Challenges and Effectiveness of Using the SHAD Social Network During COVID-19 According to Teachers, Parents and Students

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Abstract: The present research analysed the challenges and effectiveness of using the SHAD social network in the COVID-19 era from the perspective of teachers, parents, and students of middle schools in Tehran. The sample size for the present qualitative research was based on theoretical saturation, and the data were collected through purposive judgements and snowball techniques. Thematic analysis was used to consider the qualitative data from 75 interviews. Eight themes were attained from 43 subcategories extracted from the verbal predicates; these themes related to the problems using SHAD, including lack of software and hardware infrastructures, user lack of familiarity with the new educational technology, lack of appropriate space for effective interaction, unconstructive interference in the education process and the impossibility of appropriate evaluation of operations, as well as psychological and behavioural disorders. According to the research findings, there were considerable differences between private and state schools in facing the problems and challenges. Participants believed that the quality of teaching in an online environment is lower than in face-to-face teaching, which they viewed as preferable. The degree of learning also decreased in the COVID-19 era, although both teachers and students spent more time and energy teaching and learning, and parents (notably) had considerably more involvement. In addition to using SHAD or the learning management system (LMS), all schools received help from social networks and were more satisfied with these external networks. However, teachers specified that student autonomy improved in the COVID-19 era, and the resulting environment was more suitable for introverted students, allowing them to be more involved. Finally, the research results indicate that creating a social network unique to education is not welcomed by the social network users, who preferred to use their favourite ones. This research supports e-learning practice by revealing that some widely-used social networks could become e-learning tools. In a few cases, due to the technical developments of these apps, these social networks have advantages over new e-learning systems. Solving technical problems is key to improving the performance e-learning systems, and teachers need to improve their ability in using online tools, while parents also need to be more involved in the learning process.

Keywords: SHAD social network, COVID-19, eLearning effectiveness, eLearning challenges, learning

1. Introduction

The COVID-19 pandemic has been a big challenge for educational systems worldwide (Crawford et al., 2020) because educational systems suddenly found themselves in the critical condition of needing to use the internet and eLearning in a short period of time and with limited access to the necessary facilities. Families, teachers, and students also felt the stress of coping with an unknown virus on a daily basis, which complicated the situation along with the issues related to the new educational environment and its requirements.

As Houlden and Veletsianos (2020) have argued, the essential question is whether there is enough and necessary preparation for developing online courses in schools and educational institutes. There are more issues that can be raised for which it is difficult to find an answer:

- How can lessons proceed when students and teachers are not permitted to have a physical presence in the classroom?
- How can learning be effective under these conditions, given different learning needs and social backgrounds? (Torrau, 2020).

As the pandemic persists and the home quarantines and social distancing continue, teaching and learning need to be seriously re-engineered, although there is not enough time, information and knowledge to do so in the circumstances created by COVID-19. The change from traditional and face-to-face contexts to eLearning environments also requires different infrastructures, including high-speed internet and proper connection devices that are not easily accessible.

The next step is for teachers and students to acquire the necessary skills for teaching and learning in this new educational environment. The selection of learning platforms has also been challenging. Reference to social networks for educational use increased during this period. As Cavus et al. (2021) have pointed out, social networks in education during the COVID-19 era have helped overcome many of the challenges in learning

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management system (LMS) environments. Olusola-Fadumiye, Harun and Oke (2020) also supported this finding; their research showed that the use of social media in learning improved the teachers' digital skills in transferring new knowledge to pupils and removing the restrictions related to learning-based technologies. Aduba and Mayowa-Adebara (2020) have shown that using WhatsApp during COVID-19 improved the teacher-student relationship and turned the teaching-learning process into an interactive, cooperative and dynamic activity for all students. The successful educational use of these networks in the COVID-19 era may be due to their features and potential uses in education. Akbari et al. (2016) have shown that teachers and students were positively affected by using social networks in education and welcomed it. Agbo et al. (2020) have indicated some of the ways social networks have improved cooperative learning. Different studies (Liao et al., 2015; Rice and Spence, 2016; Sharma, Joshi and Sharma, 2016; Alenazy et al., 2019) have shown that SNSs are preferred to LMSs because of the easy transfer of educational resources, and Cavus et al. (2021) noted that many people replaced LMSs with social networks for this reason. These sites also support cooperative learning opportunities, as well as leading to an increase in teacher/student cooperation, so say nothing of the fact that they are often easier to use than LMSs.

