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The Influence Of Online Education On Academic Achievements Of Higher Education Students In The Education Department Of Karachi Universities Amidst Covid-19

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Abstract

The year 2020 witnessed the onset of the formidable challenge posed by the COVID-19 pandemic, instigating widespread fear due to its relentless toll on human lives. In response, global lockdowns emerged as the primary defense against the virus, leading to the closure of various facets of life, with the educational sector no exception. Amid this crisis, institutions swiftly transitioned from traditional face-to-face teaching to online education to alleviate the academic setbacks faced by students. This study was conducted to investigate the influence of online education on the academic achievements of MS/MPhil students within the education departments of public universities in Karachi during the COVID-19 pandemic; by utilizing a quantitative research approach and the survey research method, the study focused on three public universities, involving a population of 186 students, with a sample size of 139. The data collection process incorporated a twenty-four-item Likert Scale, implemented through simple random sampling. Study findings highlighted a positive impact of online education on students' academic achievements during COVID-19. Despite students expressing dissatisfaction with online education due to a lack of expertise and resources, and requires concerted efforts from all stakeholders, including the development of robust infrastructure, the presence of skilled human resources, and the provision of adequate financial and technical support.

***Higher** Education, Online Education in Pakistan, COVID-19 and Academic Achievements.*

1. Introduction

The unexpected spread of Covid-19 upset the world at the beginning of 2020, and World Health Organization (WHO, 2020) declared C[1]ovid-19 as a "Pandemic" for the world. Therefore, countries closed their borders to foreigners, suspended all types of business and related activities, closed all educational institutions and started lockdowns for social distancing and to save people from this deadly disease.

The Government of Pakistan declared the first suspected case of Covid-19 on 26 February 2020; he was a student at the University of Karachi, and the second case was from Islamabad (Noreen, 2020; Adnan, 2020). The Pakistani Government took prompt action, closed its border with other countries, and enforced smart lockdown. Moreover, suspend

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all educational activities and closing the institutions to save the students from this deadly virus (GoP, 2020, March 13).

The Higher Education Commission (HEC, 2020) of Pakistan stopped all educational activities and announced that online classes would start soon to save the educational loss. Online education, Virtual education and Distance learning is not new mode of education for Pakistan because Allama Iqbal Open University (Iqbal & Ahmed, 2010; Ali & Ahmad, 2011) and Virtual University of Pakistan (Toor, 2005; Perveen, 2022) are providing online educational facilities from many years, but it is not a popular mode of education due to lack of technological and financial resources and professional skills (Rehman, Lashari & Abbas, 2023). Therefore, HEC's decision to shift from a traditional to a virtual environment created a challenging situation for educational institutions in Pakistan (Adnan & Anwar, 2020).

Many institutions needed to be more capable of providing quality education in different areas. Although these institutions have modern technology and were shifted from face-to-face learning to a virtual environment within a few months to start their online classes, they failed to maintain standards due to a lack of expertise and previous experience. Sahu (2020) highlighted many challenges regarding evaluation and examination procedures, topics taught through online classes, teachers' expertise, technological skills and availability of technology (Buriro et al., 2023). Furthermore, some researchers raised the question about learning outcomes, learning achievement, and assessment of the students (Alam, 2020; Fayaz et al., 2023), learning experience (Adedoyin & Soykan 2020), online teaching skills and quality of teaching (Aristovnik et al., 2020). Demuyakar (2020) states that designing content and course outlines is influential for successful and effective e-learning.

Mishra et al. (2020, p.5) defined the importance and need of different skills which are required to conduct online classes, such as; "Excellent domain knowledge, proficient computer knowledge, communication skills, clarity of expression, emotional connect with the students" and 'skills to use modern technological tools and software such as; desktop, laptop, smartphones, internet, and A/V material.' (Radha et al., 2020; Keiper et al., 2020).

This research aims to determine the influence of online education on Higher Education students' academic achievements during the COVID-19 pandemic. The COVID-19 pandemic upset the educational setup of the world. After the spread of covid-19 Government closed all academic institutions from primary to higher education and shifted the educational structure from a face-to-face to an online education system worldwide.

