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IMPLEMENTING E- LEARNING PRACTICES AND INTEGRATION OF TECHNOLOGY AT HIGHER EDUCATION LEVEL IN PAKISTAN: PROBLEMS AND POTENTIALS

By

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Abstract

E-learning is a developed and modern form of classroom instructions based educations in which students and teachers interact with one another through the most advance technology based visual instruments. In this context, e-learning is quite different from traditional way of learning and partially from online or distance learning. The purpose of this study was to examine the perceptions of students and find out the problems and potentials regarding Implementation of E-Learning Practices and Integration of Communication and Technology at Higher Education level in Pakistan. Most relevant and latest theory of connectivism was applied in this study. The researcher adopted mixed methodology and qualitative and quantitative data was collected through multi stage sampling technique. Total population of the selected public and private universities from five divisions of Punjab-Pakistan were fifty nine thousand one hundred and five (59105) students. In order to get the exact sample size for this study, three hundred and ninety seven (397) students were selected through stratified sampling technique. After data collection, the Quantitative and Qualitative Data Analysis were done through SPSS v.20 and Nvivo v.10 respectively. Findings of this study show that the private universities' students are comparatively at better level of perception regarding e-learning practices and its potentials than public universities. Findings of the qualitative analysis revealed that the students of both public and private universities consider the lack of resources, communication gap and technical skills as major issues towards implementing e-learning practices. Further, the findings of this research also highlights a great potential of e-learning practices, if adopted, at higher education level for enhancing critical thinking, positive perception, technical skills, less time consuming, cost reducing, result-orienting and innovative learning to compete the international universities in quality education. The researcher recommends for providing e-learning resources, technical training as well as better communication skills among students and teachers through technology integration in classrooms to remove perceptional, conceptual and practical flaws towards e-learning practices at higher education level in Pakistan.

Keywords: *Integration of Technology, E-learning, Classroom Instructions, Practices, Technology Education*

Introduction

As technology grows, there are many ways that it can be applied to different things. Education is no different. There are many technological advances that have changed the

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world of education in the 21st century. Knowing about these advancements and the impact they have on education around the world will show just how essential technology is for education. These different technology uses in the class room have a vast impact on the overall education of students around the world. Bıcak (2019) stated that in this globalized world, information technology has positive impact on the development of society by the production of new technologies. Today, the emerging societies are just based on science and technology. Due to the development in recent years, there have been seen reforms in education and instructional technology became the part of modern education.

Additionally, with the continued development of societal demand and the continued improvement of educational technology, educational institutions need to succeed their students and find solutions to the problems they face (Schols & Bottema, 2014). There are many types of technologies from simple to complex and are used for different purposes in our learning environment. Over time, science and technology have evolved, such as projectors, visual equipment, smart devices, computers, as well as the latest technical devices, especially smart boards, to make the learning process more efficient (Raby & Meunier, 2011).

For this reason, students at higher education level promote their knowledge through self-learning. The students of today are blessed with the facilities that are provided to them by technology. Technology opens new prospects for traditional education. It also expands learning experiences outside the classroom (Nasir, 2017). Another concept generated among learners since last 2-dcades which is well known as “e-learning”(Laurillard, 2013).Students usually use various kinds of technologies in their learning process through e- learning approach. E-learning has played a key role and introduced new ideas in learning and teaching process (Altameem, 2013).

Essentially, the latest trend in higher education is a new e-learning platform which enabled students to access various learning content through the electronic ways. The main drivers of this trend are changing teaching conditions, the demographic development of the students and technological innovations (Shivetts, 2011).Education structure around the world is integrating information and communication technologies to improve the student's learning experience. It was important to explore the positive contribution of e-learning in education. Indeed, e-learning is the learning that a person gets through the use of electronic media with the use of internet. In E-learning learner learns on his own pace according to his interest

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(Susanti & Ayuni, 2018).Hence, Surry and Stanfield (2017) found that the technology based instructional education may have many barriers, for example, students' competence, infrastructure of technology, satisfaction and motivation of instructors. As an effective as the technology is, it makes little sense if it is not used properly. Many universities are failed due to high costs, poor strategies, intense competition, poor academic performance, and resistance to change.

