



RESEARCH PAPER

**Analysis of Undergraduate Students' Performance during Covid-19:
Evidence from a Public University in Karachi**

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ABSTRACT

The study focused on student's academic performance in undergraduate programs with aim to analyze whether or not Covid-19 impacted the academic performance of undergraduate students. With a sample of n = 124 undergraduate students, the study employed the survey research with participants from two campuses of a public university in Karachi. The study was conducted using simple random sampling technique. A questionnaire with 26 items was developed and administered to 21 pilot study participants. The data was collected through personal visits, online submission and other web applications. Out of n=133 samples, nine responses were rejected as they were incomplete, smudgy or delayed. The data was analyzed through SPSS version 22. Independent sample t-test was applied to two groups of undergraduate students studying in the morning and evening regular programs of studies using 0.05 level of significance. The study failed to reject the null hypotheses. The findings of the study supported the developed hypotheses and no significant difference was found in the opinions of the university students concerning their perceptions. The academic performance of undergraduate students was found to have been impacted by Covid-19 equally due to online lecture style and non-availability of resources.

Introduction

Education is a very important resource for the development of any country. Affected education system not only degrades the country, but also has a negative impact on the youth of the country. This is the situation Pakistan has been facing for over 1.5 years due to COVID-19. While the effects of the corona virus have had an

adverse effect on the educational system in most countries of the world, the education system in Pakistan has also been affected due to this pandemic specifically in the case of Pakistani public universities. Students in public universities have faced severe difficulties in studying during the corona virus. The sudden outbreak has not only disrupted academic pursuits, but also led to a variety of issues and challenges with continuing online teaching, including the lack of access to the internet, smart phones, laptops and other related resources. A large number of students do not have the experience or resources to study online. To continue their studies, the students have suffered financially and academically. They have been in a state of confusion and complexity. In this situation, the public university students also went through the stage of online examination and the effects of Corona virus were also noticeable in the examinations.

This research study illustrates the extent to which the corona virus has affected the academic ability and performance of students in a public university in Pakistan and its impact on the learning styles of not only students, but also teachers' teaching methodologies. Due to the change in their teaching method, the direct effect of this has been seen in the study of students. Online examination performance of students have also been affected to a great extent. This has also been explained in this research study.

Corona virus 2019 (COVID-19) is a highly contagious disease that has created a worldwide epidemic (Aynalem, et. al. 2020). According to Choompunch et. al., (2021), the first instances of COVID-19 were discovered in December 2019 in Wuhan, Hubei Province in China. Several scientists gathered samples from the World Health Organization (2020a) and eventually the pandemic was declared. Because of its rapid spread, the novel coronavirus was declared a pandemic, revealing the presence of a new coronavirus strain. People have been infected by deaths in every area of the world. (World Health Organization, 2020). Furthermore, on February 26, 2020, the first outbreak of COVID-19 occurred in Pakistan, with 192970 cases with 3904 fatalities and 81307 recoveries until June 24, 2020. On March 14, 2020, Government of Pakistan stopped all educational institutions in the country, followed by the closure of all commercial malls and public offices at all other government institutions, halting all public transport, and ordering people to stay at home (Ali et. al. 2020).

People around the world have been struggling to live their lives after this outbreak. COVID-19 has caused tension, unhappiness and quarantine that have affected the health behaviors of students; these psychological and emotional issues will have had an impact on their study habits, graduation and career position in the future. (Ministry of Public Health, 2020). According to Choompunch et. al., (2021), there is no publication and sufficient research on the effect of COVID-19 pandemic on educational institutions. UNESCO (2020) is one of the few, reporting that most countries throughout the world temporarily closed education institutions in an effort to halt the spread of the COVID-19 pandemic. These nationwide closures affected

around 89 percent of the world's student population. Several other countries have implemented localized closures that affected millions of pupils.

