

Identification of Challenges and Opportunities of Virtual Education in Teachers' point of View during the COVID-19 Pandemic

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Abstract

Purpose: Present study sought to identify the challenges and opportunities of virtual education in teachers' point of view during the Covid-19 pandemic.

Methodology: The current study was conducive and qualitative in view of the purpose and approach respectively. The statistical population included high school teachers in Dehloran (889 individuals) in the academic year of 2020-2021. The sample size was determined to be 18 individuals based on the theoretical saturation rule in addition they were selected by purposive sampling method. Semi-structured interviews were utilized as a tool for research. Furthermore, its content validity was defined by the experts' perspective (including 2 sociology professors, 1 psychology professor and 2 educational planning professors). The reliability was 0.88 with a coding agreement coefficient in addition the data analysis method was based on thematic analysis.

Findings: 24 open codes and 8 central codes (consist of infrastructure factors, economic challenges, ambiguity in the role, lack of technological skills and indifference of teachers and students, teaching risks, books contents and teacher competencies) were determined to be some challenges of Virtual education in COVID-19 pandemic. On the other hand, 23 open codes and 7 central codes (approach of the world system, parents' experiences, psychological and economic efficiency of virtual education, continuity of virtual teaching methods, and adaptability of the pillars of the education system, selective teaching methods and teachers' social status) were identified as virtual education opportunities.

Conclusion: Regarding to the indeterminate time of COVID-19 ending, Virtual education continuity seems essential and authorities of education system should be aware of its improvement and current challenges (like the ones discussed in present study). In addition, paying more attention to Virtual education is more momentous by considering the opportunities which are the result of utilization of this method in COVID-19 period.

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1. Introduction

The sudden outbreak of COVID-19 in the mid 2020 changed a lot of aspects of human's normal life so that all the economic, social, cultural and even educational actions of countries has undergone changes utterly (Bloom, Reid & Cassady, 2020). In this case, most of the countries had to adopt another policy for their learning system and virtual classes were replaced by face-to-face ones consequently (Coman & et al, 2020). National and health authorities around the world were forced to run Virtual education method in their education system due to the growing concern of COVID-19 and its irreparable damages (Huang & etal, 2020). Virtual education means remote learning. Moreover, this word is a synonym for online learning, electronic learning and flexibility in learning (Qazi & etal, 2021). Overall, Virtual education refers to the use of multiple electronic technologies via the Internet and a connecting tool (Widodo & etal, 2020). Remote management, using medias and technologies in order to communicate and exchange data during the learning process without temporal and spatial dependence (Dhawan, 2020).

Researchers believe that Virtual education is basically followed by some challenges and opportunities (Ferri, Grifoni & Guzzo, 2020). Connectivism argues that participation and learning through social Medias provide new approaches for rethinking and having new attitudes toward the role of education and training (Siemens & Tittenberger, 2009). Community-embedded learning theory states how can individuals who participate in online classes, both play and apply the knowledge that is taught in the classroom while there are at home or work (Haythornthwaite & et al, 2007). Online Collaborative Learning theory furthermore emphasizes the Internet infrastructure which provides a learning environment for participation and creation of a new knowledge. This theory considered the teaching and learning transfusion through the Internet and large-scale network training as an advantage for virtual education (Picciano, 2017). By and large in view of educational chances researchers believe Virtual education could reduce the educational time and space constraints and learners can be profited by valuable learning in any places (Alsoud & Harasis, 2021).