In general, Pakistan is facing the challenge of e-learning integration because of the low literacy rate and little investment on education by government. So, Tusubira et al., (2013) explained that investment in infrastructure, content development and training of IT staff members are up to the mark to implement successfully of e-learning. Student frustration with using e-learning is often because of late feedback. More investigation is required to examine the students' opinions and preferences regarding e-learning. In order to be able to use e-learning based education, reasonable facilities must be available in the organization. Gulati (2013) described that the insufficient resources are major issues with using e-learning. Compared to developed countries, developing countries spend more on higher education. Despite of this, developing countries spend fewer resources on per student as compared to developed countries. Furthermore, Farid et al., (2018) concluded that universities around all over the world integrating ICT in education to enhance learning experience of students (Joshi & Vaidya, 2013). Higher education facilities are increasing for uplifting the socio-economic condition of the people. The Government of Pakistan is establishing IT infrastructure for the enhancement of digital learning in the country. Moreover, the HEC administers are enhancing and encouraging not only research activities but also higher education in the country as well.

Therefore, the aim of this study was to determine the effective use of e-learning based education in higher education institutions and find out potentials of technology integration as well as problems in e-learning during the classroom instructions.The useful practices of these technologies in teaching and learning process are very necessary. It develops interest and motivates students to learn. Through e-learning with the help of several instructional methods such as lecture notes, supporting materials, classroom activities, recorded videos, written reports, exercises, formative assessments, and quizzes enhance effective learning. Today effective learning is possible due to the use of advance technologies. Pakistan is far away in e-teaching and e-learning in classrooms than other developed countries. A very few

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researches was found on this study in the current literature. Therefore, the researcher decided to conduct research on the use of e-learning based education in higher education to create technological enhanced learning environment in public and private universities in Pakistan. This research is able to recommended strategies for supporting educational institutions to resolve the identified problems in order to save time, skills and resources in the future because e-learning can have a positive impact on education..

Statement of the Problem

The researcher has reviewed the previous studies (Rusman 2016;Santos and Miguel 2019) which show a great debate among the researchers regarding traditional vs e-learning methods in education through which it was found that technology based learning has a great potential than traditional education. Although a few researchers (Hussain, 2012; Jawaid, et al., 2013; Shah & Salman, 2016) tried to analyze distance/online learning in Pakistan at higher level education, but especially in Punjab, a high-populated area of Pakistan, there's still no investigation has been done to address e-learning based education in classroom perspective along-with its problems and potentials. Therefore, the researcher decided to select this topic to examine the students' perceptions regarding the practices of e-learning that are perceived by Pakistani public and private universities to establish e-learning based education as a useful tool for improving academic performance.

Objectives of the Study

In the light of above research background, the following objectives of the study are set out;-

1. To identify the students' perceptions regarding the e-learning practices of public and private universities.
2. To identify the problems faced by the students regarding the use of e- learning practices in public and private universities.
3. To identify the difference in public and private universities perceptions about the use of e-learning at higher education level.
4. To suggest the potentials of e-learning based education for students in public and private universities.

Significance of the Study

This study is based on e-learning which is proved more preferable, useful, and most up-to-date and result oriented method than traditional way of learning and teaching in education especially at higher education level in the world. Hence this study will be very significant for

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the under-development countries like Pakistan which is left behind in quality education and innovations. This study addresses the perceptions, issues and potentials of students regarding e-learning based education at higher education level in Pakistan. Therefore, this study will be very useful for policy makers to address real and actual features of e-learning at higher education level. The present study might be valuable to other higher education institutions that face issues in their effort to support teaching and learning with technology in the classroom. This research will also be helpful for the Government to implement this concept in nearer future throughout the Pakistan.

