



Contribution of Latest Technology in Higher Education in Pakistan

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Abstract

The prime objective of present survey research was to access and evaluate the present status of technological use by students in educational institutions. This study was focus link between technology and education. Importance of technology, its value and current situation of education systems also focused on this research. This research study was quantitative in nature. The assessment survey conducted upon 159 university students. Information collection instrument was questionnaire. The survey conducted through an adopted questionnaire. 14 evaluation statements used to conduct this survey. All statements based on five-point Likert scale. The validity and reliability of questionnaire statements were tested and assure by a reliability analysis test, Cronbach alpha. Statistical analysis applied through SPSS. Univariate analysis applied to get the descriptive results and bivariate analysis applied to examine the correlational variables, their influence upon each other, and relationship strength. The collected information results indicate that technology has become central point in educational learning. It has made easy to get education rapidly. All the digital instruments, websites, applications, and other resources helps students to learn quick and improve their educational skills by updated and latest knowledge. Digital instruments not only beneficial for students but also professors to teach in an advance efficient way.

Keywords: Technology, Higher education, Educational learning, e-textbooks, Skills.

Introduction

Technology is playing a prominent role in every walk of life. In higher education, technology has become key requirement. There are many instruments and methods that can develop and update the technological and educational skills of students and teachers. Use of technology as computers, internet, laptops, tablets, smart phones, and other digital devices increase learning in classrooms (Marina, 2021). Technology is mandatory for all levels of education and all kinds of educational learning either its face-to face learning or e-learning. It is a source of advance learning and quality education. The use of instruments of technology in higher education is based on several decades in history (Lazar, 2020).

The top contribution of technology in education sector is knowledge enhancement (Yousaf et al., 2019). Higher education institutions using technology by providing online attendance system, online admission, tests, and examinations. All these advance technology facilities developing students' technological skills (Raja, 2018). The use of newly launched technologies in education institutions changed the overall performance of both teachers and



students (Irum, 2020). Online assessment tools improve skills and enhance performance by exposure (Ackermans et al., 2021).

The growing trend of technology in developing countries is comparatively slow than developed countries because of many issues regarding launch to implementation of technology in education setup of these countries. Awareness, socioeconomic condition, improper resources, and low investment in information technology and in research sector (Irum, 2020).

Objectives

- To analyze the contribution of technology in educational learning process
- To determine the level of technological awareness factor with educational learning among students
- To examine the correlational relation between technology and educational learning process

Review of Literature

Aldahdouh et al., (2020) examined the use of technology in higher education at Tampere University, Finland. The research study explored popular sources of technology use among teachers. The researchers found that majority of teachers using technology for their own improvement and for enhancing class performance. Technology sources were social media, smart phones, and cloud services like google, MS Office 365 and some other applications.

Santosa (2019) surveyed in higher education intuitions and concluded that online education totally changed traditional education styles. It introduced as modern academics that totally changed traditional academics. According to results, online education trend brought massive transformation in higher education level. Communication patterns to learning to evaluation, every pattern is a part of modern academic.

Koe and Bakir (2010) concluded in their research that some conditions are necessary for effective technological use. According to the results those factors are proper planning, goals, need assessment, requirements, and economic condition.

Mou (2016) uncovered developing countries situation regarding technology use among teachers and students. Results described that in such countries there are many sorts of obstacles that both groups' teachers and students faced, to get access to technology for their teaching and learning goals.

Azma (2011) studied technology influence in higher education. Results concluded that higher education institutions using technology sources for their benefits and also improving quality of education by affective implementation in their institutions. In higher education sector, technology is a mega source for quality learning. Technology has made easier to get knowledge and low-cost learning.

Marinagia (2013) conducted research on higher education sectors to find out impact of technology. Research study explored that technology is a basic unit for learning now a days. Students' performance can be enhanced if there would launch a system in higher education sectors to provide lectures online after class timings. There should be a computer-



based assistant that uploads lectures on website for students learning.

