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Impacts of Technology on The Performance of Students at College Level in Sindh

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Chronicle**Abstract****Article history****Received:** July 14, 2025**Received in the revised format:** July 30, 2025**Accepted:** Aug 24, 2025**Available online:** Sept 22, 2025**Aijaz Ali Soomro** is currently affiliated with the College Education Department Government of Sindh, Pakistan.**Email:** aijazas2020@gmail.com**Saba Qasim & Qurra Tul Ain** are affiliated with the Department of Management Sciences, University of South Asia, Lahore.**Email:** drsabamarij@gmail.com**Email:** qurra.tul.ain@usa.edu.pk

To meet the challenges in the educational field it is inevitable for all associated persons of education, either they can be students or educationist without any unfamiliarity of technology relevant with the education, they cannot compete with the other nations in the modern age. In the most recent time there is growing use of artificial intelligence with the help of various apps in everyday life including for teaching and learning. Despite of all such type of technological revolution, there is lack of provision for all learners in the Sindh to fulfill the educational needs with these facilities. For the quality education, there is great role of Technology. The outdated method of teaching and learning make the students boring and difficult to achieve the objectives of education. Target population is based on the District Badin and Sample size is 160 teachers from the Government Degree Colleges (Boys and Girls). The study was carried out by the quantitative method consists of closed ended questionnaire. Present study analysed the relationship between predictor and outcome variables, the use of technology and the students' performance. The data was analysed by the multiple regression and correlation. The analyses revealed, there is the relationship between the academic performance of students and independent variables, difficulty facing by students while use of technology, lack of facilities, health and no proper training of use of technology.

Corresponding author***Keywords:** Technology, Regression, Facility, Poverty

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INTRODUCTION

There is rapid technological advancement all over the world causing the change in every sector of life. To meet the challenges in the educational field it is inevitable for all associated persons of education, either they can be students or educationist without any unfamiliarity of technology relevant with the education, they cannot compete with the other nations in the modern age. Now a day there is growing various types of gadgets are used such as the smart boards, smart mobile phones, and tablets. Including these material things various platforms are used for teaching and learning such as online learning being stay at the remote area students and teachers can communicate and share the knowledge concerned with their respective fields easily and in cheap expenses at the door step. In the most recent time there is growing use of artificial intelligence with the help of various apps in everyday life including for teaching and learning. Despite of all such type of technological revolution, there is lack of provision for all learners in the Sindh to fulfill the educational needs with these facilities. There are many factors are belong this condition in which there is financial constraints and lack of interest and policy formation in this regard. Where there is such type of facilities available, students get the knowledge. Due to the poverty, all the students cannot afford the expensive equipments and the lack of resources the college management regret for the provision of such type of facilities. The adaptation of modern technology makes the

great difference for the improvement in the quality of education at the college level. For this changing trend of teaching and learning, all the stake holders will have to look forward seriously for getting the benefits and meet the challenges at the global level for the prosperity and development of nation and country. Without any adaptation of this leave the gap in Education and it cannot be covered in the decades.

In this technological age, the digital literacy is favored everywhere. Without the familiarity of technology, people are considered backward. Not only in the STEM but in the social science fields, the technology has great role. The provision of technological resources can be fruitful at every level of education. To meet the challenges and compete with the global nations and pacing in every field, there is no room to escape from the use of technology in education. Due to the maturity of students at college level, they can use technology in proper way and get positives results in terms of curriculum objectives.

LITERATURE REVIEW

According to researcher, the interconnection of technology in terms of education has highly significance to bring the improvement in the educational process. To cover the conventional methods of teaching, there must be look into the with technology. The researcher further added, there must be surety of privacy and security concerns of the students. It is crucial to remain familiar with the changing trends within the technology for learning which provide the opportunities. The concerned persons must work jointly. For the success in the modern age, technology strengthen the teachers for the thriving of students achievement (Minda Jiang, 2023). -As researcher described, the integration of technology is more resulting than the conventional methods of teaching. There was difference between two groups (control and experimental) in connection with the learning performance in mathematics. In this, the results after the test and re test by applying the conventional and technological method of learning (Rizada & Rey, 2023). Researcher found, the social media is integrated with the students. This interconnection leaves the negative impacts on their academic achievements. All types of digital technologies have both negative and positive impacts (Talaue et al, 2018).