The temporarily-closed educational institutions have a detrimental influence on student learning in an effort to halt the global spread of the COVID-19 pandemic worldwide. In order to prevent the spread of the COVID-19 pandemic globally, educational institutions were temporarily closed and this also impacted the higher education in several ways. Many universities stopped any on-campus classes to limit the spread of coronavirus. Classes are, where possible, held online. Semester examinations and thesis examinations have been postponed or kept in alternative formats, causing degrees to be awarded later (Jegade, 2020).

University undergraduate students have been found to be more afraid of COVID-19 than graduates. Furthermore, due to social isolation and lockdown measures, these pupils' anxiety and depression symptoms have also increased according to some reports (Rodríguez-Hidalgo, et. al. 2020) For the above purposes, the research aimed to analyze the academic performance of undergraduate students and examine the factors that affect undergraduate students during COVID-19 outbreaks. Furthermore, university undergraduate students show more critical lifestyle patterns and mental health concerns than other students, including elevated levels of stress. The effects of coronavirus have been severe in the studies of university students and in their final semester examinations. Due to the postponement of exams, the students are forced to graduate late. Likewise in Karachi, undergraduate students of public universities suffered a lot during pandemic. Online classes and online assessment were not very easy to conduct due to major issues of resources and experience of delivering lectures and for students to learn online. The above mention factors impacted the undergraduate student's academic performance in Pakistan.

Literature Review

According to Hussein, et. al. (2020), COVID-19 first started in Wuhan, China. This is a contagious disease. Corona virus has spread rapidly around the world and in view of its effects, the World Health Organization (WHO) has declared it a global epidemic. According to Kashid et. al. (2020) where other countries in the world have been affected by the Corona virus, its effects of the have also been felt in Pakistan. In a study by Aziz, et. al. (2020), the first case of Corona virus in Pakistan was confirmed by the Ministry of Health on February 26, 2020 after which it rapidly spread across Pakistan. The world is still witnessing its propagation because of which most countries are confronted with catastrophic social, economic and political crises. In particular, it has already affected developing countries' shaking economies, such as Pakistan. The pandemic has also changed the ways people face the environment in numerous ways, ranging from transportation to social activities, like lifestyle, beyond the direct strain on the health sector.

According to Hussein et. al. (2020), the pandemic has severely damaged the education system. According to UN and UNESCO statistics, this has been confirmed

that the long-term effects of Covid-19 can be compounded in the process of online teaching and learning. As a result, students and teachers may face many problems and they will have to learn how to further improve the online teaching and learning process. Elmer, et. al. (2020) stated that a number of stressors unique to COVID-19 may further impact the mental health of individuals. This includes the impact of physical and economic well-being on oneself and others, as well as concerns about the negative impact on students' future employment and professional careers. As per Modi, & et, al, (2020), depression and complexity may be triggered by events like pandemics because we might not be equipped to cope with the associated consequences. Fear and anxiety are the most common signs of such disasters. It is possibly because of skewed emotions that impair people's ability to stay calm and to think rationally in the disaster scenario. Such skewed thoughts eventually occur and some typical thoughts can involve the drawing of negative results and can cause pandemic or tragedy-related negatives. [Mahdy](#) (2020) stated that educational institutions in various countries around the world have been temporarily closed and a large number of students have been adversely affected by the Covid-19 in the education of about 1.7 billion students. To prevent these effects, regional closures have been established in 64 countries around the world to reduce the effects of the Corona virus, which is why many universities around the world temporarily postpone and cancelled examinations.

Aziz et al (2020) confirmed that for many undergraduate and graduate students of public universities, online education has not proved to be as effective as physical classroom education, so measures are needed to make their education more effective so students have the best resources to learn online because many students studying in public universities have lacked resources to learning. According to Chan and Pheng (2018), university students' attitude towards a particular type of learning is ambiguous.