Measures were immediately taken in Iran to begin online courses for schools. Within a short time, the social network SHAD (شاد), meaning happy in Persian, stands for "شبکه اجتماعی دانش آموزان " (student social network; at https://shad.ir) was provided for teachers all over Iran to organize online education. This application authenticates the identification of school principals, teachers and students is, and it is possible to hold online and offline classes using the platform, while a forum is provided to ensure dialogue between teachers and students. According to official statistics from the Ministry of Education, about 14 million students are identified in this network, and over three million groups has been developed to hold classes. Further, around 1.62 billion messages have been sent between teachers and students.

The present research investigated the efficacy of SHAD in teaching and learning via a qualitative approach. This study sought to analyse the problems and challenges of using this network for teachers and students during the COVID-19 era to address the following general research question (RQ):

- Was the use of SHAD in teaching and learning effective for students?

Our specific RQs were:

- What were the most critical problems related to the use of SHAD according to teachers, parents and students?
- What are the differences among the perspectives of teachers, students and parents regarding teaching quality through the SHAD system (eLearning courses) under COVID-19?
- What are the differences among the perspectives of teachers, students and parents regarding the quality and degree of learning through the SHAD system?
- Have eLearning and SHAD influenced and changed the degree and quality of parental involvement according to teachers, students and parents?
- How has student achievement been influenced by the COVID-19 era according to teachers, students and parents?

2. Research Methodology

The present research was based on an interpretivist research philosophy. It was conducted through a deductive approach using a case study strategy. A mono-method qualitative methodology was adopted because thematic analysis was used. As the research was exploratory and because of time considerations, a cross-sectional method was used. Structured interviews were used as the research instrument. The research participants included teachers, parents and students from different geographical divisions in Tehran. A schedule was developed in advance for interviewing key people by phone. The following are the questions raised in the interview.

1. Have you already experienced online courses?
2. Have you been trained on how to participate in eLearning courses through SHAD?
3. What problems have you encountered using the SHAD network? How do you evaluate the quality of teaching/learning through SHAD?
4. How do you evaluate the quality of parents' and students' involvement in the learning process through SHAD?

5. Compare students' degree of achievement after using SHAD during COVID-19 and in face-to-face/traditional education before the COVID-19 era. What differences have you observed between these two educational approaches?

A combination of purposive judgement and snowball techniques was used to perform the sample selection, following a non-probability method. Ultimately, 20 teachers, 20 parents and 15 students were interviewed, and the resulting data were investigated through thematic analysis. The interviews lasted for 25 to 60 minutes based on the participant's condition and inclination. Although the interviews were mainly administered via telephone due to coronavirus restrictions, both the researcher and participant were present.

Content analysis is an approach for identifying, analysing and reporting the patterns available in qualitative data. It is a process through which text data are analysed and divided, allowing a detailed, enriched understanding of the data. Content analysis was performed through the following stages: 1) get acquainted with the data; 2) develop the initial codes and performing the coding; 3) search for and identify themes; 4) draw up a thematic network; 5) analyse the thematic network and 6) write up the report.

Validity was obtained through the interview process. Namely, the use of detailed and straightforward questions and the way questions were raised and their sequence, as well as confirmation of interview quality and quantity by the colleagues; voice recording, exact transcription of the interview data by the researcher and taking notes when interviewing were considered. To calculate the reliability of the present research interviews, the test-retest reliability technique was used, which refers to the consistency of data categorization over time. In each interview, codes similar to each other were recognized as consistent, and those dissimilar were specified as inconsistent. The following formula was used to determine the reliability of the codes:

$$\text{Test reliability percentage} = \frac{2 \times Number\ of\ agreements}{total\ number\ of\ codes} \times 100$$

The present research used the data from the interviewed students, and the researcher coded the data twice at an interval of two weeks. The results of the recording are presented in Table 1. There were 32 total codes, and 24 total consistencies among codes after a two-week interval. Given the above formula, the test-retest reliability value is 87.5 per cent. Because this is higher than the suggested minimum value of 60 per cent, the interviews appear to have adequate reliability.