Research Methodology

In this research study, quantitative and qualitative mix method research was used. For quantitative and qualitative data collection, close-ended and open-ended statements were used through survey method for seeking the existing perception among students about use of e-learning based education in higher education institutions and about the issues and future potentials in public and private sector universities in Pakistan. Total population of this study was calculated as fifty nine thousand one hundred and five (59105) students of public and private universities of Punjab, Pakistan. In quantitative research, Proportional allocation is recommended to evaluate sample size in case of large population through stratified sampling technique. The overall proportional allocation sampling size was calculated three hundred and ninety seven (397) students.

Date Analysis

Quantitative Data Analysis

Table 1: Responses to Technology Accessibility

Item	Statement			SA	A	UN	D	SD	Total	Mean	SD
1	My University provides me access to e books via website rather than in the library	**Public**	Count	47	56	35	47	75	260	2.51	1.491
			%	11.8%	14.1%	8.8%	11.8%	18.9%	65.5%		
		Private	Count	53	22	21	21	20	137	2.75	1.500
			%	13.4%	5.5%	5.3%	5.3%	5.0%	34.5%		
		Total	Count	100	78	56	68	95	397	**2.95**	1.528
			%	25.2%	19.6%	14.1%	17.1%	23.9%	100.0%		
2	E-learning resources are placed in classrooms as well as in the labs/Library of university	**Public**	Count	49	55	36	57	63	260	2.26	1.350
			%	12.3%	13.9%	9.1%	14.4%	15.9%	65.5%		
		Private	Count	19	49	35	16	18	137	2.77	1.516
			%	4.8%	12.3%	8.8%	4.0%	4.5%	34.5%		
		Total	Count	68	104	71	73	81	397	**2.43**	1.428
			%	17.1%	26.2%	17.9%	18.4%	20.4%	100.0%		

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3	My classroom learning environment is connected to internet	**Public**	Count	44	58	32	70	56	260	2.49	1.318
			%	11.1%	14.6%	8.1%	17.6%	14.1%	65.5%		
		Private	Count	34	51	21	13	18	137	2.65	1.421
			%	8.6%	12.8%	5.3%	3.3%	4.5%	34.5%		
		Total	Count	78	109	53	83	74	397	**2.91**	1.419
			%	19.6%	27.5%	13.4%	20.9%	18.6%	100.0%		
4	Different uses of technology helped me during the classroom instructions	**Public**	Count	43	54	44	61	58	260	2.66	1.396
			%	10.8%	13.6%	11.1%	15.4%	14.6%	65.5%		
		Private	Count	36	36	24	21	20	137	2.77	1.408
			%	9.1%	9.1%	6.0%	5.3%	5.0%	34.5%		
		Total	Count	79	90	68	82	78	397	**2.97**	1.421
			%	19.9%	22.7%	17.1%	20.7%	19.6%	100.0%		
5	Digital Library helps me a lot in my Learning	**Public**	Count	37	23	29	105	66	260	2.74	1.225
			%	9.3%	5.8%	7.3%	26.4%	16.6%	65.5%		
		Private	Count	38	35	12	25	27	137	3.01	1.421
			%	9.6%	8.8%	3.0%	6.3%	6.8%	34.5%		
		Total	Count	143	101	41	62	50	397	**2.99**	1.428
			%	36.0%	25.4%	10.3%	15.6%	12.6%	100.0%		

Table 1 reveals that the students of private universities have better technology accessibility in their classroom as compare to the students of public universities. Further, the highest total mean value 2.99 shows the strongest factor of digital library is the major source of information which is mostly used by the students for e-learning regarding technology accessibility while the lowest total mean value 2.43 reveals the weakest factor of less availability of E-learning resources in classrooms.