Online education means the use of computers and the Internet for educational purposes. According to Sun & Chen (2016), online education is the learning processes in which teachers and students are separate from each other geographically. Moore et al. (2010) mentioned that it is very difficult to define online learning because different scholars used different terminologies for online education, such as distance, e-learning, web-based, internet-learning, computer-based, and virtual learning. Many countries offer online education in the synchronous and asynchronous model using different names; Hybrid, Flipped, or Blended learning, requires full infrastructure with the help of electronic devices such as computers, laptops, tablets and the Internet (Harasim, 2000).

According to Lock & Redmond (2015, p. 23), online education provides "the opportunities to communicate with numerous people beyond the traditional teacher-student interaction" and share information, ideas, experiences and knowledge increase understanding between them. It improves the students' discussion and communication abilities and increases their confidence. At the same time, an important factor is motivation because, with motivation, students feel confident to learn online. According to Wise & Im (2015) motivational strategies is useful must be included in designing online learning activities to maintain

students' interest so they don't feel isolated because the successful learning experiences are based on students' motivation. According to Arora et al. (2015) online education increases students' confidence to interact with others and text interpretation, which is also helpful in self-assessment.

Therefore, we can say that Online education was familiar globally during the COVID-19 pandemic, and many higher education institutions offered online and virtual learning environments worldwide including Pakistan. They were already using a "Content Management System" (CMS), and students have access to a "Learning Management System" (LMS). During COVID-19, they could shift online within a few months because they already had resources, and their teaching faculty and students were aware of using LMS. However, many studies proved that they faced difficulties during online teaching and designing effective online learning environments and courses. Moreover, teachers and students need help with online education during the pandemic. Although some institutions provided training before starting online classes, research shows that it was not very useful for them. (Iqbal et al., 2022).

According to Adnan & Anwar (2020), this changing mode of education was a challenge for all students, affecting their learning. Moreover, many higher education institutions not providing LMS services could not start online classes. Therefore, the Government announced relaxation for students in attendance, course duration, evaluation, and measurement. These relaxations were another challenge for educationists and students because they were worried about online learning outcomes—especially higher education students who have to participate in practical life after completing the degree. There were many questions about whether they will get degrees, expertise in their relevant field and find jobs in future or not.

This research provides in-depth knowledge and information about the challenges students face during online education and the benefits received by the students due to online education during Covid-19. Moreover, provide functional and applicable suggestions to all stakeholders, such as; the Higher Education Commission (HEC), Administration of Universities, and Teaching Faculty of Higher Educational Institutions, to resolve issues regarding online education in the light of the result of this study.

Although several articles are regularly published on covid-19, covering different aspects, but no academic research found in this area, especially on the Impact of online education on the academic achievements of the higher education students of the education department; therefore, a researcher has chosen this area to work.

Research Question

Following research question is designed to conduct this study:

a How has the transition from face-to-face to online education prompted by the COVID=19 pandemic, affected higher education students' academic achievements?

Research Hypothesis

Following Null hypothesis is designed to conduct this study:

$H_0$1: There is no significant influence of online education on the higher education students' academic achievements.

LITERATURE REVIEW

At the beginning of 2020, the world was surprised to know about Covid-19 when China declared that it found a new kind of deadly virus spreading and infecting others speedily, followed by Italy & Iran declared in February 2020 and within a few days some other countries reported the same. Director General WHO declared this virus a Public Health Emergency of International Concern (PHEIC) in January 2020, and on 11 March 2020, he used the word Pandemic for Covid-19 in his opening remarks of a public speech with the media.

This novel coronavirus severely affected every aspect of human life because the condition was unpredictable many industries around the world suddenly shut down due to lockdown and adopted the policy, "work from home" to control the spread of coronavirus including educational institutions. United Nations International Children's Emergency Fund (UNICEF, 2020, October 5) reported that around 1.6 billion students and 63 million educators were affected by schools closed due to the suspension of traditional methods of teaching. To resolve this problem, it was decided to switch to online education as soon as possible therefore many institutions around the globe try to implement online methods of education. No doubt it troubled the institutions due to the non-availability of resources and expertise in the field of online education and the use of technology. Especially developing countries feel challenged to adopt this mode of education.

Within six months many institutions around the globe from primary to higher levels started their online programs. The COVID-19 situation provided an opportunity for the world to explore more methods of education such as blended, flexible, hybrid etc. with synchronous and asynchronous approaches in e-learning and online learning methods. (Iqbal et al., 2022).