Being assured about a lifelong learning and the reduction of education costs could be brought in to consideration as two other advantages of Virtual education (AI-Husban, 2020). Notwithstanding other researches argues the negative reduction of interactions between learners and teachers and the deprivation of growth and real learning opportunities by Virtual education (Ghehes & et al, 2021). Moreover, other challenges of Virtual education could be mentioned as follows: the weakness of Internet infrastructure, ignoring various talents in the learners, loss of opportunities for face-to-face relationships and superficial learning (Gillett-Swan, 2017). in two recent years researchers attempted to evaluate the challenges and chances of Virtual education which was adopted by different countries worldwide during the COVID-19 pandemic as do its effects on education. Zeynivandnezhad & Navideey (2021) announced monitoring and controlling students, lack of teacher skills, and poor Internet access as the main challenges of Virtual education. Haji, Mohammadi Mehr & Muhammad Azar (2021) declared that cliché and inappropriate methods of teaching, teachers' stresses and equipment problems are some disadvantages of Virtual education. Leep & et al (2021) demonstrated those teachers' encouragements for learning and motivating students was an element of teachers' competencies in COVID-19 pandemic. Hayat & et al concluded that Virtual education opportunities included adaptation, documenting, and supervising their own learning self-discipline whereas some of the challenges were the lack of online classroom customs and infrastructure flaws and problems. Sargazi & et al (2020) argued that COVID-19 determined the shortages and weakness of Virtual education structures which were changed to be opportunities later. Sadeghi Mahali & et al (2020) identified the Virtual education infrastructures, teaching and examination process through internet and the safety of data as some challenges in COVID-19 pandemic. Mohammadi & et al (2020) considered the opportunity to create creativity, more freedom of action for students, reduction of the cost of schools and the introduction of E-education in the field of education system while any decreases in students' commitment to homework, elimination of group activities and elimination of teacher's presence charisma were among the disadvantages of virtual education. Konig, Jager-Biela &

Glutsch (2020) understood that one of the important challenges of Virtual education utilization in the period of COVID-19 pandemic is technological competencies, digital teacher's competencies and teacher's education in particular. Rasmitadila & et al (2020) argued that it will be possible to convert the challenges into advantages if an appropriate interaction is established between different stakeholders, namely the government, families and teachers. Rapanta & et al (2020) found out the necessity for adaptation of assessments to the new educational conditions in this period.

Likewise, Virtual education was followed via Shad application which faced a lot of difficulties early on such as the lack of various contents, weakness in sending data, dullness of data transferring, frequent errors of application, problems in updating the contents, slow internet speed, etc. Regardless of efforts for the improvement of Virtual education system, there are still some study-needed- challenges. COVID-19 has not been yet eliminated utterly and its durability is imminent furthermore few published studies have mainly focused on the psychological effects of COVID-19 on education, and not a lot of ones have examined the opportunities and challenges of virtual education consequently there is a research vacuum in here. Thus, understanding challenges and opportunities in Virtual education can provide a better idea of Virtual education situation for planners and practitioners to eliminate the problems and improve the management of Virtual education system. What makes the present study innovative is checking the challenges and chances simultaneously which is not cohesive in other similar studies. Hence this study mainly aims to identify challenges and opportunities of Virtual education in teachers' point of view during the Covid-19 pandemic.

2. Methodology

The current study was conducive and qualitative in view of the purpose and approach respectively. The statistical population included high school teachers in Dehloran (889 individuals) in the academic year of 1399-400. The sample size was determined to be 18 individuals based on the theoretical saturation rule in addition they were selected by purposive sampling method. Compulsory virtual teaching and the tendency for participation in the study both were criterions for participant's selection.

In view of the method of conducting the research, interviews were done in person or on phone. Although regarding to the prevalence of COVID-19 participants mostly tented to be interviewed on phone even if it meant explaining their ideas for several times. While others were interviewed in open spaces and in accordance with health protocols, Interviews were conducted in an intimate atmosphere. Initially they became aware of the aim of our study and were wanted to explain their experience of virtual teaching in detail. Interviews took 30 to 40 minutes averagely regarding to the explanations of interviewees. Participants were wanted to give more examples and details if we noticed an momentous point in their responses.

Semi-structured interviews were utilized as a tool for research. Furthermore, its content validity was defined by the perspective of experts (including 2 sociology professors, 1 psychology professor and 2 educational planning professors) and coding agreement coefficient used for reliability. In order to achieve this goal, 3 interviews (interview 2, 7 & 18) were reanalyzed by another researcher and coder. In inter-subject agreement method reliability is acceptable if the coders' reliability found out to be more than 60.0%. Accordingly, 88.0% was the gained percent for recoding done by a researcher and a coder who were out of the study. Therefore, it could be evidentially concluded that the reliability is optimal.

