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ROLE OF ONLINE EDUCATION IN STUDENT PERFORMANCE AMID THE PANDEMIC (COVID-19): STUDY OF PUBLIC SECTOR COLLEGES IN KARACHI

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Abstract:

A catastrophic phenomenon has been witnessed the world recentlyin the shape of pandemic Covid-19. This unpercedent phenomenon became fatal one for the educational sector particularly . Hence this study attempted to analyse the role of online education in studentsperformance who study in public sector colleges of karachi during the pendamiic covid-19. So far, the nature of this study is causal and the quantitive in it'sapproach.A convenient sampling technique was used to collect the responses from 122 respondents determined through Gaaskin technique. Further, pre-designed adopted questionnaires have been used to collect the responses.Moreover, Stuctural Equation Modeling (SEM) has been used for data analyses.Thus the results of the study argued that students have faced technical problems. Administrative support in online education was also lacking.Students were facing problems in maintaining their privacy while studying online.These online education

hindrances inpublic sector colleges of Karachi produced unsatisfactory impression but a significant role of online education in students performance among the public sector colleges of Karachi. This study provides insights for the future research if the college education department remove the hurdeles would yield increase in student performance.

1.1. Introduction

Recently the world has witnessed a catastrophic phenomenon in the shape of pandemic Covid-19.Which is still ongoing and interrupted all the spheres of human life on the earth (Fernando, 2020).This phenomenonwas particularly proved to the fatal for the educational sector. The closure of educational institutions is the result of a lockdown.That has changedtheconventional educational system towardthealternate educational system around the globe (Myers, 2020).Hence the magnitude of severity has been increased when it came to countries like Pakistan.Specially the educational sector in Pakistan has been facing difficulties due to lack of resources and unpreparedness for this unprecedented situation to shift from conventional education to an online system (Tam & El-Azar, 2020). This rapid change in the educational system compelled for making the transition for online education in Pakistan.which has been encountered with many obstacles. Therefore the role of online education in students' performance has been hampered due to various factors such as lack of technical skills, administrative issues, and unavailability of infrastructure. So far this study attempts to analyze the role of online education in student performance and evaluate the influence of these factors.

1.2. Objective of study

Following are the objectives for the current study

1.2.1. To analyze the role of online education in student performanceamong the students of public sector colleges in Karachi.

1.2.2. To elaborate the effectiveness ofonline education's dimensions among the students of public sector colleges in Karachi.

1.3. Scope

The current study intends to determine the association between online education and student performance among the pupils studying in public sector colleges of Karachi. Moreover, this study insists on its focus on the role of online education in student's performance during the unprecedented pandemic scenario.

1.4. Significance

This study focused to evaluate the behavior of the pupils studying in public sector colleges and the prevailing notion hold in this unusual situation of covid19 about the online education system in the colleges.Additionally, this study has a value addition in the literature of educational development and student productivity.

1.5. Problem Statement

Education has maintained its indispensable role in the nation's uplift.this role of education attained a central position in policymaking at all levels.Recently the world has witnessed an unprecedented incident of pandemic covid19 that affected the educational structure catastrophically (Mailizar et al., 2020). Hence this event changed the conventional educational system and was prone towards an online educational system.This shift in the educational system posed a severe problem for students of the public sector due to unpreparedness at multiple fronts and affected student performance (Toquero, 2020).Therefor

this study intends to fill up the gap by analyzing the role of online education on student performance among the pupils of public sector colleges inKarachi.

2. Literature

2.1. The Phenomenon of COVID-19

An abrupt increase in pneumonia with no visible causes was recorded at the end of December 2019. Thereafter, an unprecedented disease, generally recognized as a coronavirus (COVID-19) rose with extraordinary rapidity (WHO, 2020b). Thereupon, the World Health Organization (WHO), discerning the seriousness of unusual conditions evolving from the outbreak of a coronavirus, declared a global health emergency on 30 January 2020 (WHO, 2020d). With the blink of an eye, the cases began to soar at an extremely rapid increase all over the world Consequentially, COVID-19 was announced formally as a "pandemic" by World HealthOrganization (WHO, 2020c) on 11 th March 2020. At the global level, the number of COVID-19 cases saw an unforeseen swell with the span of six months. As per World Health Organization,14,043,178 cases were reckoned till 19 July 2020 that spanned 216 countries with a heavy death toll of 597,583 (WHO, 2020a).