This research aims to review all relevant material published on the COVID-19 pandemic and its impact on education. It will inspect the role of COVID-19 on students' academic achievements, challenges faced by students during the pandemic and benefits received during the pandemic concerning education.

2.1 Pandemic COVID-19 and Pakistan

In Pakistan the first case of Covid-19 was suspected on 26 February 2020 (Adnan & Anwar, 2020; Waris et al., 2020; Abid et al., 2020), the first one was a student belongs the University of Karachi, and the second one was from Islamabad both return from Iran (Jawed, 2020; Noreen et al., 2020). Therefore, the Government of Pakistan took two main actions; first announce to close its border with other countries because both countries China and Iran shared a border with Pakistan therefore, the Government promptly enforced a smart lockdown and second is to close all educational institutions. According to Mishra et al. (2020, p.1), "Lockdown is a state of the emergency protocol implemented by the competent authorities to restrict people from leaving their place of living" to enforce restrictions in travelling inland and outside the country (Sahu, 2020)

On March 13, 2020, Government announced to suspend all Higher educational activities (regular classes, examination and admission) to save students from this deadly virus. On 18th March, Higher Education Commission of Pakistan announced a break for universities till the online classes start. According to Nambiar (2020) 'it become compulsory for all educational institution to suspend their traditional classes and shift towards online education' because it feels safest and appropriate mode of learning during pandemic situation and proved that online education is the only alternative to save the people from this disease (Tang et al., 2020; Mishra et al., 2020; Paudel, 2020) therefore, universities shifted from traditional method of teaching to online teaching through digital tools (Tang

et al., 2020). Meanwhile, Higher Education Commission of Pakistan (2020, March 25) planned 'to start online education and academic activities during a lockdown and three committees had been proposed; To support I.T., Software, technology, and online content design.

The aim was to start educational activities earliest through the Internet and LMS. HEC technical support committee has been formed, to support universities and provided free access to Microsoft Team software and the HEC Digital library, further requesting experts to share their knowledge about Covid-19 and spread this knowledge in every sector of life to give awareness to the public.' To save the time of students and continue education activities Government issued a notification (2020, March 27), that all educational activities will be transferred from face-to-face learning to online learning.

A country like Pakistan indeed has lack of resources to provide online education along with many hurdles in the educational sector, many institutions were shut down due to a lack of finance and the non-availability of required equipment for online education but on the other hand, it provided an opportunity to adopt and implement technology in the educational sector and switch from traditional to online learning (Jena, 2020)

Online, Web-Based, Virtual Education

All technology-based educational system such as; the Internet, videoconference, A/V material, computer, multimedia, etc. (Schunk, 2012) enable one to learn anytime, at any whereas compared to the traditional method in which teacher control everything and influence the personality of the student, learning environment, course designing, performance and learning material in class (Baz, 2018).

According to Ally (2004) "Different terminologies have been used for online learning which makes it difficult to develop a generic definition. Terms commonly used for online learning include e-learning, internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer assisted learning, web-based learning, and distance learning"(p.16).

According to Moyo et al. (2022) "the difference between online and e-learning must be drawn to avoid misinterpreting the two concepts"(p.24). According to Larsen & Vincent-Lancrin (2006) Online instruction can allow many students to access education and physical barriers such as the size of the learning spaces and the student/teacher ratio are surpassed. Online learning has a narrower focus than e-learning and digital education, where the latter includes a wide variety of digital tools and resources, not just the internet.

According to Yang and Dong (2017), 'E-learning can provide various technological support to assist teaching & learning. The technological support mainly includes developing learning content to instruct learning, setting up learning environments to engage learning, designing platforms and tools to enhance learning, and organizing and standardizing learning resources to make the learning content revisable and more formal. Web-based learning is self-paced learning which requires students to access the internet via devices like computers.'

According to Goyal (2012) e-learning is the use of telecommunication technology to deliver information for education and training. With the progress of information and communication technology development, e-learning is emerging as the paradigm of modern education (p.240). Alam (2020), defined online education as studying from home by using own computer and the internet. As per Haythornthwaite and Andrews (2011), The

combination of electronic communication devices through the internet and provide access to digital libraries, electronic information, virtual environment, Learning Management Systems (LMS) or Course Management Systems (CMS) are the infrastructure of e-learning.

