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Adaptability Issues in Online Classes during Covid-19: A Study of Higher Educational Institutions in Khyber Pakhtunkhwa, Pakistan

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Abstract: This research study focuses on adaptability issues in online classes during covid-19 in Khyber Pakhtunkhwa, Pakistan. Student's adaptability was measured by degree of comfortability, learning capacity, degree of motivation and state of interaction. The target population for this research study was undergraduate students of Higher Educational Institutions. The data was collected from 10 public sector universities of Khyber Pakhtunkhwa through questionnaire. A total of 1000 samples were randomly selected from 10 universities. From each university 100 samples consisted of 50 males and 50 females were selected. Four main variables including students' motivation, comfortability, state of learning and state of interaction were investigated to measure adaptability. Chi-square technique was applied, and the results showed that students' learning capacity was negatively affected by online mode of classes. Their motivation level was low and so was their comfortability. Moreover, the state of interaction during online mode of classes was not intensive that negatively affected their learning. The responsible factors for students' demotivation included lack of access to and constant availability of internet, electricity shortfall, lack of previous experience of online mode of classes, lack of knowledge of using learning management system (LMS) and social isolation.

Keywords: Adaptability, online mode of classes, students' motivation, students' comfortability, state of interaction, state of learning.

1. Introduction

The covid-19 pandemic caused more than 8000 deaths in more than 160 countries. More than 200000 cases were reported as positive, while more than 800 million learners were affected (UNESCO, 2020). The entire world was at a state of emergency which compelled many states to adopt stay-at-home policy. This stay-at-home policy was adopted for reducing/controlling public health risk. Social distancing in everyday life was a mandatory measure. Schools, colleges and universities were closed for 50 days

initially but later on extended to three months and even more in some countries. This policy affected 90 percent of the world's total learners. Majority of the countries adopted online mode of teaching or distance learning strategies to keep their academic programs continued. The policy of shifting towards online mode of teaching brought more complications both in teaching and learning processes. Massive students belonging to the developing world were not adaptable to the new mode of teaching which raised many issues such as their learning capabilities were affected, their interaction, their motivation level and comfortability were highly influenced. This research study focuses on these adaptability issues in online mode of learning during stay-at-home policy in Pakistan.

In Pakistan, the first two cases of covid-19 were reported in February 2020 and ascended to 578,797 confirmed cases in a year. The government imposed a nationwide lockdown in March 2020. Consequently, the educational sector, the business sector and the entire industrial sector were closed. All the schools, colleges, universities remained closed during the lockdown. Globally, more than 60 per cent of students were negatively affected by the covid-19 in which tertiary education students were highly disrupted. Similarly, the adoption of stay-at-home policy in Pakistan highly affected students of higher educational institutions. Though it was a proactive measure adopted by the state for reducing further spread of the covid-19, however, it resulted in multiple challenges for the students. Due to the state of emergency, almost every higher educational institution adopted online mode of learning and assessment systems to cope with the situation.

The abrupt closure of universities had a high impact on students' routine activities. Shifting towards online mode of classes brought an abrupt change in the method of learning, assessment, communication and workload that affected both lifestyle and learning outcomes of the students. The social life of the students was negatively affected because of social seclusion or dissociation from friends and batchmates. Emotional health risks increased due to worries about future education, fear, anxiety, frustration, loss of jobs etcetera. In addition, the pandemic led to some positive changes in the habits and lifestyle of students as well, such as the opportunity of spending more time with their families, paying attention to personal hygiene and health and more focus on recreation.

