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A Shift from Physical to Virtual Class Environment Due to COVID Epidemic: Secondary School Students' Experiences

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ARTICLE DETAILS	ABSTRACT
History: Accepted 15 March 2021 Available Online March 2021	<i>During COVID-19 pandemic lockdown, other countries as well as Govt. of Pakistan adopted online learning in order to keep continuing teaching-learning process without any gape. As a result, world saw a paradigm shift from physical classrooms to virtual/online class environment. The basic purpose of this study was to explore secondary school students' personal experiences of virtual/online learning. For this, total 409 students from different government and private secondary schools participated in this study. A self-developed questionnaire was used to collect the required data. It was found that maximum students possesses their own smart phones and were taking online classes through these phones; male students and students from secondary private schools were positively more inclined towards online learning. Online learning was interesting technique for them which enabled them to learn new IT skills and saves them from corona virus disease. Lack of training and/or no experience of online; poor internet connections; understanding mathematics/physics problems online and expensive for some of the sampled students' parents to arrange laptop/desktop/smart phones for them for their online classes were the major problems in attending online classes.</i>
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1. Introduction

COVID-19 (Coronavirus Disease 2019) is defined as illness caused by a novel coronavirus now called severe acute respiratory syndrome Coronavirus 2 initially reported to World Health Organization (WHO) on December 31, 2019 and spread rapidly in the first half of 2020 as a nightmare to the whole world. Started from China, didn't take too long to sweep worldwide paralyzing all activities attributed to a normal life and declared as pandemic by WHO. A pandemic is defined as an infectious disease that can greatly increase morbidity and mortality over a wide geographical area causing a considerable economic, social, political and economic instability (Madhav, Oppenheim, Gallivan, Mulembakani, Rubin, & Wolfe, 2017). The COVID-19 pandemic, which had led to the exceptional health and socioeconomic crisis within weeks and will mark our times for long has severely impacted entire

sectors of education around the world.

Marinoni, van't Land and Jensen (2020) quoted from UNESCO as:

“On 1 April 2020, schools and higher education institutions (HEIs) were closed in 185 countries, affecting 1 542 412 000 learners, which constitute 89.4% of total enrolled learners. At the beginning of May, some countries, experiencing decreasing numbers of cases and deaths, started lifting confinement measures. However, on 7 May (the time of writing the report), schools and higher education institutions (HEIs) were still closed in 177 countries, affecting 1 268 164 088 learners, which constitute 72.4% of total enrolled learners.”

This situation led to the need to adapt suitable methodologies to continue teaching-learning process without any gap. In this regard, many governments from different countries adopted online learning in order to avoid spreading the virus and to ensure the continuity of the educational process (Coman, Tiru, Meseasan-Schmitz, Stanciu & Bularca, 2020). Hence, therefore, current technology enabled online learning to be the core method of teaching the curriculum during COVID-19 lockdown. As a result, world saw a paradigm shift from physical classrooms to online learning. E-learning, web-based learning, computer-based learning and virtual classrooms are the synonym terms used for online learning (Paulsen, 2002).

Online learning is not a new concept for educationists but it was never been adopted and accepted as real learning or the formal mode of education before this ongoing pandemic lockdown (Khan, Vivek, Nabi, Khojah, & Tahir, 2021). But, now the situation is totally reversed, all most all of the educational institutes worldwide are exploring and approaching towards online learning. Online learning is defined as teaching through internet. It is an environment where teachers and students are not physically present face to face; however they use the channel of internet to carry out the pedagogy (Sun, Chen, 2016). The success of online learning depends on many factors i.e., accessibility of internet and other ICT-based resources, usage of appropriate teaching methods, course content and assessment criteria (Baczek, Zaganczyk-Baczek, Szpringer, Jaroszynski, & Wozakowsks-Kaplon, 2020). Baczek, et al., further expressed advantages of e-learning as: increased convenience, access to resources regardless of location and time, reduction of cost and air-pollution; and limitations as: internet access and poor quality connection problems, and insufficient digital skills of the respondents.

During the pandemic session, the Government of Pakistan suspended all the teaching-learning activity in educational institutes from school level to university level on March 13, 2020 saying that the environment at the institutes can result in the spread of virus in the students. This shift forced the teachers across the country to adapt to the virtual environment of teaching. Due to the covid-19 crisis and lockdown operations in educational institutes in Pakistan, the shift from physical class environment to the virtual one was witnessed. The online learning system was firstly adopted by educators in all schools and universities of Pakistan. They faced different problems and benefits as well. Therefore, this study aimed at unfolding and exploring secondary school students' experiences of shifting from physical classes to online classes from strategic to personal psychological perspective

Following research questions were drawn to conclude the research:

1. Which IT resource was used by the secondary school students to attend online classes during lockdown?

2. What benefits they found and problems they faced during online classes?
3. What is their attitude towards online learning?
4. Whether male and female students' opinion is different regarding the online learning?
5. Whether private school students are more satisfied with online learning system than to the government school students?