Distance and Online Education in Pakistan

Distance education in Pakistan was started during the 1970s, Allama Iqbal Open University (AIOU) was established in 1974 and offers courses from literacy (functional) to higher education (PhD) level in almost all fields of education. Aim was to provide educational opportunities to those who cannot leave their area or are busy with jobs. AIOU is a pioneer distance education institution in Asia and second in the world because the first one was the open university of the United Kingdom. In the beginning, AIOU was mostly used as correspondence material for education. However, it is fully equipped with technology and has a separate section with the name, "Institute of Educational Technology". The function of this institution is to prepare CDs and conduct programs to telecast on Radio and Television. AIOU has its own FM Radio and TV channel and provides quality education to those who have no access to institutions or universities such as rural areas. (Urooj, 2013; Bughio, 2014; Ali, 2011; Hussain, 2008).

Allam Iqbal Open University (AIOU) as a leading distance university in Pakistan became the driving force behind the Virtual University (VU) or online education means providing education beyond the boundary. The Virtual University of Pakistan was founded in 2002, the first Pakistani university open with the concept "to provide extremely affordable world-class education to students all over the country and world" (Bughio, 2014, p.276) fully equipped with modern communication technology tools.

Before the pandemic AIOU, VU, Bahauddin Zakaria University (Multan), The Islamia University of Bahawalpur and COMSAT Institute of Information Technology were providing online education in Pakistan. (Farid, 2014).

Although these universities started their online and distance education programs with proper planning and objectives and they were already facing difficulties and challenges in different areas. Iqbal et al. (2022), mentioned problems regarding the 'quality of instructions and modes of communication, the use of online assessment methods, internet and connectivity problems' are affecting the performance of the students.' Mukhtar et al. (2020) highlighted the same problems in their study, 'Internet access and connectivity, quality of instruction, digital readiness (lack of training) of instructors, technical issues, quality of online education. Therefore, online and virtual education systems are still in the initial stage.

2.4 Academic Achievements

Many scholars proved that academic achievements are based on different factors such as the learning experiences of the students in school; the economic and social background of students, society and environment etc. These factors develop the personality of the students. Educators believe that learning experiences mean the academic performance of the students and overall changes in students' personalities such as; Knowledge, Skills and Attitude. Therefore, educational institutions design their courses with high consideration. Unexpected Covid-19 changed the scenario of the educational world, this pandemic influenced the learning process of the entire world. No doubt online education was the impressive solution during this situation but many studies show that it was not effective at all. Students were uncertain about their academic performance and feel hard to understand

the situation, especially after Covid-19 the market value and credibility of their education (Rahat et al., 2022)

All educational institutions in the world have the same objective, means to deliver effective education to the students. Additionally, it provides them with awareness and information about the world, which guides them to improve their morals, their behaviour and polish their abilities (Bushra et al., 2024). Therefore, educationist design curriculums to consider all the requirements of the students. Student academic performance covers the academic achievements of the student such as his learning level as per lower-order thinking skills (LOTs) or higher-order thinking skills (HOTs) especially described by Bloom (1965) in his learning taxonomy. Learning taxonomy provides the criteria for assessing student learning performance to see if students can achieve their learning outcomes. Many institutions in the world prepare or design their curriculum and courses as per Bloom's Taxonomy. They teach students as per the designed course by considering the learning outcomes. Learning outcomes are learning objectives that students are expected to achieve at the end of learning, which could be intellectual, physical skills and emotional learning outcomes' (Yang & Dong, 2017), according to Umar (2022, p.3) "learning outcomes assist teachers and students in reaching a shared understanding regarding the aims and objectives of the course or an academic program", by effective teaching and learning process; evaluating and assessment of the student's performance"(Buriro et al., 2023, p.115). Furthermore, "student assessment measures the level of student achievement on knowledge and abilities. The assessment can be summative or formative." (Yang & Dong, 2017, p.25). When student think deeply their higher-order thinking start working, which led them towards analyzing different situations and foster their creative ability (Isabekov, 2018). It is a fact that students of Higher education should be able to reach or perform as HOTs, they can imagine things and situations to provide creative solutions. According to Chu et al. (2021), Motivation is crucial for student learning in education. Online environments allow for diverse teaching methods, fostering interaction and flexible facilitation (Bushra et al., 2024; Mooman, Ali & Lashari, 2023). This, in turn, boosts student motivation, leading to improved learning outcomes and satisfaction (Lashari & Umrani, 2023). While Saenab et al. (2018) highlighted the role of communication as 21st-century skills, people communicate with each other to exchange their experiences, ideas, and feelings by using direct (face-to-face) or indirect (through paper or electronic devices) methods. It is crucial that teachers and students; students and students communicate with each other positively to gain fruitful results. Umar (2022, p.9), revealed "problem solving exercises is excellent way to discover individual and group teamwork capabilities", because combination of coordination and communication is crucial for academic achievements. Moreover, Information technology is the main component of online education without IT skills it is not possible to learn online. It can be defined as the processing of information with the help of electronic devices via software such as computers, smartphone infrastructure includes; hardware, software, databases, data communication (Collis, 2013) and making available information through telecommunication (Ratheeswari, 2018). But keep in mind that "the use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communication technology (ICT) for both educator and learner" (Pokhrel & Chhetri, 2021, p.135). Additionally, the use of ICT is very effective for self-directed learning, to foster problem-solving and critical thinking skills.