1.1 Literature Review

Many researchers founded in their studies that the closure of educational institutions reduced the spread of corona virus up to a greater extent (Esposito and Principi, 2020; Owusu-Fordjour et al., 2020; Viner et al., 2020), however, it negatively affected the social life of the people. The same strategy was also adopted during the spread of swine-origin influenza A (H1N1), which resulted in the reduction of the pandemic by 25 percent (Wu et al., (2010). Therefore, every country adopted stay-at-home policy to battle the covid-19. Restriction on mobility of general public and imposition of social distancing reduced the risk of further spread up to some extent, however, this policy led to some serious consequences for the students whose studies abruptly interrupted by this policy (Onyema et al., 2020). This policy compelled thousands of students to purchase electronic devices for themselves to attend online classes which brought an unprecedented economic pressure on them. Students already suffered from huge psychological stress coupled with extra economic burden heightened their vulnerability to failure, anxiety and consequential walkout from their studies.

A study conducted by Al-Tammemi et al. (2020) on 381 university students in Jordan demonstrated that majority of students had psychological stress and lacked motivation for distance learning at the time of coronavirus lockdown. Likewise, Dutta and Smita (2020) explored the influence of coronavirus

lockdown on the students of higher education in Bangladesh by using a qualitative research approach. Through semi-structured interviews with fifty students from different universities, they founded various unprecedented disrupting attitudes among the students, such as mental distress, physical health problems, decrease in motivation to study, changes in study hours etc. These problems were more prominent among the students who had lack of access to electronic devices (laptop, tablet and mobile etc.), internet and complications in using online mode of classes. Similarly, Owusu-Fordjour et al., (2020) conducted a study in Ghana who examined that students who were not used-to learning by themselves were mostly affected by the stay-at-home policy. They also revealed that potential challenges were posed to students who had limited or no access to internet or electronic devices. Savage et al. (2020) conducted a study on 214 students enrolled in East Midlands University in the UK in which they founded that stay-at-home policy negatively affected the mental wellbeing of the students because of disruption in their physical activities. They further argued that stay-at-home policy compelled many students remained sedentary who used to be active and studious previously.

The adoption of stay-at-home policy also brought physical changes in the life of millions of students who used to be at hostels and very active in their studies, but abrupt physical relocation demotivated them because of social seclusion. These considerable changes in the lifestyle of students resulted in stress, frustration and anxiety. According to Cao et al., (2020) 25 percent of the college students suffered from anxiety during covid-19 outbreak and this anxiety was comparatively high among students who were living away from their families. This study was conducted on 4143 college students in China that revealed anxiety among college students a high-risk factor. The pandemic highly hit the social life of students due to stay-at-home policy. The quarantine also caused students feel emotionally detached from their families, classmates and friends which decreased their study hours and affected their overall performance (Meo et al., 2020). The closure of higher educational institutions suspended face-to-face interaction and physical appearance in the examination. This interruption in the academic functioning and normal flow of academic programs highly stressed the students (Jacob et al., 2020). In addition, delay in reopening of the education sector negatively affected the mental state and academic growth of the students (Chandasiri, 2020).

The overall transition from conventional education to e-learning was not an easy process and there were certain obstacles and challenges linked to this rapid transformation (Ali, 2018; Crawford et al., 2020). Globally, the pandemic affected every aspect of social life including education while following social distancing measures; schools, colleges and universities immediately closed their campuses and teaching activities (Toquero, 2020). It affected the students, teachers and educational institutions across the globe (Almanthari et al., 2020). Similarly, with the prevailing uncertainty about the full disappearance of the pandemic, educational institutions around the world are allocating their existing technical resources to create a conducive atmosphere for online learning materials for students and faculty members (Kaur, 2020). Most of the universities moved towards online or remote learning but many among them had less resources to cope proactively with the emergency, however, some universities like Duke Kunshan University and the New York University of Shanghai successfully deployed different educational technology products and digital infrastructure i.e. the video conferencing module to guarantee ease in the process of learning (Czerniewicz et al., 2019). The educational institutions rapidly implemented and innovated the necessary digital infrastructure with new teaching approaches, tools, and considerations, which reduced the catastrophic impacts of covid-19 on education (Huang et al., 2020).