Researcher suggested, all the digital gadgets associated technologies crucially increased the level of both negative and positive aspects on the youngsters. Social media is not only the platform of communication but also should be for the academic achievement (Talaue et al, 2018). Researcher revealed, by using the application of social media associated with the learning can be beneficial to students for academic achievements (Shuaibu, H, 2020). Researcher revealed, the application of technology have great role for the academic achievement of students of secondary school and agreed by the parents on this notion. It is fundamentally the age plays role for the influence of technology in terms of performance. The teachers can manage the environment of education for desired results. By adaptation of technology, will affirm the standardization of teaching (Emeri, P. N, 2022). According to the researcher, there is fundamental for the teachers who are well awared about the technological negative impacts and the positive aspects make the difference in the students' performance. The teachers described that the great issue is associated with the engagement of technology at home whereas the training of teachers in terms of technological can minimize the negative impacts of technology. (Lawrence, 2022). The researcher concluded that students are ambitious and able to go through the technology in compare with the previous generations. Thriving in the use of technology made the ways regarding integration with education (Burkhart, 2011). As

described researcher, the skills in the digital world are understood crucial and this is necessary for the learners in their fields (Holm, 2024). Researcher found, the students of 11th grade due to the age can get maximum benefit by the technology more than the conventional classroom teaching (Weathersbee, 2008). Researcher suggested,

The students with poor and less privileged areas can be deprived from the use of technology and it can make a gap between the rural and urban regions (Owoseje, 2023). The researcher found that the integration of technology improves the teaching style (Akintayo, 2024). Researcher concluded that the technology has both merits and demerits. Teachers and learners should avoid from negative impacts which refrain them from the goals (Raja & Nagasubramani, 2018). Researcher revealed, most students who agreed with use of the technology are with the academic success (Ryan, R, 2022). For the quality education, there is great role of Technology. There is a lot of benefits of technology for the positive results. All the world enjoys the technology in the educational process and get the fruitful results. Still there is lack of technological use at the college level and there are many barriers for adaptation of this method of teaching and learning in the scenario of colleges in Sindh such is lack of familiarity of technology, financial issues and lack of interest and priority of stake holders.

SIGNIFICANCE OF THE STUDY

For the quality education, there is great role of Technology. There is a lot of benefits of technology for the quality enhancement of education. Due to the diversified methods of teaching and leaning at various colleges make the discrimination among the students. The outdated method of teaching and learning make the students boring and difficult to achieve the objectives of education.

METHODOLOGY

The study was carried out by the quantitative method consists of closed ended questionnaire. Present study analysed the relationship between predictor and outcome variables, the use of technology and the students' performance. The data was implied on 5 point likert scale, SD=Strongly Disagree, D=Disagree, U=Undecided, A=Agree, SA=Strongly Agree, and 1)Almost 2) Often 3) Somewhat 4) Rare 5) Never. The data was analysed by the multiple regression and correlation. The reliability of 19 items, Cronbach's Alpha is .955.

Population and Sample of study

The target population is from Government Degree Colleges both boys and girls for all subjects the, District Badin Tando Muhammad Khan.

Table 1.

Colleges		Population (Teachers)		Sample Size (Teachers)	
Boys	Girls	Male	Female	Male	Female
06	03	142	65	104	56
Total : 06		Total : 207		Total :160	

Objectives

- To evaluate the performance of students in terms of adaptation of technology.
- To analyse the facilities for use of technology for the students.
- To find the issues in terms of use of technology.

- To provide the suggestions for the adaptation of technology.

Hypothesis

- H₀: There is no satisfactorily performance of students without use of technology
- H₀: There is no facilities for use of technology for the students
- H₀: There is no issue for use of technology

S.No.	Variables
1	Students learning progress affected by the technology
2	Students use the technology during learning.
3	Students face the difficulty without use of technology.
4	Students use IT related technology.
5	Students use without internet technology
6	Students face the difficulty for use of technology due to poverty
7	Students face the difficulty for use of technology due to unavailability of resources at institute level
8	There is difference between academic performance of students of using and not using technology
9	There is positive results of students who uses technology in terms of academic learning
10	There is negative impacts of use of technology on the students
11	There are trained teachers in terms of technology use in the education.
12	There is need of training of use of technology among the students in terms of academic performance
13	There is need of use of technology among the students in terms of academic performance
14	There are facilities of technology for the academic activity at institute level
15	There is essential need of proper training of teachers in terms of integration of technology with education
16	There is privacy issue while using the technology in education
17	There is issue of un equality of use of technology for every
18	There is un affordable cost of use of technology
19	There are health issues by use of technology