Table1. Questions of the interview

Challenges	Opportunities	Topic
1. What are the pupils' problems in learning via virtual learning in your opinion?	1. What is your opinion about virtual education?	Questions
2. What has been your main problem during virtual teaching based on your experiences?	2. What was the role of principle and school executive agents in virtual learning?	
As regards your teaching experiences, which	3. What was the role of parents in virtual	

factors have affected your virtual teaching by now?	learning?
4. What are the problems of your tools and communication platforms with pupils? Give examples.	4. What are the required skills for virtual education in your opinion?
5. Are virtual education methods conducive for all the subjects and educational contents? If no, explain more.	5. What are the advantages of virtual learning in your point of view?
6. What were your problems in preparing and performing your virtual teaching?	6. How can virtual learning be continued in the future and have role as a teaching supplement?
7. What is your attitude toward learning and deep apprehending of virtual education method?	7. To what extent was the reaction of parents to virtual education?
	8. In your opinion what was the important points which were noticed after parents' teaching experiences?
	9. Please explain any other valuable personal experiences of virtual learning.

Gathered data analyzed by thematic analysis. In this method we initially determined relevant sentences and concepts and primer concepts clarified by open coding. In axial coding stage all the codes of the first stage were placed in the central themes, and in selective coding stage, the central theme of the research including the opportunities and challenges of virtual education, was formed ultimately

3. Findings

Table2 provides information with reference to the demographic characteristics of the interviewees (gender, education, age and field of study)

Tab2. Demographic characteristic of interviewees

Major			Age					Education			Sex		variable
Technical field	Experimental field	Humanities	More than 50	-46 50	-41 45	-36 40	-30 35	P.H.D	Master degree	Bachelor degree	female	male	
3	5	10	3	3	4	5	3	2	8	8	7	11	Abundance
0.17	0.28	0.55	0.17	0.17	0.21	0.28	0.17	0.12	0.44	0.44	0.39	0.61	Percentage

Table3 declares some important participants' explanations and the central themes of the research.

Table3. Some of the participants' explanations with reference to the central themes of virtual learning

Concept	Explanation	code
Concept and virtual teaching method are not relevant	Teaching some lessons is complicated through virtual teaching. For instance, teaching a philosophical concept which is challenging by itself.	1
Management of educational crisis	COVID-19 showed us world can face a potential risk and danger which could be a disease or another horrible disaster. Thus, the readiness of educational systems at the macro level and schools at the micro level is a necessity.	2
Educational flexibility	Virtual education has a unique feature. It allows us to manage the classes and the way of controlling by ourselves. For example, students can determine a specific time during the day and a format for their classes.	3
Difficulties for entering virtual classes	At the beginning of virtual education, pupils didn't have enough skill to enter channels and where we were teaching or entered the class with difficulties.	4
Parents' confusion	As a teacher or parent, the future educational situation of students was essentially indistinct.	7
Parents' experience	A pupil's father told me: I had no idea about the difficultness of teaching and the amount of effort you have to pay for tolerating a student.	8
Peace of mind	In my idea virtual education relieved the pillars of the educational system including parents, students and us (teachers). For example, I am no longer worried about my child when he goes to school or comes back home or the	9

	possible accidents which could happen to him inside or outside of school.	
Space-based educational justice	Educational justice is not only in place. COVID-19 demonstrated that this justice should be applied in medias and virtual learning. In addition, this disease may not be eliminated hence we have to utilize the virtual learning till an uncertain time	10
Fixing the problems of virtual education	In my view virtual learning which was improved due to the outbreak of COVID-19 is a desirable method. Albeit I have to take this into consideration that some of its problems must be solved. I believe virtual education should not be abandoned, but should be used alongside face-to-face training even after the elimination of Covid-19.	11
Preferring virtual education rather than face-to-face education	Virtual education provides a chance for teachers' decision making. it is the time for allowing teachers officially to decide on methods they want to adopt as a way for their teaching. For example, teachers should be allowed to teach virtually by choosing that approach without being obligated to come to school.	12
Pupils' excuses	Whenever pupils were late for their online classes, they made some excuses and you had to accept.	13
Paying attention to teaching	Parents who had contacted me to be aware of their children educational status told me: I really thought that teaching is an easy occupation however now I understand what it means and how much it is complex.	14
Students' inattention	One of the constant challenges of virtual education has been not paying enough attention to homework and virtual learning	15
Teaching place disorders	Home members ruin the teaching during the recordation of educational content accidentally. To make the matters worse these disorders are more destructive and uncontrollable during online classes.	17
Abuse of teaching content	As a truth some people manipulate the content and published it deliberately or even unintentionally and it caused a kind of hesitation and fear in the teachers' teaching. We have seen this fact in social medias several times.	18