Table 1: Test-retest reliability

Test-retest reliability value	Number of disagreements	Number of agreements	Total number of codes
87.5%	8	24	32

3. Research Findings

Each interview had a different number of predicates, so there could be 15 meaningful predicates in one interview and 6 in another. In general, there were approximately eight predicates in each interview. After extracting meaningful predicates, open coding was conducted. In general, from the 64 meaningful predicates in these interviews, 43 codes were extracted, which resulted in nine themes after eliminating the repeated codes.

3.1 RQ1 – Critical Problems

When asked about the problems related to SHAD, students, parents and teachers discussed the main challenging issues related to the use of this network. The extracted codes relevant to RQ1 are shown in Table 2; there were 31 final codes and six themes related to SHAD's problems. 'Lack of software and hardware infrastructures' was among the most critical problems mentioned by the three interviewee groups. Lack of access to the required instruments such as smartphones, tablets or computers for students – especially in geographical divisions of Tehran with lower incomes – challenged eLearning. One student said: 'my sister and I had to use a single cell phone while we had to be online simultaneously online.' However, this situation differed in geographical divisions with medium and high incomes. Many parents also did not want their children to have a private phone, depending on the child's age; one parent noted, 'We are unwilling to buy private cell phones for them.'

Some teachers also did not enjoy access to facilities such as high-quality microphones, which influenced their interaction quality. Using the internet was also costly for some families and teachers, and the Ministry of

Education took no measures to reduce these costs. Students also stated that they did not have the opportunity to interact with their classmates through SHAD, so they could not learn from each other. Compared to face-to-face interactions, they did not feel any positive psychological or mental effects.

Low-speed and disconnected internet, non-responding servers and limited facilities in SHAD such as low-speed voice and video sending were among the issues that troubled SHAD users. One student said that 'our absence was counted as unexcused while the internet had disconnected. So I got lower scores, and this bothered me more than anything else'. One teacher stated that the low-speed internet was due to the simultaneous use of the internet by all organizations and schools, and this indirectly influenced the operation of the SHAD system. There were also technical difficulties such as repeated problems in sending and receiving podcasts, videos, pictures and the incompatibility of the files to be transferred with the host system. Appropriate content production instruments should be provided for teachers to support eLearning, but some teachers had little (if any) access to such instruments. Students require appropriate prerequisite conditions and instruments for effective eLearning as well. Unfortunately, parents' inattention or economic problems in providing support such as cell phones, tablets or a silent and calm physical space resulted in lowered effectiveness.

The second central theme was 'users' unawareness of the new educational technology'. The effective use of every new technology means acquiring knowledge and information on how to use it. The interviewees stated that the training courses held by the Ministry of Education on how to use SHAD were insufficient. Such courses are essential because the eLearning environment is new and novel for many families, students and teachers. Teachers in particular emphasized their lack of knowledge of digital content production and comfort in teaching in the new environment.

According to the qualitative data analysis, the third theme was 'lack of appropriate space for effective interaction'. Teachers and students are unwilling to leave the traditional educational environment and join this network because they learn when they are beside each other. Online, they no longer directly interact with each other. Difficulties in the interaction and communication between teachers and students, as well as the absence of live and visual communication, are part of the reason why students and teachers are not interested in this network. The remarkable thing in the findings was that the private schools replaced SHAD with different LMSs to compensate for SHAD's problems, but state schools had to continue to use SHAD. All schools also declared that they used facilities in different social networks such as WhatsApp and Bale (an Iranian social network) to support teaching and learning. Besides the hardware infrastructure problems using SHAD, teacher, and students preferred to use their favourite, familiar social networks instead of a new one.

Among the problems emphasized by the interviewees was 'unconstructive interference in the education process', because teachers (in private schools) believed that parents interfered in their teaching process. One teacher stated, 'it is the parents who participate in the class and criticize it.' Many teachers felt that their class privacy was lost and felt that the online teaching environment was like an aquarium from the outside. Everybody, especially the parents, could observe classes and constantly scrutinize the teachers' behaviour, acting and judging them and their teaching accordingly. Such negative judgements could harm the students' trust in the teacher.