Yusuf (2010) investigated the use of technology by students in the classrooms for learning. Research results revealed that technology adaptation enhances students' learning as it helps to clear concepts and makes the learning environment more attractive. It is also noticed that technology sources are a great way to learn anytime anywhere. It opens various learning opportunities for students in classrooms and also at home, increases motivation and develops learning interest.

Wiliyanto Santoso (2017) researched on big data collection in universities and higher education sectors. Concluded results present the accuracy and capacity difference between traditional and modern administrative technological systems.

Simpsona (2014) studied digital literacy in higher education. The research study reveals that digital literacy has introduced new academic norms and those are beneficial for providing solutions to different academic matters.

Rogers (2000) conducted research study on universities to find the link between technology and education. The results indicated that there is an urgency to combine education systems with new technologies. If this would not happen, universities will not maintain their competency standard and academic matters. There is a need of time to adopt digital transformation to meet the world's standards and face challenges competently.

Research Methodology

This research work is survey research and an explanatory study. The research area for this survey was private universities of Lahore. Probability sampling techniques were used to get the information. Sampling design was based on two stages. At the first stage, universities were selected through simple random sampling and then target respondents by multi-stage sampling technique. The respondents were students of undergraduate and post-graduate programs. The sample size was calculated through Taro Yamane formula, online calculator.

The assessment survey was conducted upon 159 university students from private sector universities. Information was taken only from those students who agreed to participate in the current research study. Information collection instrument was questionnaire. The research survey was conducted through an adopted questionnaire. 14 evaluation statements were used to conduct this survey. All statements were based on five-point Likert-scales to get accountable responses. The validity and reliability of questionnaire statements were tested and assured by a reliability analysis test, Cronbach alpha.

The reliability of technology awareness scale was 0.953 and education scale was 0.949. After reliability analysis, questionnaire was used to get responses from sample of target population. Statistical analysis was applied through SPSS. Univariate analysis was applied to get the descriptive results and bivariate analysis was applied to examine the correlational variables, their influence upon each other, and relationship strength.

Data Analysis

Table No. 1 Descriptive Statistical Analysis



Statements	Strongly Agree		Agree		Neutral/ No Opinion		Disagree		Strongly Disagree	
	(f)	%	(f)	%	(f)	%	(f)	%	(f)	%
I'm most familiar with laptop or computer	104	65.8	37	23.4	9	5.7	4	2.5	4	2.5
I'm most familiar with software like IBM SPSS software	69	43.7	42	26.6	20	12.7	18	11.4	9	5.7
I'm most familiar with e-textbooks	79	50.0	55	34.8	13	8.2	7	4.4	4	2.5
I'm most familiar with audio and video technology equipment	77	48.7	48	30.4	14	8.9	13	8.2	6	3.8
I'm most familiar with internet of things (cloud-based services tools like Google Drive, Docs, and Earth)	83	52.5	49	31.0	12	7.6	11	7.0	3	1.9
I'm most familiar with digital projectors	79	50.0	51	32.3	13	8.2	8	5.1	7	4.4
I'm most familiar with digital interactive exercises, games, and presentations	79	50.0	54	34.2	8	5.1	10	6.3	7	4.4
Technological instruments use can improve my knowledge exchange	82	51.9	56	35.4	9	5.7	7	4.4	4	2.7
Use of technological instruments would able me to complete homework more quickly	77	48.7	52	32.9	16	10.1	5	3.2	8	5.1
Technological instruments can increase my learning efficiency	90	57.0	46	29.1	9	5.7	6	3.8	7	4.4
I found technological instruments easy to use from anywhere	86	54.4	49	31.0	8	5.1	8	5.1	7	4.4
Technological instruments can increase my learning performance	87	55.1	52	32.9	10	6.3	5	3.2	4	2.7
Using any technological instrument is logical and clear	87	55.1	49	31.0	8	5.1	11	7.0	3	1.9
Technological instruments enhance self-education	88	55.7	54	34.2	6	3.8	6	3.8	4	2.5

Table No. 2: Pearson Correlation Analysis

Pearson Correlation Analysis			
		Technology Awareness	Educational learning with Technology
Technology Awareness	Pearson Correlation	1	.924 ^{**}
	Sig. (2-tailed)		.000
	N	158	158
Educational Learning with Technology	Pearson Correlation	.924 ^{**}	1
	Sig. (2-tailed)	.000	
	N	158	158