2.2. The State of COVID-19 in Pakistan

The Special Assistant to Prime Minister of Pakistan concerning Health announced the very initial two cases of COVID-19 on 26 February 2020. The first student, belonging to the University of Karachi Pakistan, was declared as the very first victim of COVID-19 residing in Pakistan and the second one was from Federal Urdu Univerity, Karachi, Pakistan. Subsequently, the three othecases of COVID-19 came to the surface. Thus, a tally of 1,179 cases was reckoned till 26th March 2020.Virtual learning has become a routine characteristic of the developed countries (Allen & Seaman,2014). Ready accesses to the provision of the internet and e-courses have achieved a milestone in the obtainment of higher education (Luyt, 2013). It is unfortunate to state that there is a dire need for access to the facility of internet and e- gadgets in Pakistan that has been aggravated due to the outbreak of COVID-19 in the whole world. Consequently, the education system went closed throughout Pakistan; and the notion of distance learning substituted a physical and formal education system. Inadequate types of equipment and basic skills impede the dispensation of online education in such abnormal conditions. To overcome the barriers facing e-education,many studies have been conducted in the past. Some of them have discovered general problems of the dearth of technology, and apt communication, time mismanagement, a scarcity of e-pedagogical skills, and a constant problem in the procedure of assessment and process (Mendes,Bastos, Amante, Aires & Cardoso, 2019; Blau, Shamir & Avdiel, 2020).The discontinuation of the obtainment of education is aimed at the containment of the spreadability of the transmittable virus of COVID-19; because it poses a possible danger to public health. To indemnify the loss for the stoppage of the learning process, UNESCO recommended e-education to be provided to the students who are supposed to be well-equipped with underlying tools (Crawford et al., 2020). Therefore, the Higher Education Commission (HEC) of Pakistan suggested the universities supply themselves with an efficient virtual management system so that the process of education could proceed unremittingly. Against it, the pedagogical and training modalities in Pakistan are still in a conservative phase concerning the edifice of higher education. Higher Education Commission is a rightful authority that grants accreditation to all programs which are operational in all Pakistan-based universities.

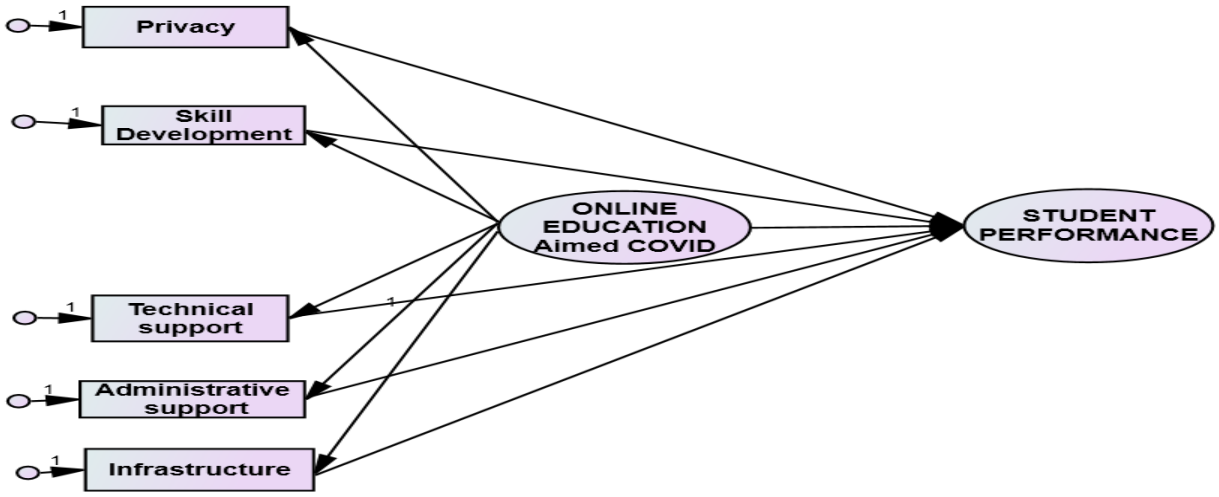
2.3. Online Education In Pakistan

Online education indicates a form of education that is described as an electronic (based on the