2. Research Methodology

The present study used survey based research design. According to Gay, Mills & Airasian (2015), *“survey research involves collecting data to test hypotheses or to answer questions about people's opinions on some topic”*. A self-developed questionnaire was constructed by the researchers to collect the required data. The questionnaire was designed according to the objectives of this article. The questionnaire was comprised of three sections. First section was about demographic information of the participants of this study i.e., gender, school type (public or private) and information about technological devices used by them during their online learning. Second section was designed to explore the effectiveness of online learning during lockdown. These were open ended statements about the online classes and online assessment. Students were required to express according to their personal experiences about benefits/advantages and problems/difficulties regarding online classes and online assessment. The third section was comprised of 19 statements based on 4-point scales of different types. These statements were about students' attitude towards online learning. To measure the reliability of this questionnaire pilot study was conducted and existing senior educationists and research experts available in the public sector universities (Bahauddin Zakariya University, Multan, and University of Education, Lahore (Multan Campus)) were consulted to measure its face validity. Total 15 students (6 male and 9 females) were involved in the pilot study. After pilot study some statements of the questionnaire were required to re-structure because they were difficult for them to understand and format of the questionnaire was reconsidered as per identified and asked by the students. While, the educationists and senior experts (after piloting the questionnaire) – consulted for its face validity – approved it collectively.

Purposive sampling technique was used to collect the required data. The targeted population of this research was those students which were enrolled in class 10th in different public and private schools of Multan city during session 2020-21. These students were approached during October 2020 to December 2020. On September 15, 2020, Government of Pakistan announced to resume secondary school classes after the lockdown of first wave of COVID-19. The schools were closed on March 13, 2020 and remain closed till September 14, 2020. During these months of lockdown, schools adopted online learning technique to continue the teaching-learning processes. Therefore, it was a golden opportunity for the researchers to collect required data from those students who were taught online first time in their lives and were having latest experience of online learning. To secure the time and other resources, total 3 Government and 4 private schools were involved in the study of Multan city. Ethically, prior permission for data collection was taken from the heads of these schools. Researcher collected data by themselves from the students available in their classrooms on the day of data collection. Therefore, the return rate of the questionnaires was maximum i.e., 98%. Demographically distribution of the sampled students is given in Table 1. From table it was found that total 409 students participated in the study. Maximum 53% male and 51% students' from Government Schools participated in the study. While 89% students have high speed internet connection at their home.

Table 1: Demographic Information of the Sampled Students

Sample (Category)	N	%
Gender:		
Male	216.00	53.00
Female	193.00	47.00
School Type:		
Government School Students	209.00	51.00
Private School Students	200.00	49.00
Internet Connection at Home:		
Yes	366.00	89.00
No	43.00	11.00

3. Results and Discussion

From Table 2 it was depicted that 93% of the sampled students have smart phones; 86% have hand free; 67% have laptop and 48% have desktop computers at their homes. Almost 50% of the sampled students were taking their online classes through their smart phones; 33% were using laptops; 11% on Tablets and 6% on their desktop computers.

Table 2: Availability of ICT Devices at Home for Online Classes

ICT Devices	Yes		Online Classes	
	N	%	N	%
Laptop	275.00	67.23%	133.00	32.52
Desktop	198.00	48.41%	23.00	05.62
Tablet	95.00	23.23%	47.00	11.49
Smart Phone	382.00	93.39%	206.00	50.37
Video Camera	25.00	06.11%	-	-
Hand Free	350.00	85.58%	-	-

3.1 Effectiveness of Online Classes (Part-II)

Table 3 shared sampled students' best experiences regarding online learning. It was required to express three benefits/advantages/good things they found during online learning. Their answers were grouped together according to the similarities and then percentages were calculated accordingly. The question was open ended, the response rate of the students was very low. Majority of them left blank or give one or two responses. Following responses were grouped and arranged accordingly in descending order from the filled questionnaires:

Online classes were beneficial to the samples students because they learned new IT skills (27%); it saves them from corona disease (26%); learning through online classes was interesting for them (25%) and it saves them to get ready every day for school (23%). And 16% were happy for reduced burden of doing homework in regular classes.