Table 2: Responses towards Perceived Usefulness

Item	**Statement**			**SA**	**A**	**UN**	**D**	**SD**	**Total**	**Mean**	**SD**
1	E-learning promotes an active learning experience for the students	**Public**	Count	53	44	40	66	57	260	2.74	1.520
			%	13.4%	11.1%	10.1%	16.6%	14.4%	65.5%		
		Private	Count	41	29	18	22	27	137	3.12	1.453
			%	10.3%	7.3%	4.5%	5.5%	6.8%	34.5%		
		Total	Count	94	73	58	88	84	397	**2.99**	1.485
			%	23.7%	18.4%	14.6%	22.2%	21.2%	100.0%		
2	I am interested in learning my course with the help of E-learning	**Public**	Count	55	44	41	66	54	260	2.63	1.435
			%	13.9%	11.1%	10.3%	16.6%	13.6%	65.5%		
		Private	Count	41	31	24	20	21	137	3.08	1.450
			%	10.3%	7.8%	6.0%	5.0%	5.3%	34.5%		
		Total	Count	96	75	65	86	75	397	**2.92**	1.459
			%	24.2%	18.9%	16.4%	21.7%	18.9%	100.0%		
3	The students who use electronic-library and electronic-	**Public**	Count	60	46	29	61	64	260	2.68	1.485
			%	15.1%	11.6%	7.3%	15.4%	16.1%	65.5%		
		Private	Count	41	33	15	25	23	137	2.75	1.523
			%	10.3%	8.3%	3.8%	6.3%	5.8%	34.5%		
		Total	Count	101	79	44	86	87	397	**2.95**	1.521

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	learning resources are getting better education than those who do not		%	25.4%	19.9%	11.1%	21.7%	21.9%	100.0%		
4	E-learning provide quality of learning more than traditional classroom learning	**Public**	Count	52	45	29	68	66	260	2.66	1.467
			%	13.1%	11.3%	7.3%	17.1%	16.6%	65.5%		
		Private	Count	40	34	20	19	24	137	2.83	1.490
			%	10.1%	8.6%	5.0%	4.8%	6.0%	34.5%		
		Total	Count	92	79	49	87	90	397	**3.01**	1.502
			%	23.2%	19.9%	12.3%	21.9%	22.7%	100.0%		
5	I am self-motivated to use e-learning	**Public**	Count	25	76	33	75	51	260	2.72	1.194
			%	6.3%	19.1%	8.3%	18.9%	12.8%	65.5%		
		Private	Count	13	69	13	28	14	137	2.91	1.311
			%	3.3%	17.4%	3.3%	7.1%	3.5%	34.5%		
		Total	Count	38	145	46	103	65	397	**3.03**	1.291
			%	9.6%	36.5%	11.6%	25.9%	16.4%	100.0%		

Table 2 reveals that the students of private universities have better perception of technology usefulness in their classroom as compare to the students of public universities. Further, the highest total mean value 3.03 shows the strongest factor of self-motivation of students to use e-learning which depends on their perceived usefulness while the lowest total mean value 2.92 reveals the weakest factor of less interest of students to use E-learning resources in classrooms.

Table 3 Responses to Problems

Item	Statement			Always	Often	Sometimes	Rarely	Never	Total	Mean	SD
1	I face electricity issues in the use of e-learning	**Public**	Count	46	53	15	122	23	260	2.89	3.126
			%	11.6%	13.4%	3.8%	30.7%	5.8%	65.5%		
		Private	Count	30	13	5	16	72	137	2.37	1.170
			%	7.6%	3.3%	1.3%	4.0%	18.1%	34.5%		
		Total	Count	76	125	20	138	36	397	**2.55**	2.637
			%	19.1%	31.5%	5.0%	34.8%	9.1%	100.0%		
2	I have lack of competency in the use of e-learning	**Public**	Count	17	74	103	39	26	260	3.01	2.073
			%	4.3%	18.6%	25.9%	9.8%	6.5%	65.5%		
		Private	Count	10	32	47	30	16	137	2.11	2.858
			%	2.5%	8.1%	11.8%	7.6%	4.0%	34.5%		
		Total	Count	27	106	150	69	42	397	**2.98**	2.813
			%	6.8%	26.7%	37.8%	17.4%	10.6%	100.0%		
3	There is lack of Infrastructure in the	**Public**	Count	157	54	10	9	25	260	3.19	4.946
			%	39.5%	13.6%	2.5%	2.3%	6.3%	65.5%		
		Private	Count	14	30	4	8	78	137	3.02	0.993
			%	3.5%	7.6%	1.0%	2.0%	19.6%	34.5%		