However, states and educational institutions that lack such potential and preparation against this backdrop faced unavoidable challenges in online learning. For instance, Pakistan, according to Maqsood and Qureshi (2020) do not have the potential to provide the necessary digital infrastructure due to low allocation of funds to educational sector from the very outset, while Pakistan did not have any other option beside stay-at-home policy which brought a huge emergency in the educational sector. Though, it was the need of time but both the faculty along with the students faced a plethora of challenges while attending online classes. Among these challenges, students' adaptability to online mode of classes was a huge challenge, because in Pakistan quite few universities such as Virtual University had distance learning programs where students were used-to online mode of classes while the rest of the universities and colleges did not have any distance learning programs which raised many problems both for the students and teachers alike. This study investigates these adaptability issues in online teaching during covid-19 in the higher educational institutions in Khyber Pakhtunkhwa, Pakistan.

Although there is growing literature on the impact of covid-19 pandemic on students in Pakistan (Abbasi et al., 2020; Ahmed et al., 2020; Dhahri et al., 2020; Farooq et al., 2020), however, quite less studies investigated the adaptability issues in online teaching in Khyber Pakhtunkhwa. This study focuses on issues related to online teaching in the higher educational institutions by collecting the data from 1000 undergraduate students from 10 universities of Khyber Pakhtunkhwa, Pakistan.

2. Method

This research study applied quantitative research method. The data was collected in the form of pre-tested questionnaire. These questionnaires were filled in from the students of higher educational institutions in Khyber Pakhtunkhwa. A total of 1000 samples were randomly selected from 10 universities of Khyber Pakhtunkhwa. From each university 100 samples were selected. The data was collected from undergraduate students of different disciplines with a gender balanced approach. The data was collected manually. Each question in the questionnaire addressed the variables under investigation. All the questions included in the questionnaire were predefined and predetermined to grab the exact information from the population (Babbie and Mouton, 2009; Bless and Higson-Smith, 2006; Neuman, 2014).

The key informers of this research study were students of higher educational institutions because higher educational students experienced issues related to online mode of learning and they passed through stay-at-home policy during covid-19. The universities from where that data was collected mostly run undergraduate programs in different disciplines, therefore, we collected the data from undergraduate students. It was convenient for us to collect the data from undergraduate students rather than from students of higher degree programs. In most of the universities in Khyber Pakhtunkhwa, there are quite less students enrolled in higher degree programs especially research-based programs, therefore, we selected undergraduate students for this research study. The following table (table-1.1) shows details of samples collected from 10 universities of Khyber Pakhtunkhwa.

Table1.1: Details of Samples Collected from 10 Universities of Khyber Pakhtunkhwa

Name of University		*Level of Study*	*Gender*		*No. of Samples*
The University of Swat		Undergraduate	Male	Female	100
			50	50	
The University of Malakand		~~~~~do~~~~~	50	50	100
The University of Mardan		~~~~~do~~~~~	50	50	100
Bacha Khan University		~~~~~do~~~~~	50	50	100
The University of Peshawar		~~~~~do~~~~~	50	50	100
Agriculture University Peshawar		~~~~~do~~~~~	50	50	100
The University of Swabi		~~~~~do~~~~~	50	50	100
The University of Haripur		~~~~~do~~~~~	50	50	100
The University of Abbottabad		~~~~~do~~~~~	50	50	100
Hazara University		~~~~~do~~~~~	50	50	100
Total	10	~~~~~~~~~~~~~	500	500	1000

2. 1 Hypotheses

1. Students were highly comfortable with online mode of classes.
2. Students learning capacity was positively affected by online mode of classes.
3. Students were highly motivated during online mode of classes.
4. Students' interaction during online mode of classes was intensive.

Quantitative research method was comparatively better to cover vast population of students. In this study, 1000 samples were randomly selected, and it was very much time saving to collect the data and categorize it through statistical measurement. In addition, quantitative technique was comparatively more scientific to apply and derive information on the respective variables from vast number of samples. Moreover, deriving information on the variables under investigation through statistical techniques increases both the validity and reliability of the data and increases the authenticity of the findings to be generalized (Bryman, 2001, 2008, 2010; Gorard, 2001; Connolly, 2007; Shank and Brown, 2007; Daniel, 2016). Table 1.2 shows the details of responses of the students and their percentages.