internet) way of instruction that makes sure delivery of e-education to the students who study at their home (Kentnor, 2015). Nevertheless, its definition has been evolving with time without any definite contours so far.According to McIsaac, Gunawardena, and Jonassen (1996), e-education does not imply an amalgamation of objectives and activities that fit a traditional classroom make-up rather is a thrust upon the ones who acquire an education; are assumed to be not physically present before an instructor. Notwithstanding, a well-organized system, consisting of modern pieces of technology in the shape of computers and the internet, is purported to proliferate knowledge allover the world that defies all physical barriers (Sun & Chen, 2016). Nonetheless, easy access tothe internet and online courses has gone a long way in continuing the dispensation of higher education (Luyt, 2013). In this current era of information and technology, exhibiting in the form of e-learning, the conventional notion of education has changed drastically. There is a duality of opportunities and challenges that face the institutions which are aimed at higher education as there has been a paradigm shift. Information, Communication, and Technology (ICT) are one of the challenging prospects. In the same way, the pupils come across so many problems of a similar tone and tenor, and others. Mismatched passwords, vision syndrome as a result of immoderate exposure to computers, pain in the back, fingers joint, and head, and breakdown of electricity are some of the repeating problems that encounter students frequently. Despite that, it is anticipated that the universities tend to adopt e-modes of instruction for some tenable reasons
(Hussain, 2007) .E-learning is assumed to be very much effective in those that countries are self-sufficient in digital resources (Basilaia& Kvavadze (2020). On the contrary, Pakistan is manually meeting all daily operations which range from the process of learning and teaching to the administration of academic institutions (Salam, Jianqiu, Pathan, & Lei, 2017).Lack of provision of prompt, inexpensive, and reliable internet impedes the free-flowing operation of virtual learning; especially the rural dwellers and marginalized sections of the population are great sufferers in Pakistan (Wains& Mahmood, 2008). Mostly, the students cannot avail of a large chunk of learning stuff through smart phones; because their smart phones are not e-content friendly, although the internet facility is accessible to them.The unexpected move to e-learning shows the adroitness of an organization in responding to unpredictable changes that take place around (Wu, 2020). A good many academic institutions have made big strides to digitalize the learning content; but not special e-modes of instruction; which has brought into the light paucity of resources in the institutions of education and a deplorable state of students for lack of adequate perspective to the internet and technology as they have affected the reaction of an organization and the position of students to partake in e-learning (Zhong, 2020).

A large portion of the research in Pakistan that addresses the challenges and prospects, has seen an average atmosphere (e.g., Ali & Ahmad, 2011; Yousuf, 2007) which has found that online learning is a discretionary mode to accelerate the learning and teaching process. Reciprocal technology is unavailable in many educational institutions nationally. Nevertheless, some previous studies in Pakistan have demonstrated the constructive outcomes of online learning. Ali and Ahmad (2011) appreciated the online- model of education which is consisted of zealous and skilled instructors and well-structured and up-to-the-mark material. However, the present atmosphere is opposed to usual e-education strategies which call for e-learning managerial and methodological techniques in the educational institutions of Pakistan without consideration to the scarcity of resources and funds.

Figure 1: CONCEPTUAL MODEL



2.4 Hypotheses

H_0: There is no relationship between online education and Student performance among the students of public sector colleges in Karachi.

H_1: There is a significant relationship between online education and Student performance among the students of public sector colleges in Karachi.

3. Methodology

3.1 Nature and Type of Research

This study attempts to analyze the role of online education in students' performance in the wake of the pandemic through cause and effect relation. Hence the current research is causal. Therefore, the quantitive research approach has been applied for the study to evaluate the causal relationship between the constructs of the study.