Teachers also argued that this parental observation could make some of them anxious. They complained that parents judged their teaching while they (the teachers) are still learning in the new environment and do not have complete control over the eLearning teaching environment. Many families noted, however, that teachers repeatedly called to check students' presence in the class. Some students who used their parents' cell phones said their parents' friends and acquaintances often called several times during the class, and the phones disconnected from the course.

'Generation of psychological and behavioural disorders' was the last theme related to SHAD problems. Many students believed that this network was boring and made them unhappy. Parents assumed that students were anxious and stressed during class and suffered from physical complications such as headaches and eye strain. Students were also in greater danger of becoming addicted to the internet and dependent on smartphones or tablets because of their attractive features. Teachers, especially in private schools, suffered from psychological problems because they encountered actions such as their screenshot pictures being turned into GIFs by students. As mentioned earlier, they also worried about parental judgements.

Table 2: SHAD problems – final codes and themes

Final codes	Theme	Key axis
Lack of access to required instruments such as smartphones, tablets or computers for students	Lack of software and hardware infrastructures	Problems in SHAD network
Lack of appropriate facilities such as high-quality microphones for teachers		
Internet costs		
Low-speed and disconnected internet		
The server not responding when logging into the system		
Limited facilities in SHAD, such as the impossibility of online classes and interaction with classmates		
Repeated problems in receiving and sending audios and videos		
Incompatibility of sent files with the host system		
Low-speed uploads and downloads		
Lack of content production instruments for teachers		
Inattention on the part of parents to the provision of required facilities for eLearning in students		
Lack of privacy		
Use of LMS in private schools instead of SHAD		
Use of social networks		
Little (if any) training courses for learning how to use the network	Lack of familiarity with new educational technology in users	
Being unfamiliar with the eLearning environment		
Being unfamiliar with content production on the part of teachers		
Unawareness of how to teach in the new environment		
Difficulty in content production		
Impossibility of students learning from each other	Lack of proper space for effective interaction	
Impossibility of direct interaction between students		
Difficulty in the interaction between the teacher and students		
Lack of direct communication between teachers and parents		
Parents' interruptions of teaching	Unconstructive interference in the education process	
The judgement of teachers and their activities by parents		
Calls to parents' phones during student use		
Repeated calls by the teacher to the parents to check student's presence in the class		
Difficulty in student evaluation	Impossibility of appropriate evaluation of the operation	
Lack of time for studying students' assignments		
Students' addiction to the internet and their dependency on smartphones or tablets	Psychological and behavioural disorders	
Psychological and mental problems for teachers		
Students' anxiety during class time		
Physical complications such as headache and eye strain		
Making GIFs by students of the screenshot picture of their teacher		
Tiresomeness of the system		

3.2 RQ2 – Teaching Quality

Table 3 presents the final codes related to teaching quality in SHAD according to the interviews. In general, one central theme and three final codes were extracted. The theme agreed upon by the teachers was 'inability to recognize students' capabilities. Both students and teachers emphasized that there cannot be a proper understanding of students' learning in the classroom for teachers via SHAD. One teacher noted, 'you cannot understand students from far away, here you cannot see their mistakes and remove them. In physical classrooms, you get from their faces whether they have understood the lesson or not'. In virtual environments, teachers were not able to appropriately perceive students' personality features and potential abilities. Finally, teachers considered online teaching to be more time-consuming than face-to-face teaching. They had to record videos of themselves and the whiteboard or audio components and send these to students, which required more time and energy than in-person classrooms.

Table 3: Teaching quality – final codes and themes

Final codes	Theme	Key axis
Teacher inability in perceiving learning degree in students	Inability to recognize students' capabilities	Teaching quality
Teacher inability in identifying students in the online space		
The time-consuming nature of online teaching as compared to face-to-face teaching		

3.3 RQ 3 –Quality and Degree of Learning

Table 4 presents the codes extracted related to quality of learning. Three final codes and one theme were extracted from the interviews on this topic. As students and their families said, the quality of learning through SHAD was not very satisfactory and resulted in the theme of 'low effectiveness of eLearning'. Similarly, students stated that more learning happens in face-to-face classes, and they had to try harder to learn course concepts in an online environment. One student said: 'I liked it when the teacher repeated the lesson in the class because it made me learn better, and in general I do not like eLearning' and 'you cannot ask your question as easily as in face-to-face classrooms'. Many students noted that because they could not ask their questions during class, less learning occurred.