Table-1.2: Details of Responses of the Students and their Percentages.

Variables	*Category*	*Frequency*	*Percentage*
Degree of Comfortability	High	100	.100
	Average	175	.175
	Below Average	253	.253
	Not	472	.472
Learning Capacity	High	116	.116
	Average	245	.245
	Below Average	482	.482
	Low	157	.157
Degree of Motivation	High	138	.138
	Average	173	.173
	Below Average	141	.141
	Not	548	.548
State of Interaction	High	190	.190
	Average	105	.105
	Below Average	578	.578
	Low	127	.127

3. Findings and Discussions

In Pakistan and most of the other countries, the outbreak of the covid-19 pandemic was followed by the stay-at-home policy. Stay-at-home policy was adopted by every single state as a strategy to control the spread of the covid-19 further. Secondly, stay-at-home policy was a containment strategy for the people to avoid gathering and meetings. All the state-run and private educational and other institutions were immediately closed. New modes of contacts and communications were introduced by most of the educational institutions to carry out their daily activities, particularly classes for students. In this regard, majority of the universities in Khyber Pakhtunkhwa adopted LMS (Learning Management System) for online classes and assessment. The LMS is a computer software developed for electronic mode of teaching. Some universities adopted google-meet along with other computer applications for online teaching that raised many issues both for the students and teachers. It was basically one-size-fits-all approach that resulted in further complications including students' geography, access and previous experience of internet, cognitive understanding, adaptability to the new version etcetera. Some of the adaptability issues founded in this research study are discussed in the following passage from the results shown in table-1.3.

Table1.3:Results of the Responses on the Main Variables

Variables	*Categories*	*Use of Learning Management System*		*Chi-Square Statistics*
		Yes	No	
Degree of Comfortability	High	30	70	12.857 (0.004)
	Average	45	130	
	Below Average	215	38	
	Not	393	79	
Learning Capacity	High	107	09	8.907 (0.000)
	Average	97	148	
	Below Average	369	113	
	Not	110	47	
Degree of Motivation	High	104	34	12.571 (0.000)
	Average	103	70	
	Below Average	80	61	
	Not	393	152	
State of interaction	High	49	141	9.758 (0.000)
	Average	103	2	
	Below Average	425	153	
	Not	106	21	

3.1 Degree of Comfortability

In this study, 47 percent of the total respondents revealed their discomfort while 25 percent revealed that their comfortability level was below average during online classes. The degree of comfortability was comparatively low in online classes than in conventional mode of teaching. Lack of comfort in online classes was associated with many factors, however, the common among them was little knowledge about the use of LMS, internet connectivity problem, access to electronic device, electricity shortfall and dissociation from the peers. In addition, students' discomfort increased when they used to wait for email replies or text messages from their teachers which was very much time consuming. In conventional mode of teaching, a student's question is answered within seconds because of the immediate proximity while in online mode of teaching students usually wait for longer than expected to hear from the teacher. The results given in table-1.3 shows that students' discomfort increased with online mode of teaching. Here we failed to accept the null hypothesis on the ground that p-value for degree of comfortability is less than 5 percent which means that students discomfort increased with online mode of teaching. These findings were not influenced by gender or age of the students. Approximately all the respondents in this research study were adults whose age ranged from 18 to 25 years. Gender of the students was an insignificant factor because this study highly focused on the academic determinant of learning. Similarly, a research study conducted by David and Warren (2014) on measuring comfort of the students during online learning over a period of 9 years, founded gender and specialty as insignificant factors. On the contrary, a research study conducted by Gerri Hura (2007) on measuring comfort and satisfaction of students in online learning revealed age of the respondents a highly significant factor, however, the age of the respondents in his study ranged from 18 to 57 years while the age of the respondents in this research study ranged from 18 to 25 years which covers comparatively quite less duration.