According to Singh, at al (2020), students are increasingly frustrated with the effects of the COVID-19 because their academic years are wasted. Heriyanto, et. al. (2020) explained that students at universities considered a demanding occupation. It includes their struggling during their time at university with certain quantities of work. The scholarly works that are usually referred to as tasks that often come in various types, such as essays, are something that students need to deal with. Students need to have a strong knowledge capacity to be able to do such works. It is an ability that helps them understand what the mission is about and how to overcome the problems with the assignments. Undergraduate students are aware of the development benefits and uses of the Internet. They are known as the local digital generation, but learning through this pandemic has led many students to express concern about learning online through the Internet because their exams are badly affected. According to Sharjeel (2020), most teachers in Pakistan did not even consider the possibility and potential of e-learning. It is necessary that teachers have both the skills. E-learning problems lie on both ends of the spectrum; many students lack access to reliable internet and electricity facilities, especially in rural parts of the country,

while teachers also have to cope with their inexperience with these systems. On the 'Inclusive Internet Index' and low levels of digital literacy and poor network capacity, Pakistan is cited as major obstacles to development in 76 out of 100 countries (Economist Unit for Intelligence, 2020). Furthermore, many students have taken to demanding refunds or partial financial discounts as a result. Many board exams have been cancelled, forcing universities to amend their admission criteria. For the latter, it is difficult to ensure fair testing with online examinations. Students of higher educational institutes across Pakistan are facing anxiety, depression, and emotional detachment.

Modi et. al. (2020), explain that depression and complexity may be triggered by events like pandemics because we might not be equipped to cope with the associated consequences. Fear and anxiety are the most common signs of such disasters. Possibly because of skewed emotions that impair people's ability to stay calm and to think rationally in the disaster scenario. All public and private higher learning institutions were compelled to delay their classes and lectures during the pandemic. Such institutions were then encouraged to use any appropriate online platforms to take courses. Since then, all educators have been permitted to teach online courses and classes for the first time. Invariably, this approach has contributed too many difficulties that educators face in conducting online classes.

Online learning refers to the methods of teaching and learning in which using of appropriate online learning tools is expected. Via electronic networks such as the Internet, television, TV, CD-ROM, and radio, the online teaching method links teachers and students. There is also evidence that new teachers who do not have experience in the field of education and students who do not use the Internet more often face more difficulties. Furthermore new learners are experiencing more problems and difficulties such as fear and depression from online studies and examination Hussein, et. al. (2020) added that teachers are also facing problems such as assessing online examination scripts, identifying of students taking the examination, ensuring online examination procedure and preventing plagiarism. These problems are more common in online education because university teachers do not see each and every one of the students physically during the online study and thus sometimes the learning environment remains ineffective. There are also problems in their examinations, so a good strategy is needed to avoid these problems. Many popular educational institutions have already raised many questions on this issue. Boston University is exploring the possibility and examining whether some undergraduate students took advantage of pandemic and whether the undergraduate students cheated, misused online testing during online studies.

University undergraduate teachers are concerned about how to complete courses online on time. They face various problems in online teaching and learning application including Google Classrooms, Telegram, Zoom Meeting and Skype. If the internet is not provided in a timely manner, it takes more time and students also need regular instructions. Most importantly, it is related to the daily evaluation and review of the students' home tasks and assignments. In addition, many teachers are

concerned about how to ensure that students have access to the Internet so that they can take online classes easily and avoid technical issues while teaching online. Many students do not have emails. Public university teachers want to make it easy for them to log in and use online tools easily as many students like to read books from the beginning and they do not use the internet much which is one of the reasons for lack of resources and because of this, they have difficulty in taking online classes. (Allama et. al., 2020).

In research from Garcia (2020), it is stated that many public universities lack resources due to which they are facing various challenges in this pandemic. For this, there should have been a policy in the education system so that the educational problems could be overcome in a timely manner as the educational process should not be stopped as it could affect a large number of students and adversely affect their academic and professional qualifications. It will have a negative impact on future generations as well, so even in this pandemic, students should be introduced to new platforms for learning.