Table4 reveals the results of thematic analysis with utilization of open, axial and selective coding methods in order to assess the chances and challenges of virtual learning.

Table4. Open, axial, selective coding of challenges and opportunities of virtual education in COVID-19 pandemic

Selective coding	Axial coding	Open coding
		Management of educational crisis
	The approach of global system	Management of future education
		Spaced-based educational justice
	Parents' experiences	Parents' teaching helps
		Tolerating children at home
		Lower teaching costs
		Teaching flexibility
	Psychological and economic benefits of virtual education	Reduction of time consuming
		Lower school transportation costs
		Peace of mind
	Continuation of virtual teaching	Boosting Shad application
		Updating the teaching applications
		Fixture of the shortcomings of virtual education
		Teachers' adaption with absentee teaching methods
Opportunities in COVID-19 pandemic	Adaptability of the pillars of the educational system	Parents' adaption with contingent teaching methods
		Acceptance of extraterrestrial methods by students
		Changing the school management system

Challenges in COVID-19 pandemic	Selective teaching method	Preferring virtual education rather than in person learning
		Preferring in person learning rather than virtual education
		Mixture teaching
	The social status of teachers	Paying attention to the cultural status of teachers
		Paying attention to teachers' livelihoods
		Paying attention to the teaching as an occupation
	Infrastructure factors	Slow speed of the Internet
		Multiple Internet disconnections
		Primer weakness and disorders of Shad application
	Economic challenges	Lack of a suitable smart phone
		Inability for buying a phone or tablet
		Lack of laptop
	Ambiguity in roles	Pupils' confusion
		Parents' confusion
		Teachers' confusion
	Lack of technological skills	Students' inability to utilize some software
		Having problems while entering the virtual teaching platforms
		Inadequate teaching of methods and insufficient skills
	Lack of motivation of teachers and students	Teachers' distrust
		Students' inattention
		Unclear effectiveness
	Teaching risk	Students' excuses
		Abuse of teaching content
	Contents of books	Disorders of teaching place
		Incompatibility of content with virtual teaching method
		Books with large contents
	Teacher competencies	Teacher's mental skills
		Creativity in virtual learning
		Conduction of virtual classes
		Participatory spirit and teacher criticism

Results of table 3 demonstrated that 23 open coding, 7 axial coding and selective coding of opportunities in virtual education in COVID-19 pandemic were identified. In addition, the identification of 24 open coding, 8 axial coding and selective coding of challenges in virtual education in COVID-19 pandemic was proved as well.