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	institution to use e-learning	**Total**	Count	235	84	14	17	39	397	**3.08**	3.020
			%	59.2%	21.2%	3.5%	4.3%	9.8%	100.0%		
4	Unavailability of internet facilities creates difficulty in the use of e-learning	**Public**	Count	46	148	13	29	24	260	3.05	2.138
			%	11.6%	37.3%	3.3%	7.3%	6.0%	65.5%		
		Private	Count	26	68	6	20	14	137	2.51	3.767
			%	6.5%	17.1%	1.5%	5.0%	3.5%	34.5%		
		Total	Count	72	216	19	49	38	397	**3.01**	2.077
			%	18.1%	54.4%	4.8%	12.3%	9.6%	0.3%		
5	Ineffective training becomes problem for me in the use of e-learning	**Public**	Count	134	39	43	7	37	260	3.27	3.700
			%	33.8%	9.8%	10.8%	1.8%	9.3%	65.5%		
		Private	Count	75	14	27	3	16	137	2.44	2.690
			%	18.9%	3.5%	6.8%	0.8%	4.0%	34.5%		
		Total	Count	10	53	70	209	53	397	**2.87**	3.020
			%	2.5%	13.4%	17.6%	52.6%	13.4%	100.0%		
6	I find it difficult to learn in the class with the help of E-learning	**Public**	4	136	32	24	61	3	260	2.08	1.883
			1.0%	34.3%	8.1%	6.0%	15.4%	0.8%	65.5%		
		Private	12	34	12	1	75	3	137	1.97	1.793
			3.0%	8.6%	3.0%	0.3%	18.9%	0.8%	34.5%		
		Total	36	95	44	5	211	6	397	**2.01**	3.453
			9.1%	23.9%	11.1%	1.3%	53.1%	1.5%	100.0%		

Table 3 reveals that the students of private and public universities face same problems for e-learning in their classroom. Further, the highest mean value 3.08 shows the major problem of lack of Infrastructure to use e-learning in classroom instructions. The second problem, which shows mean value 3.01, is unavailability of internet facilities during classroom instruction that creates difficulty in the use of e-learning in both private and public universities. The third problem has mean score 2.98 which reveals that the lack of competency towards use of technology among the students of both private and public universities may cause their less use of e-learning during classroom instructions. The fourth problem which got mean scores 2.87 shows ineffective training that creates technical hurdles for the students in the use of e-learning. The fifth problem which got mean scores 2.55 shows lack of electricity and the sixth problem which got mean scores 2.01 shows that the students of both private and public universities found it difficult to learn in the class with the help of E-learning.

Table 4 Responses to Potentials

Item	Statement			Always	Often	Sometimes	Rarely	Never	Total	Mean	SD
1	Using e-learning	**Public**	Count	14	72	70	81	23	260	1.91	1.200
			%	3.5%	18.1%	17.6%	20.4%	5.8%	65.5%		