3.2 Population and Respondents of the Study

This research has been conducted forPublic sector colleges inKarachi. That consistsof 66 boys and 65 girls colleges (DGC Sindh 2021). Therefore all the students studying in these colleges constitute the population for the current study. However, due to prevailing circumstances of educational policy 50% attendance and closure of institutions impose constrain in data collection.Hence the population frame was not available.

3.3 Sampling Technique, Sample size,and Data Collection

Since the population frame was not available.Thereforesample size of 122 has been determined through **50 + 8 *X (**Gaskin, 2021). Where X denotes the number of variables
50 + 8*9 = 122. Furthermore, a non-probability convenient sampling technique was used to collect the responses through a pre-designed adopted questionnaire.

3.4 Instrument

Following the pre-designed five-point Likert scale questioners have been adopted for gathering the responses from the respondents

3.4.1.1 Administrative Support: 4 itemed questionnaire (Muilenburg&Berge, 2005)

3.4.1.2 Privacy: 4 item questionnaire (Alshehri& Lally,2019)

3.4.1.3 Skill Development : 4 itemed questionnaier (Muilenburg &Berge ,2005)

3.4.1.4 Technical Support : 3 itemed (Muilenburg &Berge ,2005)

3.4.1.5 Infrastructure : 4 (Fetzner, 2003)

3.4.1.6 Student Performance: Modified 14 item questionnaire was adopted to gauge the responses (Bernard et al., 2004)

4 Results

4.1 Reliability Test

Cronbach's alpha reliability test has been run for the current study to check the item's internal consistency .whereas the standard threshold is 0.6 to 1.0 & if >.9 excellent (Hair et al., 2003)for measuring Cronbach's alpha with actual outcomes.following is the table that consists of reliability for each of the study variables. All the results have been near 1.0 that is considered a good score for the variable to be reliable.

Table 1: Reliability

S #	Variables	Cronbach's alphas
1	Privacy	.78
2	Skill Development	.81
3	Technical Support	.65
4	Administrative Support	.68
5	Infrastructure	.92
6	Satisfaction	.73
7	Course Completion	.76
8	Assessment	.87
9	Practicle/Assignment	.63

Table 2: Convergent and Discriminant Validity

S #	Constructs	CR	AVE	MSV
1	Privacy	0.822	0.579	0.363
2	Skill Development	0.728	0.614	0.429
3	Technical Support	0.793	0.831	0.712
4	Administrative Support	0.804	0.742	0.689
5	Infrastructure	0.748	0.513	0.276
6	Satisfaction	0.776	0.678	0.352
7	Course Completion	0.861	0.841	0.642
8	Assessment	0.768	0.593	0.421
9	Practicle/Assignment	0.926	0.793	0.523

Above the table displayes the statistics of validation for the dimensions of current study. Validation for the diemensions has been done via composite reliability (CR) ,Average

variance extract (AVE) and Maximum shared variance (MSV) compared on standard threshhold of (CR >0.7), (AVE >0.5). (MSV) < AVE)(Malhotra & Dash, 2011) .Therefor, Privacy being the dimension of Online Education shares CR= .822, AVE= .579 and MSV= .363 . Skill Development being the dimension of Online Education shares CR= .728, AVE= .614 and MSV= .429. Technical Support being the dimension of Online Education shares CR= .793, AVE= .831 and MSV= .712. Administrative Support being the dimension of Online Education shares CR= .804, AVE= . 742 and MSV= .689. Infrastructure being the last dimension of Online Education for this study shares CR= .748, AVE= .513 and MSV= .276. Satisfaction being the dimension of Student Performance shares CR= .776, AVE= .678 and MSV= .352. Course Completion being the dimension of Student Performance shares CR= .861, AVE= .841 and MSV= .642. Assessment being the dimension of Student Performance shares CR= .768, AVE= .593 and MSV= .421. Practicle/Assignment being the dimension of Student Performance shares CR= .926, AVE= .793 and MSV= .523.These results are in line with the standard scores as provided for the approval of results. Hence based on these results the construct validity has been approved.