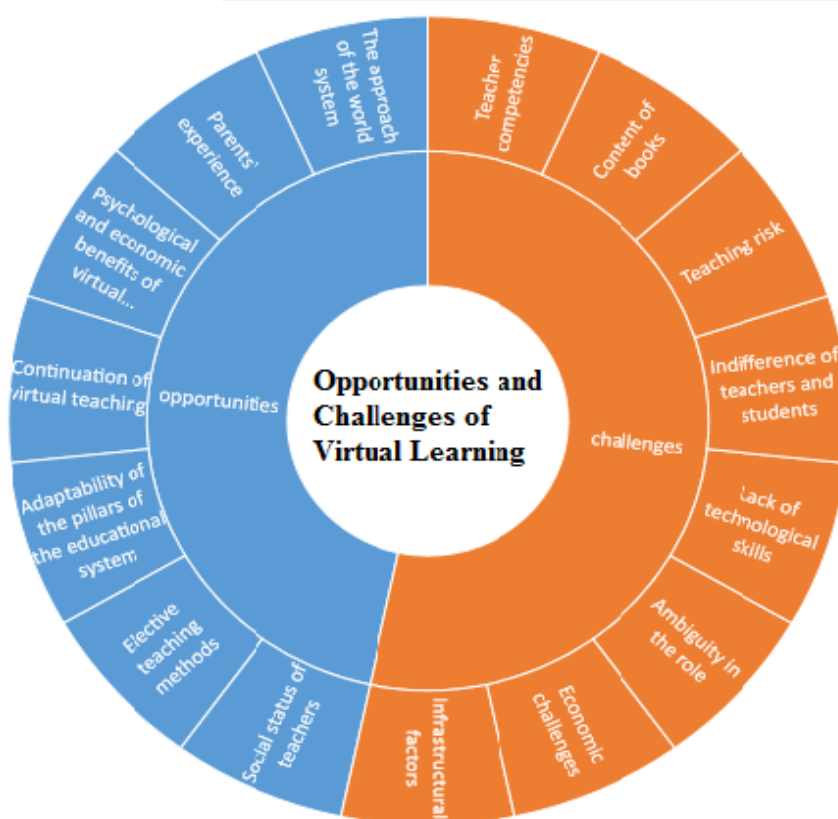


Figure1. Opportunities and challenges of virtual education in COVID-19 pandemic

4. Discussion

The disaster of COVID-19 pandemic had far-reaching effects on different aspects of life nationally and internationally. These effects were considerable on education. This study mainly endeavored to the identification of challenges and opportunities of virtual education in teachers' perspective during the Covid-19 pandemic. The first result of this study demonstrated that the approach of the world system, parents' experiences, psychological and economic benefits of virtual education, continuation of virtual teaching, adaptability of the pillars of education system, selective teaching method and social status of teachers identified to be the opportunities of virtual education. Results of this study was parallel to the study of Mohammadi et al (1399) chances of creativity creation, more freedom of action for students, reduction of educational costs; Conic et al (2020) teachers' technological competencies; Leep et al (2021) motivation of teachers and students; Haytt et al (2021) virtual education opportunities.

The first result, the approach of global system, argued that COVID-19 made trustees and stakeholders of educational system to think with reference to the virtual education seriously. This disease showed us our world could face an unexpected disaster at any moment and this catastrophe should be managed once it happens in the future. Hence in person educations are not adequate evidently. The result of parents' experiences demonstrated that parents had to be responsible or manage a part of pupils' teaching at home. Consequently, they became familiar with difficulties of teaching and teaching occupation. Psychological and economic benefits of virtual education which was another opportunity declared the role of COVID-19 in reduction of lots of costs including direct costs of tuition, transportation expenses of school agents, etc. on the other hand learning at home provides a chance for parents and teacher to teach with more peace of mind and reduced worries and transportation accidents. Thus, it could be concluded that decrease of costs and psychological and economic benefits are the consequences of COVID-19 in view of education. Adaptability of the pillars of education system was another result. Regarding to these finding, educational methods

cannot be the same and adaptability with new methods is a required ability for teaching-learning process. Adaption of stakeholders including students, parents and parents in particular made virtual teaching to be the most momentous method of education in COVID-19 pandemic. Selective teaching method was another opportunity of virtual education. Considering this result, COVID-19 led to reassessment of teaching methods. Thus, virtual education may be a common method after COVID-19 pandemic. Teacher's can decide if they want to teach in face -to-face classes or in virtual platforms or even they can utilize a mixture of them. Therefore, the virtual education method takes attentions for the time being and even for the future. Social status of teachers was another result. COVID-19 made parents and the society to experience teaching directly. Indeed, a lot of many teachers have been dissatisfied with their livelihoods in recent years. Covid-19 made society to think more seriously about meeting the needs of teachers. Infrastructural factors, ambiguity of role, lack of technological skills, teaching risks, content of book and teacher's competencies are the challenges of virtual education. This result was parallel to the study of Zeinyvand Nejad and Navidi (1400) weakness of teacher skills and weakness of accessing to the Internet; Haji et al (2021) teachers' stresses and problems of tools; Sargezi et al (2020) shortages and infrastructural weaknesses of technological education; Sadeghi Mahali et al (2020) virtual education infrastructure and the privacy of data and Haytt et al (2021) infrastructural problems.