RESULTS AND DISCUSSION

Table 2.
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	357.006	18	19.834	3637.922	.000 ^b
	Residual	.769	141	.005		
	Total	357.775	159			

Table 3.
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.999 ^a	.998	.998	.07384	.998	3637.922

Table 4.
Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
				Beta	

(Constant)									
VAR00002									
VAR00003									
VAR00004									
VAR00005									
VAR00006									
VAR00007									
VAR00008									
VAR00009									
VAR00010									
VAR00011									
VAR00012									
VAR00013									
VAR00014									
VAR00015									
VAR00016									
VAR00017									
VAR00018									
VAR00019									

Table 5. Coefficients^a

Model	95.0% Confidence Interval for B		Correlations			Collinearity Statistics Tolerance
	Lower Bound	Upper Bound	Zero-order	Partial	Part	
(Constant)						
VAR00002						
VAR00003						
VAR00004						
VAR00005						
VAR00006						
VAR00007						
VAR00008						
VAR00009						
1 VAR00010						
VAR00011						
VAR00012						
VAR00013						
VAR00014						
VAR00015						
VAR00016						
VAR00017						
VAR00018						
VAR00019						

Mostly the respondents agreed about all variables except the use of technology without internet, trained teachers for use of technology and availability of facilities in terms of technology. In the ANOVA table: the F-test (F-3637.922) shows that the p-value 0.000 is less than the significance value 5% then the null hypothesis is rejected and regression model is statistically significant. In the Model Summary table, the R² is 0.996 (99.8%), this is good regarding the predictor variables students learn by conventional method, use of technology, face the difficulty without technology, use IT related technology, poverty, difference between academic performance, positive results of students for technology, negative impacts of technology, need of technology among the students, use of technology without internet, trained teachers for use of technology and availability of facilities in terms of technology. In the coefficient table, the independent variables are statistically significant by comparing with the P-value<0.05 and B value except variables about use the technology during

learning, use IT related technology, difficulty for use of technology due to unavailability of resources, trained teachers in terms of technology use, training of use of technology among the students, need of use of technology among the students, and essential need of proper training of teachers in terms of integration of technology which are not significant.

There is positive relationship between the dependent variable with independent variables. The value of coefficient (r) of correlation between the dependent and independent variables is between 1 and -1. There is strong relationship between of academic performance and the variables use the technology during learning, face the difficulty for use of technology due to poverty, face the difficulty for use of technology due to unavailability of resources, difference between academic performance of students of using and not using technology, positive results of students who uses technology, need of training of use of technology among the students, facilities of technology for the academic activity, essential need of proper training of teachers in terms of integration of technology with education, privacy issue while using the technology, issue of un equality of use of technology for every student, un affordable cost of use of technology, health issues by use of technology. According to the analysis the factors associated with the academic performance of students in terms of technology are face the difficulty without use of technology, Students use without internet technology, face the difficulty for use of technology due to poverty, difference between academic performance of students of using and not using technology, positive results of students who uses technology, negative impacts of use of technology on the students, facilities of technology for the academic activity, privacy issue while using the technology in education, issue of un equality of use of technology for every student, un affordable cost of use of technology and health issues by use of technology.

FINDINGS

The present study found that the aspects which are associated with the performance of students in terms of use of technology are difficulty facing by the students, technology without internet, poverty issue, and lack of facilities for the technology. This study further revealed that there are positive impacts on the academic performance of students along with some negative and health issues. This research further found that that there is difference between academic performance of student's engagement and deprived from the technology.

CONCLUSION AND RECOMMENDATION

The lack of facilities, poverty issue is the main causes of academic performance of students at college level. In the light of findings, this study suggests, there should be facilitated the students with the digital technology and educated them properly for the academic achievements and to complete the academic objectives.

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Consent for publication and Ethical approval: Because this study does not include human or animal data, ethical approval is not required for publication. All authors have given their consent.

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