3. RESEARCH DESIGN AND METHODOLOGY

Quantitative research methodology has been used to conduct this study. According to Fraenkel et al. (2011), Quantitative data predominantly revolves around numerical values, often grounded in the premise that facts and emotions can be distinct entities. This perspective posits that the world is a unified reality composed of ascertainable facts

awaiting discovery. According to Hoy & Adam (2016), 'Measurement and statistics play a pivotal role in quantitative research as they serve as the bridge between empirical observations and mathematical representations of relationships. Quantitative research focuses on formulating and testing hypotheses, as well as generating models and theories to explain behavioral phenomena.'

Survey research method proves highly valuable in quantitative research therefore, the researcher used the Survey research method to collect data from participants, survey research method helps to obtain precise information on a topic from a large population and to find out the valid solutions from the facts discovered through study. Specifically, it intends to rely on participant self-report reflection of his knowledge, skill and attitude towards the topic of the survey (Mertens, 2010). In this study, the researcher used simple random sampling techniques in which everyone has an equal chance of being selected as a sample. In these techniques, a complete list of the population is required from which the researcher selects the sample randomly per sampling size (Mertens, 2010). In random sampling, the researcher has to assign numbers to all populations simply by using table rows and columns and then randomly select the required sample (Lodico et al., 2006). According to Cohen et al. (2018), a sample size must be greater if the inferential statistics have to be calculated and the researcher wants to generalize the result. Therefore, the researcher used an online calculator to find the sample size of the sampling frame. As per the calculator, the sample size should be 126 or more, so the researcher selected 137 samples randomly for the research.

The population of the study are all MS/ MPhil Students enrolled in the Education Departments of the universities located in Karachi. According to Lodico et al. (2006, p.223), "a complete list of persons in the realistic population is called a sampling frame." In Karachi, only ten (10) universities are offering MS/ MPhil degree programs in Education subjects in the public and private sectors (HEC, 2021 January 18). The Researcher selected three (03) Public Sector universities as the population of the study which is as follows:

Sampling Frame

Public Sector Universities		**Population (**Approx.)	**Sample received**
1.	University of Karachi (UoK)	67	43
2.	Sindh Madrasatul Islam University (SMIU)	78	69
3.	Benazir Bhutto Shaheed University Lyari (BBSUL)	41	27
Total		186	139

Table 3.1

The total number of populations is N=186 and the Sample size is n=139, the size of the sample was calculated by the "sample size calculator" (calculator.net), which shows that 126 or more samples are required as sample size. According to Saunders, Lewis & Thornhill (2012) if the population is 200 then the sample size will be 132 with 5% margin of error with 95% confidence level.