Material and Methods

Research methodology is an organized system of solving research problem and provides direction. Methodology offers complete description and validation in the current exploration of the practice and measures. The research study was planned to analyze undergraduate students' performance during Covid-19. Online performance is effective only if the students have internet access. This part consists of a thorough description and explanation in the current study of the system and technique. Sampling process, population characteristics, hypotheses, sampling technique, variables for analysis, instruments used, validation, data collection method, pilot testing, statistical techniques and ethical consideration of respondents are some of the components in the research methodology.

Research Design

The research design discussed the overall strategy the researchers selected to integrate the different components of the study in a coherent and logical way to address the research problem effectively. The study employed survey research methodology. It is an important component to carry the research further.

Population

Principle focus on people of a specific research is known as population. The target population of the study was undergraduate participants from two campuses of a public sectors university in Karachi.

Sampling Procedure

Sampling process is used in statistical analysis to observe pre-determined numbers which are taken from a larger population. The study employed random sampling technique. The sample of the study comprised $n = 124$ undergraduate students from two public sector campuses of a university operating in Karachi. Each student was enrolled in the undergraduate programme through official procedures. Samples' age ranged between 20-23 years. Each student was a full-time regular student enrolled in morning programmes of studies. None of the student was employed in any organization. Randomization of the samples was administered per the requirement. Each sample was informed of the type and nature of the study in due course of time.

Instrument Validity

Validity of a research instrument was ensured per the research design and expertise of field experts. It is the degree to which the instrument could measure what it was planned to measure. This characteristic of random sampling is meant to explain how the average values of a given estimator differ from the selected sample with the actual value of population that is called parameter. Different types of validity were also used to discuss the items of instruments with experts and some items were revised per the advice received.

Instrument Reliability

To check the consistency of results in research method, researchers referred to the conduct of test of reliability. This property of the sampling process is related to the tendency of the sample to produce similar results on repeated attempts. The idea of such a characteristic arose from the fact that one estimator must be sufficient to depend on the selected sample proportion. This sample is expected to produce similar responses under identical observed conditions. It is estimated by the value obtained by a statistical method to control the standard error of the means. Smaller values of the standard error would mean more reliability of the sample characteristics. The instrument reliability was estimated as 0.73 as a measure of Cronbach Alpha.

Research Instrument

Data was collected with the help of questionnaire with 26 items developed on Likert scale and administered to 21 pilot study participants. The data was collected through personal visits, online submission and other web applications. Later, the instrument was administered on all 124 samples.

Data Analysis

Hypothesis 1

There is no significant difference in the mean perception score of male and female students pertaining to their academic performance during Covid-19 pandemic.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.130 ^a	1	.000
Continuity Correction ^b	29.016	1	.000
Likelihood Ratio	22.873	1	.000
Fisher's Exact Test			
Linear-by-Linear Association	38.348	1	.000
N of Valid Cases	124		

We reject the Ho with n=124 participants that there is no significant difference in the mean perception score of male and female students pertaining to their academic performance during Covid-19 pandemic. The asymptotic significance of the test reads a p-value of 0.000 against a two-tailed hypothesis. We conclude that there is a significant difference in the mean perception score of male and female students pertaining to their academic performance during Covid-19 pandemic.

Hypothesis 2

There is no significant difference in the mean perception score of male and female students pertaining to the increase of technical and vocational training during covid-19 pandemic.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.000 ^a	2	.000
Likelihood Ratio	27.877	2	.000
Linear-by-Linear Association	24.683	1	.000
N of Valid Cases	124		

a. 5 cells (83.3%) have expected count less than 5. The minimum expected count is .32.