3.2 Learning Capacity

Learning capacity of the students was measured in terms of the quantity of material they get and learn on average. This learning capacity was affected by the changing mode of teaching. About 48 percent of the students revealed that their learning capacity was below average during online mode of teaching as compared to conventional mode of teaching. In manual teaching system, students get more material in less time by taking notes, writing down important points, learn from group discussions and asking questions to the teacher. While in online mode of teaching, lectures are usually followed by submission of ready-to-print material which the students are supposed to read themselves. Sometimes students are sent electronic version of lectures on specific topics which are either prepared by the concerned teachers or downloaded from other academic websites. The students are required to listen to these lectures and get themselves abreast of the contents most relevant in these lectures. Here the students are bounded to specific topic with specific line of action which hinders their learning capacity. The results given in table-1.3 shows that the learning capacity of the students was negatively affected by the online mode of teaching. In the results, p-value for the learning capacity is below 5 percent which shows that we failed to accept the null hypothesis. It means that online mode of teaching negatively affected the learning capacity of the students.

It is a common practice in every higher educational institution that course materials are downloaded electronically and delivered to the students without recognizing their carrying capacity. Unnecessary burden on the students results in increased stress and frustration. The principal objective of the teacher/instructor is to understand the cognitive skills of the students before transferring material and putting unnecessary burden on them. It is one of the higher pedagogical skills to identify and reduce the difference between the carrying and loading capacity of the students. Understanding the learning capabilities of the students is very much important before delivering the type of material to them (Jaques and Salmon, 2007; Kirkwood and Price, 2014). In addition, the main objective of the teachers is to develop and enhance higher order cognitive skills among the students whether the teaching mode is electronic or face-to-face. However, lack of such skills among the teachers negatively affected the learning capacity of the students during online mode of classes.

3.3 Students' Motivation

In this research study, it was founded that the degree of motivation of the students for online mode of classes was very low. Motivation could be both intrinsic- driving individual to perform a task because of internal willingness and extrinsic- when an individual is driven by the fear of punishment or getting higher grades. About 54 percent of the students were not motivated at all for online mode of classes, while 14 percent were less motivated. The strong factors that contributed more to their demotivation was the state of interaction and the state of learning. The state of interaction included both teacher-to-students and students-to-students interaction. Of 1000 samples, 57 percent agreed that their interaction was below average and 12 percent said that their interaction during online classes was low. In conventional mode of teaching the intensity of communication is usually very high while in online mode or other than conventional mode of teaching the intensity of communication is very low. This intensity provokes two factors; the confidence to communicate and the attraction. Both confidence and attraction boost with applaud, gesture, smile, physical contact etcetera which lack in online mode of teaching. It is more an interactionist perspective to be more confident and motivated among group members and less motivated alone. Moreover, the results given in table-1.3 shows that we failed to accept the null hypothesis on the ground that p-value remains less than 5 percent. It means that students got demotivated by the online mode of teaching in which the stronger factor was social

seclusion that explained students' demotivation in online mode of teaching. Social proximity is a significant factor that attracts students to participate in classes and learn through sharing their views, however, this factor lacks in online classes (Mese and Sevilen, 2021; Widjaja and Chen, 2017; Jaque and Salmon, 2007; Gillet-Swan, 2017).

3.4 State of Interaction

The state of interaction means student-to-student and student-to-teacher interaction during online mode of classes. Usually, when students interact more with their teacher or the intensity of their interaction is high, it makes the learning process easier and quicker. In this research study it was assumed that the state of interaction during online mode of classes was intensive, but the results showed that 57 percent of the students believed that the state of interaction during online mode of classes was below average as compared to manual system. Of 1000 samples 12 percent revealed that their interaction with the teacher during online mode of classes was low, while 10 percent revealed that it was average. Among the respondents, 19 percent revealed that their interaction during online mode of classes was high. The state of interaction, either high or low, plays an important role in students' learning (Sher, 2009). Student-to-student interaction determines the effectiveness of collaborative activities (Dixson, 2010) which is an essential element in creating a knowledge sharing and conducive environment for learning. In online mode of classes, the learners' interaction is usually very weak because it is two-way interaction (Ping, 2011). Group activity is lacking in online mode of classes which reduces the opportunity of students' participation and exposure. Moreover, the interaction between the learners and the contents of the lecture is also very weak, which negatively affects students' learning capability. The results in table-1.3 shows that the state of interaction during online mode of classes was very low which negatively affected students' learning. The results show that p-value remains less than 5 percent for the state of interaction which means that we failed to accept the null hypothesis that the intensity of interaction during online mode of classes was high. The Pie-Chart (Figure 1) shows responses of the individual students on the main variables.