In general, students reported lower degrees of learning. They indicated dissatisfaction with the online settings mainly because they considered online teaching tedious and preferred face-to-face classrooms that provided simultaneous and cooperative questioning when teaching. Teachers mentioned this as well. One teacher declared that 'several students with bad performance became so much worse because they either did not have cell phones or it was difficult for them to work in the new environment' or 'some good students became so weak'.

Nevertheless, it was noteworthy that some teachers believed that introverted students demonstrated more learning and cooperation. One teacher also stated, 'one student with a stammer who was not active in the face-to-face class has shown more involvement and increased learning in the new environment'.

Table 4: Learning quality and degree – final codes and themes

Final codes	Theme	Key axis
Decreased degree of learning	Low effectiveness of eLearning	Learning quality
Dissatisfaction with teaching online		
Tediousness of online teaching		

3.4 RQ4 –Parental Involvement

The final codes and theme related to parental involvement are shown in Table 5. All interviewees agreed that parents showed increased involvement and cooperation in students' eLearning process, although some teachers argued that there was no significant difference in parental involvement. Parents who were not already involved did not show any increased participation, but parents who had been involved in traditional education courses continued their participation in the new environment.

Many students stated that their parents constantly controlled them. In some cases, this control was unusual; as one student said, 'my mother was always in contact with the school principal and teachers and continuously encouraged me to use SHAD'. It was interesting that some parents were happy that they could watch the class educational videos to learn and help students as well. Parents also monitored more student assignments, as well as their presence in the class or even held the class. In other words, parents had a closer relationship with the school's parent community. It was noteworthy that parental involvement in low-income regions differed from involvement in wealthier ones. In private schools, parents concentrated more on the teaching method, but parent concentration was put on the student and his/her presence and activities in state schools.

Table 5: Parental involvement – final codes and the themes

Final codes	Theme	Key axis
Increased control by parents of students' presence in the class	Increased involvement in parents	Involvement quality
Parents' cooperation in holding eLearning courses		
Parents learning concepts and transferring learning to students		
Difference in parental involvement in private and state schools		

3.5 RQ 5 – Student Achievement

When asked about the degree of achievement in eLearning through SHAD, the interviewees mentioned different points. Some argued that there was a minor achievement in the COVID-19 era. One student believed that 'I was more successful and satisfied before the COVID-19 era'. One of the parents said, 'both my daughter's teachers and I were more satisfied with her before the COVID-19 era'.

One teacher assumed that students showed decreased educational achievements because they are physically remote, but some interviewees had different views. They believed that there was more student achievement than in the pre-COVID-19 era. One teacher stated, 'after the COVID-19 era, students became more self-reliant and learned new apps' because students were more enthusiastic about using technology. They even tried to produce content. However, another teacher assumed that some students performed worse, while some had promising breakthroughs.

4. Discussion

The primary purpose of the present research was to analyse the challenges and effectiveness of the SHAD social network during the COVID-19 outbreak era from the perspective of teachers, parents and students. The RQs resulted from an in-depth analysis of 70 interviews administered to teachers, parents and students who used SHAD for eLearning and teaching. There were 64 meaningful predicates in these interviews from which, after eliminating the repeated ones, 43 codes and nine themes were extracted.

The research results showed that, in general, since the onset of COVID-19 and eLearning, both teachers and students have encountered different software and hardware problems, but there were sometimes differences between private and state schools. For example, in content production, teachers in private schools tried to produce content through various types of software. Within state schools, teachers tried to teach using cell phones, whiteboards or writing on paper and recording videos. This seems to be because, in private schools, teachers were introduced to digital content production by participating in a series of training courses, but such courses were not provided for state schools, so the teachers had to learn how to work with SHAD on their own. It is therefore suggested that relevant institutions provide necessary training to develop teachers' professional competencies in online environments. Users were also not familiar with the new educational technology, which was a challenge for the interviewees.