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	technology is a good idea during classroom learning	**Private**	Count	31	35	35	22	14	137	2.80	1.294
			%	7.8%	8.8%	8.8%	5.5%	3.5%	34.5%		
		Total	Count	45	107	105	103	37	397	**2.49**	1.164
			%	11.3%	27.0%	26.4%	25.9%	9.3%	100.0%		
2	I think using e-learning is a trend during learning	**Public**	Count	5	33	27	171	24	260	2.55	1.036
			%	1.3%	8.3%	6.8%	13.1%	6.0%	65.5%		
		Private	Count	3	95	14	11	14	137	2.62	1.043
			%	0.8%	23.9%	3.5%	2.8%	3.5%	34.5%		
		Total	Count	8	266	41	44	38	397	**2.59**	1.039
			%	2.0%	67.0%	10.3%	11.1%	9.6%	100.0%		
3	The e-learning technology will be compatible with the smart devices I use during learning	**Public**	Count	89	19	23	50	79	260	2.66	1.274
			%	22.4%	4.8%	5.8%	12.6%	19.9%	65.5%		
		Private	Count	67	44	8	8	10	137	3.10	1.073
			%	16.9%	11.1%	2.0%	2.0%	2.5%	34.5%		
		Total	Count	117	123	31	97	29	397	**2.95**	1.331
			%	29.5%	31.0%	7.8%	24.4%	7.3%	100.0%		
4	I plan to use for e-learning technology during learning	**Public**	Count	33	23	27	5	172	260	2.53	1.015
			%	8.3%	5.8%	6.8%	1.3%	43.3%	65.5%		
		Private	Count	3	96	14	11	13	137	2.60	1.033
			%	0.8%	24.2%	3.5%	2.8%	3.3%	34.5%		
		Total	Count	8	268	41	44	36	397	**2.58**	1.026
			%	2.0%	67.5%	10.3%	11.1%	9.1%	100.0%		
5	I would recommend using e-learning technology during learning	**Public**	Count	45	72	18	101	23	260	1.99	1.328
			%	11.3%	18.1%	4.5%	25.4%	5.8%	60.7%		
		Private	Count	67	43	5	6	16	137	2.10	2.863
			%	16.9%	10.8%	1.3%	1.5%	4.0%	39.3%		
		Total	Count	112	115	23	107	39	397	**2.72**	2.500
			%	28.2%	29.0%	5.8%	27.0%	9.8%	100.0%		

Table 4 reveals that the students of private universities consider e-learning has a better level regarding potentials as compare to the students of public universities. Further, the highest mean value 2.95 shows the strongest factor in which students of private and public universities are more likely to use e-learning technology if it compatible with the smart devices which are easily accessible during learning while the lowest mean value 2.49 reveals the weakest factor in which students don't think that using e-learning technology is a good idea during classroom learning.

Qualitative Data Analysis

Table 5: Three Main Issues Regarding E-Learning Practices

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	Issues	Code	Frequency	Percentage
Public	Lack of Resources (Devices, Electricity, Internet)	LR	33	28.70%
	Lack of Interest and Motivation	LI	16	13.91%
	Online Management System	OMS	8	6.96%
Private	Communication Gap	CG	28	24.35%
	Technical Skill	TS	14	12.17%
	Time	T	12	10.43%
	Cost	C	4	3.48%
		Total	**115**	**100%**

The above table is showing the highest frequency (33, 28.70%) regarding the Lack of Resources (compatible/updated Devices, Electricity short fall and non-availability of Internet etc.)Which means lack of resources is the major issue for students not to adopt e-learning practices in the public universities. While, according to the students of private universities, communication gap by scoring (28, 24.35%) which means communication gap among students and teachers creates hurdle for e-learning during classroom instructions which are main issues for students to adopt e-learning practices.

Table 6: Three Main Suggestions Regarding E-Learning Practices

	Suggestions	Code	Frequency	Percentage
Public	Provision of Resources (Devices, Electricity, Internet)	PR	7	33.33
	Increase Technical Skill	ITS	3	17.29
	Free of Cost Facilities	FCF	2	9.52
	Online Management System	OMS	1	4.76
Private	Increase Interest and Motivation	IIM	4	19.05
	Time Management	TM	3	11.29
	Fill Communication Gap	FCG	1	4.76
		Total	**21**	**100.00**

The above table is showing the highest frequency (7, 33.33%) regarding the provision of resources (compatible/updated Devices, Electricity short fall and non-availability of Internet etc.) which means the provision of resources related to e-learning are suggested.While Increase Interest and Motivation (4, 19.05%) was mainly suggested by the students of private universities to adopt e-learning practices.