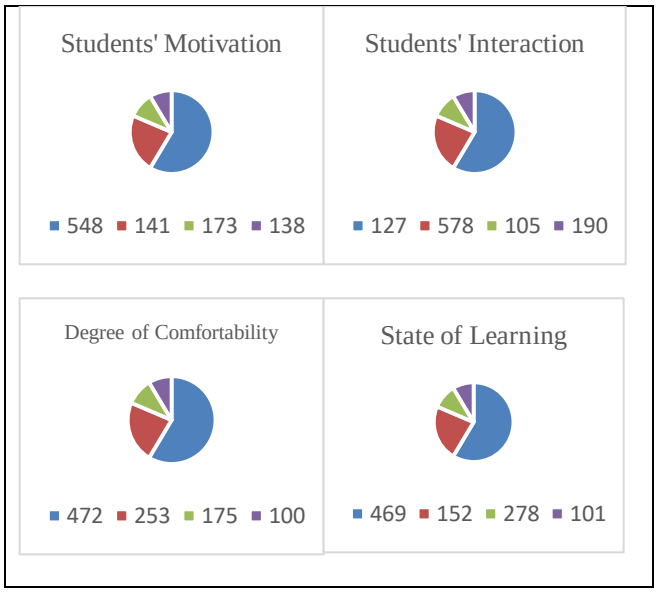

Figure 1: Responses of Students on Main Variables

These variables showed the adaptability level of the students. These adaptability issues negatively affected their learning capabilities. There were many other factors that influenced online learning,

however, the prominent among them were students' motivation, comfortability with the online mode of classes, the state of interaction and state of learning during online mode of classes. These factors basically showed students' level of adaptability with online mode of classes. Many researchers discussed the same factors in their research studies, however, these factors variate with context (Mese and Sevilen, 2021; Widjaja and Chen, 2017; Jaque and Salmon, 2007; Gillet-Swan, 2017; Dixon, 2010; Ping, 2011; Sher, 2009). In most of the developing countries students of higher educational institutions almost faced similar adaptability issues and the main reason behind their demotivation was lack of previous experience of online classes.

4. Conclusion

Stay-at-home policy was adopted by majority of the countries during covid-19 which negatively affected the learners across the globe. This impact was not as high in the developed countries as it was in the developing countries. In the developed countries students already had previous experience of online learning while in the developing countries online learning was the only option for students of higher educational institutions. This urgency resulted in many adaptability issues in online mode of classes. In this research study, four main variables including students' motivation, students' comfortability, state of interaction and state of learning were investigated. These variables showed the adaptability level of students with online mode of learning. The findings revealed that the motivation level of students during online mode of classes was very low due to lack of previous experience of using learning management system, social seclusion and internet disconnectivity. The state of interaction was less intensive during online mode of classes as compared to manual classes which negatively affected students' learning. The responsible factor for less intensive interaction was lack of social proximity and collaborative activities. The data revealed that the learning capacity of the students was also negatively affected. This factor was associated with lack of self-study behaviour among the students, lack of collaborative learning, less carrying capacity and irrelevance of lectures sent to the students by the teachers. The findings revealed students' discomfort during online mode of classes. Many factors were responsible for their discomfort during online mode of classes. The common among them were little knowledge about the use of LMS, internet connectivity problem, access to electronic device, electricity shortfall and dissociation from the peers.

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