3.1 Research Instruments

According to Saunders et al. (2012) in the survey research method, the questionnaire is widely used for data collection. The questionnaire should be reliable and ensure that it will provide authentic and relevant data as per research objectives. Therefore, the researcher studies some relevant instruments to adapt or to adept them but those scales or instruments were designed with different approaches so, researcher developed an instrument with the

help of the subject experts. Then, research piloted instrument twice till the result found satisfactory. The instrument contains two sections: Section A, contains Demographic and Academic background information and the Section B, contains twenty-four items/ statements (24) designed by using a 5-point Liker Scale.

The value of Cronbach's Alpha was 0.76, According to Taber (2018) Values above .7 are considered acceptable. Saunders et al. (2012), mentioned that value .7 and above indicate that the questions combined in the scale are measuring the same thing. Therefore, instrument was acceptable and proved that it is reliable to collect the data and required no further modification.

The reliability of the scale as per SPSS Software, is as follows:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.763	.771	24

Table 3.2

3.2 Data Collection

After the authentication of the scale as per the result of pilot testing, the data was collected through Google Form and analyzed through SPSS Software (version 22)

4. DATA ANALYSIS

To analysis the demographic data SPSS software has been used and demographic information is interpreted with the help of the percentage. The data has been presented in Percentage, Mean, and Standard Deviation of each statement.

4.1 Interpretation of Demographic Information

The total participants of the research are N=139, belongs to three public sector universities.

	Group	Frequency	Percentage
Gender	Male	58	41.7
	Female	81	58.3
	Total	139	100.0
Age	20-25	16	11.5
	26-30	30	21.6
	31-35	35	25.2
	36-40	28	20.1
	41-45	24	17.3
	45+	6	4.3
	Total	139	100.0
Institutions	UoK	43	30.9
	SMIU	69	49.6
	BBSUL	27	19.4

	Total	139	100.0

Table 4.1

Table 4.1 displays a participant count of N=139, with females comprising 58.3% and males 41.7% of the total. Notably, the data indicates a higher enrollment of females (25.2%) aged 31-35 in education compared to males. Only 4.3% of participants aged 45+ were enrolled in MPhil/MS programs. The result shows a trend where individuals, especially females, show increased interest in professional education after their 30s. Additionally, the majority of respondents are from SMIU (49.6%), followed by UoK (30.9%) and BBSUL (19.4%). The statistics suggest that SMIU had a higher admission rate for online education during COVID-19 compared to other public and private sector universities.

4.2 Hypothesis analysis

To check the influence of the online education due to COVID-19 on the students' academic achievements as per objective, twenty-four (24) items were designed from which ten items belong to Online education (Independent variable) and fourteen items belongs to students' Academic Achievements (Dependent variable). Researcher designed a null hypothesis to determine the influence of online education on students' academic achievements. Researcher used linear regression analysis to test the hypothesis. According to the Mendenhall & Sincich (2012) in simple leaner regression we use straight-line model to predict the data. Following is the result and interpretation of the data.

4.2.1 Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.469[a]	.220	.214	.43659

Table 4.2

a. Predictors: (Constant) Online Education (OE)
b. Dependent Variable: Students' Academic Achievements (SAA)

The correlation coefficient (R) between the independent and dependent variables in 0.469. this value indicated a moderate positive correlation. With an R^2 value greater than 0.05, the overall variation suggests that the model effectively defines the relationship between the variables. Specifically, the R^2 for this analysis in 0.220. The Adjusted R^2, at 0.214, is close to R^2=0.220, indicating a reasonable level of result generalization and affirming the model's utility.

4.2.2 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.361	1	7.361	38.619	.000[b]
	Residual	26.114	137	.191		
	Total	33.475	138			

Table 4.3
a. Independent Variable: OE
b. Dependent Variable: SSA

This research adopted a 95% confidence interval and a 5% significance level. The p-value, set to be less than 0.05, was compared to the significance value recorded in the table,

revealing a value of .000, indicating statistical significance. Furthermore, with an F-value of 38.619, exceeding the degree of freedom, it measures the overall significance of the regression model. Consequently, the model has demonstrated efficiency, affirming that the relationship between the two variables is not merely a result of random chance.