**. Correlation is significant at the 0.01 level (2-tailed).

Inferential bivariate analysis, Pearson correlation results in table no 2, reveals that significant value is 0.00 that is less than alpha level known as default value of 0.01. According to these results, it has proved that awareness about technology is linked with educational learning through use of technology. Hence there is a strong bond exists between both analyzed variables. It is quite logical that awareness is a basic requirement to adopt anything. In this case educational learning depends on the awareness about the technological products.

Hence, there is logical association between technological awareness and educational learning with technology equipment's and statistically it proved by results presented in above analysis table which shows Pearson coefficient value that is 0.924. The positive coefficient value reveals positive association between both tested variables.

Table No 3: Linear Regression Analysis

Linear Regression Analysis				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921 ^a	.854	.853	2.36817

a. Predictors: (Constant), Technology Awareness

Statistical bivariate test, Linear regression analysis is based on three parts in which each table provide different information about the tested data. The first table of R values, regression analysis results in table no. 3, quantifies and verify the tested variables strength and worth with each other. The above table presents the R-square value 0.921 which indicates the total variance or change caused by independent variable on dependent variable that is 92.1%.

According to the conclusion by analysis it is evident that technology awareness 92.1% impact on educational learning through technology. Hence, its concluded that, it is compulsory to have a clear knowledge about technology equipment's to use that technology in educational learning goals.

Table No. 4: AVONA results table of Regression Analysis

ANOVA ^a						
Model		Sum of Square	df	Mean Square	F	Sig.
1	Regression	5134.712	1	5134.712	915.568	.000 ^b
	Residual	874.883	156	5.608		
	Total	6009.595	157			
a. Dependent Variable: Educational Learning with Technology						
b. Predictors: (Constant), Technology Awareness						

In table no 4, Linear Regression Analysis table ANOVA shows bivariate results of tested independent and dependent variables. According to the results there is a significant relationship exists between technology awareness and educational learning through technology, as significant value 0.00 is less than the default value that is 0.05. Hence this analysis proved relationship bond between analyzed variables.

Table No. 5: Coefficient Table of Linear Regression Analysis

Coefficients ^a						
Model		Unstandardize d Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.451	.424		1.063	.001
	Technology Awareness	.912	.030	.921	30.258	.000
a. Dependent Variable: Educational Learning with Technology						

The third linear regression part known as coefficients results mentioned in above table no 5 which indicated the consistency of change through beta values. As per the rules if one beta unit change will occur in a variable the other variable also changes by one beta unit. In this result variable shows 0.921 beta Units. When technology awareness increases by one unit educational learning also increases same. Secondly positive and negative results decide the positivity or negativity of results. According to present results, beta value is positive which means there is positive relationship between tested variables.

Conclusion

The collected information results indicate that technology has become central point in



educational learning. It has made easy to get education rapidly. All the digital instruments, websites, applications, and other resources helps students to learn quick and improve their educational skills by updated and latest knowledge. Use of technology has made many advance changes in academic system. This research study examined the correlation between technology awareness of students and their educational learning. Results revealed there is strong correlation between both variables and awareness play a vital role in learning through advance technologies. Technology awareness has a strong positive impact over educational learning at higher education. Technological instruments not only beneficial for students but also professors to teach in an advance efficient way.

Suggestions

To latest adaption of technology, right use of technology, improve higher education institutions regarding technology, enhance both teachers and students learning, and for effective latest learningsome suggestions based on current research study results.

- There is a need to use latest technology in classrooms learning in higher education institutions than only for administrative tasks. It will enhance performance of teachers and students.
- Time to time proper training sessions necessary to train both teachers and students to take advantage of technology in learning process. Training sessions will make them skillful enough to use latest technology properly
- There should be a check system from institutions to track students' technology activities so that teachers interrupt on time
- Institutional administration must include teachers in decision making process when adopting or introducing new technologies for knowledge enhancement of students in their institutions.

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