Table 7: Three Main Differences between E-Learning and Traditional Learning

	Suggestions	Code	Frequency	Percentage
Public	Traditional learning is better	TL	61	52.14

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Private	Technical skills are required for e-learning	TS	16	13.7
	e-learning is better	EB	4	4.71
	e-learning is same as distance learning	DL	28	22.64
	e-learning is based on technology	ET	6	5.1
	e-learning is cheaper than traditional	EC	2	1.71
		Total	**117**	**100.00**

The above table is showing the highest frequency (61, 52.14%) regarding the traditional learning which means the traditional learning is considered better than e-learning. While, according to the students of private universities, e-learning is same as distance learning by scoring (28, 22.64%) which means they considered the both as same, therefore, their views and perception regarding e-learning is not clear.

Table 8: T-Test

						95% Confidence Interval of the Difference	
		T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Technology Accessibility	Public	78.585	396	.000	14.12481	13.4848	14.1481
	Private	78.832	396	.000	14.25945	13.9065	14.6124
Perceived Usefulness	Public	80.132	396	.000	14.12483	14.2321	15.1213
	Private	80.268	396	.000	14.89673	14.5319	15.2616
Potentials	Public	56.136	396	.000	13.10213	12.2018	13.2123
	Private	56.336	396	.000	13.32494	12.8599	13.7899
Problems	Public	45.124	396	.000	14.13248	13.1141	15.0124
	Private	45.365	396	.000	14.56423	13.9331	15.1954

In order to find the significant differences among variables, one sample t-test was used at 95% confidence interval and 5% significance level in this study. Table shows the 2-tail significance on scales of E-learning, Problems, and Potentials,Perceived Usefulness and Technology Accessibility of students in both private and public universities. Significant values reveal that there is a significant relationship (*p=.000<.05*) among all variables while the Mean Difference Values show that all variables have different relationship with each other. The t-statistic value 80.26 and mean value 14.89 show that the students' Perception regarding the usefulness of E-learning has stronger effect on their e-learning practices than other variables.

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Findings

In this present study public universities, students' data analysis show the mean values 2.51, 2.26, 2.49, 2.66, 2.74 against five -items under Technology Accessibility in which all five values are negative (below than 3.00), therefore, the students of public universities have no access to the technology in their classrooms. In private universities, students' data analysis show the mean values 2.75, 2.77, 2.65, 2.77, 3.01 scored by the students of private universities in which four values are negative (below than 3.00) while only one value is positive (above than 3.00), therefore, the students of private universities have also less access to the technology in their classrooms.

This study indicate that in public universities, students' data analysis the mean values 2.74, 2.63, 2.68, 2.66, 2.72 scored by the students of public universities against five items under technology usefulness in which all values are negative (below than 3.00), therefore, the students of public universities have negative perception towards the usefulness of e-learning. In private universities, students' data analysis show the mean values 3.12, 3.08, 2.75, 2.83, 2.91 scored by the students of private universities in which two values are positive (above than 3.00) and three values are negative (below than 3.00), therefore, the students of private universities have also negative perception towards the usefulness of e-learning.

In this study public universities, students' data analysis show the mean values 2.89, 3.01, 3.19, 3.05, 3.27, 2.08 scored by the students of public universities in which four values are positive (above than 3.00) and two values are negative (below than 3.00), therefore, the students of public universities have a high level of problems in using e-learning. In private universities, students' data analysis show the mean values 2.37, 2.11, 3.02, 2.51, 2.44, 1.97 scored by the students of private universities in which five values are negative (below than 3.00) and one value is positive (above than 3.00), therefore, the students of private universities have an average level of problems in using e-learning.