4.2.3 Coefficients[a]

Unstandardized	**Coefficients**	**Standardized Coefficients**		
B	Std. Error	Beta	T	Sig
1.356	.269		5.036	.000
.512	.082	.469	6.214	.000

Table 4.4

a. Dependent Variable: SAA
b. Independent Variable: OE

The significance level is recorded as .000, below the chosen p-value threshold 0.05 for a 95% confidence interval. The calculated t-value is 5.036, surpassing the critical value of 2. This further reinforces statistical significance, indicating a positive influence of the variables on each other. The outcome supports the conclusion that online education significantly impacts students' academic achievements. Consequently, the Null Hypothesis H_0 is rejected.

5 Conclusion

To examine the influence of online education on higher education students' academic achievements during COVID-19, a quantitative study was conducted. The findings of the study revealing a significant positive impact of online education on higher education students' academic achievements.

Furthermore, the study contradicted assertions by some scholars regarding electronic device shortages. It revealed that the majority of higher education students owned personal devices and smoothly transitioned from face-to-face to online classes during the pandemic. However, a notable portion reported a lack of Learning Management System (LMS) training from their institutions, emphasizing a digital divide influenced by factors such as family income, age, gender, and internet accessibility.

Crucial to the success of online education was the support from teachers and institutions. Students appreciated timely feedback on assignments and access to digital resources like e-books and video recordings. However, challenges arose in the design of educational methodologies for online learning, leading to dissatisfaction with teaching methods, evaluation processes, and overall understanding of online lectures.

While some students claimed improved problem-solving and critical thinking skills, most disagreed that online classes were as interactive as traditional face-to-face sessions. The study revealed mixed sentiments regarding the impact on academic performance, with only a few students acknowledging improvement. Time management proved vital, with satisfaction among students who adapted to online education, although long-hour classes and additional assignments were sources of discontent.

Notably, the study demonstrated that students became more self-reliant and less dependent on teachers, yet the majority preferred traditional methods over online learning. Challenges such as electricity issues, internet speed, and the lack of a conducive home learning environment contributed to dissatisfaction.

The study concluded that online education significantly impacted students' overall educational achievements during the pandemic, revealing both positive and negative aspects. It emphasized the need for comprehensive support and infrastructure to address the highlighted challenges and improve the overall effectiveness of online education.

6. Findings

Findings of the study highlighted many facts about online education due to COVID-19 and its influence on the students' academic achievements. These findings are elaborated from data analysis and interpretation, by comprehensive analysis and evaluation of the result of questionnaires.

Null Hypothesis was designed to determine online education's influence on Higher Education students' academic achievements and analyzed by using linear regression analysis. Following are the findings of the regression analysis:

H_0= There is no significant influence of online education on higher education students' academic achievements

The H_0 claims no significant influence of online education on students' academic achievements. Online education (OE) serves as the independent variable, while Students' Academic Achievements (SAA) serves as the dependent variable. Following regression analysis, the R value was determined to be 0.469, signifying a substantial relationship between these variables. Additionally, the F value of 38.619 exceeds 1, indicating the statistical significance of the model and suggesting that the analysis results are not random. Consequently, the model demonstrated efficacy. The significance p-value is 0.000 is less than 0.05 which shows meaningful impact of independent variable on dependent variable, The value of t is 5.036 which is greater than 2 shows the confidence in the coefficient as predictor. Consequently, Null Hypothesis H_0 is rejected. It means that online education has a significant impact on higher education students' Academic achievements.

7. Recommendations

1. The Higher Education Commission of Pakistan (HECP) provided technical support during COVID-19, which should be continued regularly. It has to ensure that all Higher Education Institutions (HEIs) have LMS and CMS services. HEC links with the internet service provider in the country and provides low price packages to HEIs and students. Additionally, ensure that all students have gadgets for study offered by the Government laptop scheme.

2. Universities have to provide all important equipment and facilities for learning, such as Qualified Teaching Faculty, Qualified and skilled supporting staff, IT laboratory, and free internet and provide training to teachers and students regularly.

3. According to Denis & Frances (2014), Technical support in the universities of developing countries could be stronger if the administration provides facilities to use E-learning in their teaching. They must provide LMS, CMS, and Zoom (Jummani et al., 2018), training of MS Office packages in the curriculum and

contents by using Blended/ Hybrid Learning approach (Aboagye et al., 2020; Bacci et al. 2023).

4. Moreover, teaching faculty has to design their content using blended approaches such as synchronous and asynchronous. They must attend workshops and seminars to improve technological skills and use it in teaching practices.

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