4.2 Data Analysis

The current study used a convenient sampling technique for the collection of data from a defined sample size of 122 for this study.Therefore, the pupils of public sector colleges in Karachi have been traced out from these colleges to get the questionnaireto be filled. Hence below table conducive presents the respondent's descriptive statistics.

Table 3: Descriptive Statistics

S #	Education Level	Sample %	N
1	Intermediate	80	98
2	Graduation	15	18
3	Masters	05	06
Total		100	122
S #	**Gender**	**Sample %**	**N**
1	Male	62	76
2	Female	38	46
Total		100	122
S #	**Age**	**Sample %**	**N**
1	17—21	82	100
2	21>	18	22
Total		100	122

The above descriptive statistics table determined the education, age, and gender of respondents for this study. In which 80% intermediate, 15% graduate, and 5% masters level participants. Moreover, 62% of the respondents were male,and 38% were female respondents.Whereas,the age group of the respondents was 17—21 and 21>and their mean was82% and 18% respectively.

4.3 Regression Analysis

A regression test was applied for the current study to evaluate the relationship between the constructs ofinterest. The basic motive of conducting regression analysis for the current study was to determine the association among the variables of interest in a statical equation form.hence the standard threshold of the variable relationship is 0.00 to 0.19

Table 4: Summary of Model

Model	R	R Square	Adj:R Square	Std. Error of the Estimate
1	.618[a]	.401	.391	.32520

Predictors: (Constant), Online Education
Above the model, Summary shows the coefficient of determination.where the Adj: R square is 93.1 % explains the variance in students performance

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	9.966	2	4.983	49.66	.000[b]
	Residual	14.714	131	.112		
	Total	24.68	133			

a. Dependent Variable: Student Performance. (b). Predictors: (Constant), Online Education

Above the ANOVA table includes the ratio for F is (3282)= 49.66 & p <.0005 which is good enough to consider the overall fitness of this regression model. Hence the model is fit for the current study.

Table 6: Regression Analysis of Online Education and Student Performance

Model		Coefficients			t	Sig
		Unstandardized		Standardized		
		B	Std. Error	Beta		
1	(Constant)	7.964	.931		8.430	000
	Online Education	-1.431	.139	-.619	-9.538	000
Dependent variable: Student Performance	**R square**	**F Statistics**		**P-Value**		
	.401	49.66		<.0001		

The above table of regression analysis depicts the results for the predictor variable Online educationand the dependent variable Student Performance.Further, the statics for Online education is (β= -1.431, p=.000) which is asignificant and negative coefficient. In simplewords, the increases in the use of online education in the current settings will decrease student performance holding the rest of the variables constant.Therefore the null hypothesis has been failed to retain andon the contrary, the H_1 hypothesis has been retained as online education and student performance share a significant relationship.

5 Conclusion

The conventional education system is largely affected by this prevailing pandemic across the globe.Thereforeeducational institutions opted for online education as the alternative viable way of imparting education.But this way of imparting education in Pakistan and alike countries couldnot elicit results as desired. As the results of this study also determined that a large number of students didnot have internet accessibility due to the unavailability of technical.The current study has unleashed the relationship between the role of online education and students' performance in the context of pandemic covid 19 among the students of public sector colleges in Karachi.Since this study argued that students have faced technical problems while accessing online education.Further it has been witnessed that administrative support in online education was lacking. Which posed serious difficulties for the students to retrieve online education.This study also explained that students were facing problems in maintaining their privacy while studying online. Being the developing country infrastructure for imparting online education was also one of the hindrances for the students to achieve desired goals. These online education hindrances inpublic sector colleges of Karachi produced unsatisfaction, waving of assessment or examination, unfull fullness of syllabus for the students and as a whole a negative impression but a significant role of online education in students performance among the public sector colleges of Karachi.This significant relation between online education and student performance would yield required positive results if the college education departmentauthoritiesremove the hindrances in online education.

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