We reject the Ho with n=124 participants that there is no significant difference in the mean perception score of male and female students pertaining to the increase of technical and vocational training during covid-19 pandemic. The asymptotic significance of the test reads a p-value of 0.000 against a two-tailed hypothesis. Male students score higher in their perception score pertaining to the opening of new technical and vocational institutions than female students during the Covid-19 pandemic.

Hypothesis 3

There is no significant difference in the mean perception score of male and female students pertaining to online examination challenges and issues during Covid-19 pandemic.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.000 ^a	4	.000
Likelihood Ratio	36.692	4	.000
Linear-by-Linear Association	33.798	1	.000
N of Valid Cases	124		

a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .24.

We reject the Ho with n= 124 participants that there is no significant difference in the mean perception score of male and female students pertaining to online examination challenges and issues during Covid-19 pandemic. The asymptotic significance of the test reads a p-value of 0.000 against a two-tailed hypothesis. We conclude that there is a significant difference in the mean perception score of male and female students pertaining to online examinations during Covid-19.

Discussion

There is no doubt that undergraduate students in public universities of Pakistan have faced and are facing many difficulties due to Covid-19 pandemic which has now taken the form of a challenge which has had a negative impact on the academic performance of students. Looking at these challenges, the students faced the most problems due to online learning because online learning was definitely a first experience for them. When they went through this experience, they faced various problems such as the effects of load shedding, lack of better internet access and poor use of learning and teaching online applications. At the same time, it became clear that even if many students go through these problems or try to learn better after solving these problems, the assessment of online studies due to Covid-19 have revealed clear differences. As a result, the academic performance of many students has been adversely affected. In addition, the students also suffered from stress and depression due to the Covid-19. It is clear that all students experienced online examinations for the first time and the results that came out of the online exams. There was a significant change in this in which many male undergraduate students were not satisfied with their academic performance although many female undergraduate students appeared satisfied.

In this regard, students who were fully proficient in technology for online reading and who were also financially stable used their time wisely and used smart

phones to study or take online classes as a result of better internet connectivity. Due to this, they had the opportunity to spend most of their time in studies and improve academic performance. But we must not forget that Pakistan is a developing country and most of the students in public universities here are students who are not economically stable and have problems with load shedding in their residential areas. Lack of electricity in their home during online classes is a major problem which is a major obstacle in their online education.

In addition, many public university teachers, as well as students, began to study online for the first time due to the corona virus outbreak and faced various challenges. Solutions to these problems were found to a great extent. But these problems still exist for the students and they are facing various problems during this pandemic and are trying to solve these problems.

Conclusion

The study concludes that public universities in Pakistan need to stay abreast of natural calamities and issues. Challenging scenarios developed post-Covid-19 has bred the fact that when we are not prepared to face such health issues, we would suffer academically. Consequently, the academia and the industry will suffer more. Another conclusion of the study is that substantial aid must be provided to the teachers and students to equip themselves with ICT and internet resources so that they can learn to adjust in any pandemic in future. Provision of internet connectivity, electricity generator, computer laboratories, access to online programmes and online examination applications are some of the basic requirement to adjust in the emerging scenario of natural calamity such as pandemic.

Recommendations

- There is a need to improve the online exam system so that students' performance can be better monitored.
- There is a need to provide full awareness to the students about this and to guide them better to read online. Teachers may explain the solutions to the problems they are facing so that they can easily study online at home and make the best use of their time during the pandemic.
- In the midst of this pandemic, various programs should be introduced for the students of these public universities to conduct various types of professional and vocational online courses, so that all students can study online as well as complete online courses. These courses are also an important need of the time.
- Research has shown that most of the problems faced by public university students in online studies are related to load shedding. Therefore, load shedding issues should be addressed at the federal and provincial level in

Pakistan so that students can access their online classes on time as per time table.

- In view of the current pandemic, it is imperative that in order to better teach students online, teachers who need training for online teaching should be given clear instructions so that teachers of public university prevent all the challenges and difficulties related to online teaching.

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