Table 3: Advantages/Benefits of Online Classes – Sampled Students’ Responses

Sr. No	Advantages/Benefits of Online Classes	N	%
1.	Enabled to learn new IT skills.	326.00	27.16
2.	Saves us from CORONA	315.00	26.25
3.	Interesting method	301.00	25.08
4.	No need to go school every day.	278.00	23.17
5.	Reduced syllabus.	251.00	20.92
6.	Improves listening skill.	245.00	20.42
7.	Easy to attend class from anywhere	245.00	20.42
8.	Easy to participate in class	236.00	19.67
9.	Taking classes from home was a good experience.	201.00	16.75
10.	No need to do homework every day.	195.00	16.25

It was asked from sampled students in questionnaire to share their problems or difficulties they faced during online classes. Following major difficulties were explored from their responses:

Majority of them identified that if they were given any kind of training regarding online classes (57%) they could learn better; they were facing internet connection problems (52%); faced difficulty in understanding mathematics/physics problems online through their teachers (48%); majority of students accepted that they just marks their attendance and then leave the lecture online on their mobile phone only (46%); 45% students feel difficulty to listen recorded lessons of their teachers; and 31% express that it was difficult for their parents to arrange laptop/desktop for them for their online classes and after that affording a high speed internet.

Table 4: Problems/Difficulties of Online Classes – Sampled Students’ Responses

Sr. #	Problems/Difficulties of Online Classes	N	%
1.	No previous experience and training of online classes	680.00	56.67
2.	Internet connection problems.	620.00	51.62
3.	Difficulty in understanding mathematics/physics problems in online class	578.00	48.17
4.	Need to mark attendance only	550.00	45.83
5.	Difficult to listen continuously without any gape	538.00	44.83
6.	Difficult to understand some topics	512.00	42.67
7.	More time to sleep or enjoy less time to read	387.00	32.25
8.	Expensive (internet charges; buying laptop etc.)	377.00	31.42
9.	Affected school going habit	360.00	30.00
10.	Free to take or leave class during lecture	356.00	29.67
11.	Much time wasted in playing online games	345.00	28.75
12.	Physical classes are more beneficial	338.00	28.17
13.	Light failure problems	278.00	23.17
14.	Makes us lazy and dull	264.00	22.00

3.2 Attitude towards Online Learning (Part - III)

This part of the questionnaire was about sampled students' attitude towards online learning. When it was asked from them whether they have attended their classes regularly or not? Fig1 showed the responses of this question of sampled students. It was found that 69% of the overall sampled students; 84% of the male students; same percentage for female students (i.e., 84%); 75% of the government school students and 88% of the private school students regularly attended their classes during lock down. Not a single response was found in the categories of "Never" or "Seldom" in the given scale.

Fig1. Regularity of Sampled Students in Online Classes

Fig2 highlighted sampled students' satisfaction with online learning. Overall 33% sampled students were satisfied; 30% were dissatisfied; 23% were disappointed; but 14% were very happy with online learning/classes. 30% each of male and female and 39% of students from government schools were dissatisfied; but 22% of the students from private schools were satisfied with this system.

Fig2. Satisfaction of Sampled Students with Online Classes/Learning

Fig3 showed sampled students' responses regarding the notes/helping material provided by teachers during online classes. Overall 59% of the sampled students; 60% of the male students; 57% of the female students; 52% of government school students and 66% of private school students felt that supporting material provided by their teachers was helpful for them.

Fig3. Satisfaction of Students with Notes Given by Teachers

As shown from Fig4 that overall sampled students feel it quite easy to keep in touch with peers during online classes. Overall 81% sampled students; 97% of male students; 63% of female students; 83% of government school students and 79% of private school students feel online learning is helpful to keep in touch with peers.

Fig4. Contact between Peers during Online Learning

Fig5 disclosed students' interest in online learning system and their recommendations of its integration in physical classroom activities. Total 81% of the sampled students were agreed with the

given statement; 89% of male students; 72% of female students; 69% of Government school students and 93% of private school students agreed with the given statement.

Fig5. Integration of Online Learning Activities in Regular Classes

4. Conclusion

Following conclusions were made based on the above calculations:

Maximum students possess their own smart phones and were taking online classes through these phones. Overall sampled students' attitude was positive towards online learning. Male students and students from private schools were more positive as compared to female students and government school systems respectively. They found online learning as a very interesting technique which enabled them to learn new IT skills and saves them from corona virus disease. Moreover, online learning system made it easy to take their lesson from anywhere and anytime which saves their time in going schools daily and also reduced their syllabus for final examinations.

Sampled students of this study were facing more difficulties and problems than to the benefits of online learning. They expressed that lack of training and/or no experience of online learning causes problems in attending classes online; poor internet connection problems; difficulty in understanding mathematics/physics problems online through their teachers; non serious attitude for attending classes through smart phones sitting at home; difficulty to listen recorded lessons of their teachers; and it was also very difficult for their parents to arrange laptop/desktop for them for their online classes and after that affording a high speed internet.

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