In public universities, students' data analysis show the mean values 1.91, 2.55, 2.66, 2.53, 1.99 scored by the students of public universities in which all values are negative (below than 3.00), therefore, the students of public universities considered there is no potential of e-learning in future. In private universities, students' data analysis show the mean values 2.80, 2.62, 3.10, 2.60, 2.10 scored by the students of private universities in which four values are negative (less than 3.00) and one value is positive (above than 3.00), therefore, the students of private universities also didn't consider enough potential of e-learning in future.

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Furthermore, qualitative data analysis of students also shows their perceptions regarding e-learning practices. Majority of public and private universities' students considered traditional learning is better (52.14%) e-learning is similar as distance learning (23.93%) and higher technical skills are required for e-learning (13.7%).Further, students of public and private universities' perception regarding perceived ease of use show a negative perception towards e-portal, satisfaction with e-learning, e-learning need, e-learning facilities and brighter prospects with e-learning in classrooms. Qualitative data analysis also shows the opinion of public and private universities' students regarding e-learning practices. Their responses show a negative perception of e-learning practices regarding online lectures, less satisfaction, e-learning portal and less use of group presentations.

Discussion

The results of this study show the students' perception regarding e-learning reveals that the students of public universities have lower and negative perception regarding e-learning while the students of private universities have comparatively better perception. These findings are in-line with the studies' results of (Zuvic-Butorac et al., 2011) in which they found that students' expectations for e-learning became stronger as features such as usability, functionality, management, interactive content and e-learning assistance are completely incorporated into the learning environment. This study results show the problems in adopting e-learning practices such as lack of resources ,communication gap, less technical skills, lack of funds, insufficient technology based infrastructure and missing specific e-learning policy create hurdle to adopt e-learning during classroom instructions. These findings are in line with the findings of (Nasir , 2017; Paul & Jefferson, 2019) performed a research which have shown that IT implementation of education by e-learning poses a range of challenges linked to quality. There is also another motivating finding regarding the appropriate suggestions about e-learning practices for future adaptation by students at higher education level in Pakistan. In qualitative analysis, the highest frequency regarding the provision of resources which means the provision of resources related to e-learning is suggested on priority bases by the students. These findings are in line with the findings of (Cruthers, 2008; Hossain & Quinn, 2012) found that E-learning specific policy must be made by university management and implemented in the universities. Most important thing also describe in these studies that financial support for e-learning classroom instructional environment must be given by the

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govt. Training for both (students and teachers) must be provided regarding e-learning adaptation.

Conclusion

The researcher investigated the perceptions of students regarding practices of e- learning based education at Higher Education level in Pakistan. The researcher successfully identified the students' perceptions problems and potentials regarding e-learning based education and Integration of Technology at higher education level in Pakistan. Under the theory of connectivism, three dimensions related to the e-learning based education were analyzed in context of higher education of Pakistan in 9-universities of Punjab. The research tried to get answers of the research questions of this study which were regarding the perception of students about e-learning while the differences among public and private universities of Punjab-Pakistan were also identified. Potentials of e-learning based education were also examined through this research. Suggestions for adopting e-learning based education and its implementation during classroom instructions at higher education level were also analyzed in the light of students opinions. The findings of this research will be helpful for further investigations in future as well as to address the real issues which are provoking e-learning implementation and adaptation in public and private universities in Pakistan.

Recommendations for Future Researches

This study shows the appropriate potentials of e-learning practices at higher education level of Pakistan and for future researches which are as under;-

1. It must be understood that using e-learning during learning and teaching is not considered only a trend but also a need for quality education.
2. E-learning technology is compatible with the smart devices for use during learning and teaching, therefore, no hesitation among both teachers and students must be felt.
3. Moral, technical and financial support of Universities must be available for students and teachers because it is a major factor to increase potential of e-learning practices during classroom instructions.
4. Further Training and courses about importance of perception of technology usefulness, potentials, behaviour, skills, infrastructure and challenges towards e-learning should be provided to the HEIs.

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