For teachers and students, the use of social networks was a solution to some of their problems, and all interviewees (teachers and students) agreed that they were more satisfied with social networks than with LMSs and SHAD. This may be because social networks are naturally designed for sharing different file types, and previous studies have shown that these sites are effective instruments in education (Akbari and Simons, 2018). Another research finding was that some parents worried about their children's cell phone and internet use and the negative impacts on physical health. Research by Delen et al. (2015) has shown that parents worried about their children using communicative technologies, and they were especially concerned about online threats; this is in line with the findings of Madden et al. (2012).

The participants assumed a lack of face-to-face (emotional) interaction and communication with the teacher or classmates was a disadvantage of online courses. This is in line with previous research. Markus and King (2003) emphasized that a lack of interpersonal and direct interaction resulted in dissatisfaction for students participating in eLearning courses. The results of Paechter, Maier and Macher (2010) also supported our data regarding students' preference of face-to-face online education, and Johnson, Aragon and Shaik (2000) noted that students have more positive attitudes towards teachers and their operation in face-to-face courses. The majority of teachers and students stated that they preferred face-to-face education to eLearning, because they thought teaching quality was lower in the online environment and that they were more successful in face-to-face instruction. Teachers argued that it was complicated for them to understand students' degree of learning and know the students individually. Nevertheless, other researchers (Díaz and Entonado, 2009; Dell, Low and Wilker, 2010) indicated no vital difference between face-to-face and online teaching quality. Therefore, low teacher satisfaction with their teaching quality in the present research may be due to a lack of control over this environment. If teachers get the required necessary training, their teaching quality would probably improve.

Another finding was about types of eLearning. Students preferred the asynchronous approach because of the opportunity to repeat the teacher's lecture and, by watching and listening again and again, to increase learning.

Research by Georgouli et al. (2006) has shown that asynchronous platforms reinforced students' learning. To be more productive in the COVID-19 era, teachers should be encouraged to use asynchronous teaching. They should be introduced to digital content production, or students should be provided with standard educational packages. Nevertheless, as both teachers and students declared, the degree of learning and achievement decreased under COVID-19, which is in line with a report entitled 'COVID-19 and student learning in the United States: The hurt could last a lifetime' by Dorn et al. (2020). One of the reasons for this may be, as the participants stated, that long-term presence in an online setting is tedious.

Changes in the degree of parental involvement was also investigated in the present research. The results showed that parents were more involved during COVID-19 through their excessive control and monitoring, which sometimes annoyed students and teachers. Students interpreted this increased supervision as an indication of their parents' worry and stress. Teachers had not previously experienced such interference from parents regarding teaching content and methodology before the COVID-19 era, and this change was particularly prevalent for teachers in private schools. Moreover, less-educated and lower-income parents tried to control and monitor their child's education process more, but did not consider the education content and teaching methods.

This research has some limitations that should be kept in mind when interpreting the results. The present research was on eLearning through SHAD, so the results may not be generalizable to other eLearning systems; the study was performed on students, parents and teachers in Iran, so the results are exclusively applicable to Iranian participants. The results may not be generalizable to other countries.

5. Conclusion and Summary

The results of the study showed that the most critical problems related to the use of SHAD according to teachers, parents and students included: lack of adequate software and hardware infrastructures, users' unfamiliarity with the new educational technology, absence of an appropriate environment for effective interaction, and unconstructive parental interference in the educational process. Participants had a negative attitude towards teaching quality through SHAD. Both students and teachers emphasized that teachers were not able to form a proper understanding of the students' degree of learning in the SHAD environment.

Teachers also believed that it is more complex and time-consuming to teach online than in person. Regarding learning quality, participants argued that there was considerably less learning online and that more learning occurs in face-to-face classrooms. However, online environments demand more effort and energy than face-to-face instruction, resulting in more fatigue. Teachers and students considered themselves more successful in face-to-face education. However, teachers stated that student autonomy increased under COVID-19, and such an environment was more appropriate for introverted students and allowed them to be more involved. Based on the research results, parental involvement increased considerably during the COVID-19 era. Finally, the research results indicate that creating a social network uniquely for education is not welcomed by the social network users, who preferred to use their favourite social networks for educational purposes.

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