It seemed apparent that lower levels of computer self-efficacy would lead to decreased motivation (Efriana, 2021).

Another finding of the study was the user-friendliness of the new local application, Shad, for the high-CSE group. Being digitally literate and owning an adequate level of computer self-efficacy empowered the students to enjoy technological comfort and gain autonomy in e-learning environments (Tanjung & Utmojo, 2021). These students would be capable of making the most use of the available platforms and adapting their learning to the new emerging conditions and applications. The results also demonstrated the low-CSE students' difficulty in employing Shad. These were compatible with the results of earlier studies on the role of CSE in handling online learning settings (Cassidy & Eachus, 2002). Indeed, students with lower levels of CSE may find it challenging to exploit the newly developed and introduced online platforms and applications.

Furthermore, the high-CSE students suggested a shorter time for holding online classes compared to their low-CSE counterparts. This might root in the low-CSE groups' worries about gaining mastery over the presented scholarly sources (Carrahr Wolverton et al., 2021). The online classes seemed to pose serious risks to the students' clear understanding of the course content (Efriana, 2021). The low-CSE students offered longer class time which may be grounded on their lack of confidence in managing online learning incidents.

Conclusions

The study strove to investigate the perceptions of high school students in a developing country regarding remote education experiences during the COVID-19 pandemic. The study further attempted to investigate their online learning experiences in light of their level of computer self-efficacy. The results demonstrated a moderate to low level of computer self-efficacy among Iranian high school students. Dividing the participants into low-CSE and high-CSE groups and examining their self-reflections on their learning experiences revealed that Iranian high school students were more inclined toward face-to-face than distant online learning regardless of their CSE level. However, it seems that the low-CSE students experienced more technology-related challenges and found it difficult to adapt to the emergent distant learning settings and platforms. The findings might imply that developing and promoting computer self-efficacy would act as the precondition for holding online classes. The student's perceptions of their technological comfort determine their degree of engagement and

rectify dispositions toward online learning (Ong & Lai, 2006).

Furthermore, the students seemed to suffer from the lack of the required infrastructure, which seems to be one of the most common challenges the learners face in developing countries during the global pandemic (Atmojo & Nugroho, 2020; El Said, 2021; Pasaribu & Dewi, 2021). Hence, contriving to provide the necessary facilities may lead to more successful and desired online learning experiences.

Considering the locally developed application, Shad, the study revealed that high-CSE students found it user-friendly to work with while low-CSE ones confronted numerous challenges. This pointed to the seemingly beneficial role of the current online learning platform provided by the government. Nevertheless, the students, particularly the low-CSE ones, required basic training before being exposed to distant learning environments. Although the sudden shift to online learning might justify this lack of readiness, disregarding the students' training in using the new technological tools may be considered one of the educational flaws. Accordingly, devoting meaningful time to increase the students' understanding of the utilized technological facilities seems to be of utmost significance during the emergent distant learning to boost the students' level of CSE (Carrahar Wolverton et al., 2021).

The difficulties experienced by the low-CSE students demonstrated the existing technological inequality and variations in the digital literacy prevailing in the Iranian educational system. This would highlight the importance of enhancing the support mechanism (El Said, 2021). Successful distant learning seems expedited, provided the underlying requirements are met in such developing countries as Iran.

The results of the current study raise the policymakers' and administrators' consciousness about the shortcomings of the current online learning practices. Policymakers must embrace the necessity of providing the required facilities and equipment for expediting the implementation of innovative approaches in educational settings to enrich and enhance the quality of technology-based curricula. Instructors must also instill the students' confidence in using technological devices to increase their learning efficiency. Furthermore, they can evoke the students' interest and give rise to their engagement in online learning. Moreover, presenting and practicing their lessons with various online activities would lead to higher satisfaction

with their e-learning experiences. This may compensate for their low levels of CSE.

The current study focused on the high school students' level of CSE and its impact on their perceptions of online learning during the global pandemic. Further studies can be conducted to unfold the university students' online learning experiences within the same period. Besides, the teachers' perceptions of CSE can be studied and linked to their online teaching practices.

Limitations

This study only investigated male participants since they were only available. So, the major limitation of this study can be the exclusion of females from the study. So, other studies can explore both genders and compare their computer self-efficacy.

Data Availability

The data used to support the findings of this study are available from the author upon request.

Conflict of Interest

The authors declare no conflict of interest.

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