As regards the infrastructural factors as a challenge of virtual learning, the main basis of any virtual education method is the existence of hardware platforms such as the appropriate Internet connection and devices for connecting to the Internet. Online Collaborative Learning theory believed in development of infrastructural internet basis as a necessity for virtual education. Indeed, virtual education is futile without the development of its main infrastructural. Families' economic challenges were another challenge of virtual education in COVID-19 pandemic. Accessing a mobile, tablet, laptop or PC is a basic requirement for having virtual connection with teachers. Providing these electronics was a problem for lots of families in COVID-19 pandemic. Families found the high costs of electronics and affording inabilities as an important difficulty. Furthermore, some families had several pupils and supplement of basic tools for their children were too hard or impossible in some cases. Hence difficulties in supplying the primer tools for virtual education were an economical and financial challenge in COVID-19 pandemic. Lack of technological skills was another challenge of virtual education. Utilization of virtual teaching requires some skills such as being familiar with some of the relevant software and how to use them. Lack of these skills made some challenges for both teachers and students at the first stages. For example, development of electronic content for some of the lessons needs familiarity with some the digital content creation software that can be properly conveyed the course content. The next challenge was lack of motivation. In view of this challenge teachers could be divided into two groups. Some of the teachers believe in the efficacy of virtual education albeit they consider current shortcomings as a factor for inefficiency of this method. Despite that, other teachers only trust in face-to-face education and do not think much of virtual education. On the other hand, students' carelessness and disorder in the virtual classrooms had created a kind of apathy in the teachers. Many teachers believed that their pupils do not pay enough attention to their homework and teachers cannot manage virtual classrooms properly. Consequently, all of these factors caused apathy in the teachers. As for the teaching risks as a considerable challenge of virtual education it could be stated that virtual teaching requires on-site production quality both in audio and video however it could be unintentionally dented by some sounds and irrelevant and sensitive pictures. Moreover, dissemination of electronic content on channels runs the risk of being publicly disseminated and misused, altered or even distorted. Accordingly virtual learning has the risk of non-students who may access the teaching content and cause some problems or inconvenience for teachers. Book content was another challenge of virtual education. The contents of some of the books were bulky and more compatible with in person teaching. Therefore, adaptation of virtual education with teaching all topics virtually led to problems for teachers. Competencies of teachers were another result of present study. Nowadays competencies have a wide range. Technological skills and getting familiar with updated educational platforms are an important competency for teachers. This

eligibility was felt more required during COVID-19 pandemic due to dominance of face-to-face education in the country and lack of investment in teachers' technological competencies. Lack of comparative study of parents 'and students' point of view was a limitation of this study although it was complicated for the researcher because of the type of qualitative research that needed in person interviews. No study of rural environments was another limitation of present study which could have made the results more valuable due to more deprivations in those regions. In addition, regarding to phone interviews, interviewees tried to answer in summery. As regards the gained results it is advised to:

1- Reach an optimal Internet condition and provide free and adequate Internet services to the teachers and students in view of infrastructural factors and Internet problems. 2- With reference to the economic challenges and families' difficulties for affording smart phones we recommend to supply cheap tablet or mobiles or even interest-free banking facilities with long-term instalments for the families with more than a student. 3- Regarding to the lack of technological skills it is advised to teach the most essential and associated programs such as PDF installation and WORD through our national TV channels.

4- It is advised to add a touching section in Shad application in order to register students' finger prints and make them to participate in the classes to increase teachers' motivation and reduction of students' carelessness in doing their assignments. 5- It is advised to make the content of lessons to be half in order to give teachers enough time to product optimal educational content. 6- Ministry of education should boost and develop Shad application. Moreover, it should provide other conducive applications and does not omit virtual education from education system even after the COVID-19 pandemic.

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