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AN ANALYSIS OF PERCEPTIONS AND PRACTICES OF TEACHER-EDUCATORS REGARDING USE OF TECHNOLOGY IN CLASSROOM INSTRUCTION

By

[1]Vagiha Naz, [2] Prof. Dr. Khalid Khurshid, [3] Romena Ali

Abstract

In the 21st century the most urgent priorities of all of the Government of the world is the use of technology in teaching and learning. The integration of technology in classroom instruction provides an effective teaching-learning environment. Central to this study was the utilization of Constructivist theory. The core objective of this research was to investigate the relationship between teacher-educators' perceptions & practices towards the technological use in classroom instruction in Punjab, Pakistan. The study was both quantitative and qualitative in nature. To complete this study, thirteen (13) public universities of Punjab, Pakistan were selected. For quantitative data out of one hundred and eighty-eight (188) teacher-educators, a sample of one hundred and thirty-two (132) teacher-educators was selected through stratified random sampling technique. However for qualitative data the chairpersons of the Education department of thirteen (13) universities were selected. A 5- point Rating Scale was prepared and administered to teacher-educators. To strengthen the views of teacher-educators, a semi-structured interview protocol from the chairpersons of the Department of Education was used to record the perceptions of chairpersons regarding the use of technology. Numerical data was analyzed by using mean scores and correlation and qualitative data was analyzed by thematic analysis techniques. From analysis, it was inferred that majority of teacher-educators have perception about technology & they use it in classroom teaching & learning. The value of correlation coefficient between perception and practice was found moderate. This shows that two variables (construct) of tool are positively correlated with each other. Data collected by the chairpersons of the education department revealed that most of the teacher-educators of their respective departments are highly motivated in the use of technology. Few recommendations were given by the researcher too in the light of findings and conclusions of the study.

Keywords: *Perception and Practices, Issues, Remedies, Teacher-educators, Technology, chairpersons, Teacher Education Department, Pakistan.*

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[1]Ph.D Scholar, Department of Education, Bahauddin Zakariya University, Multan

Introduction

Technology based education is a back bone of any developed country. In this globalization era, technological breakthrough is so fast that it creates competitions in all walks of our lives and education is one of them. Education is a source to build nations and it is possible only by increasing the quality of education (Ghavifekr & Rosdy, 2015). In many

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fields including education, the term "technology" is very demanding. That's why the technology is known as a development tool in all over the world. Technological innovations changed the societies and totally transformed the life of people and the way they work, live or think (Greb & Arnum, 2007). Technology has become a driving force in the progression of the life of people and it has a great effect on education system. As a part of the society, all educational institutions prepare their students to compete in the knowledgeable society & must take into account its use in teaching and curriculum (Ghavifekr et al., 2012). These authors also noted that technology is the important factor developing the environment of current education. Many institutions are helping to improve classroom instruction by providing the students digital technological tools such as computers, multimedia, smart boards, better internet connections and tablets etc. They are also trying to improve the computer skills of teachers & students by implementing new programs of technology. The teachers often feel difficult to integrate new educational technologies seamlessly & successfully, in the meanwhile, teachers generally appreciate the benefits of educational technologies. There are great challenges for teachers of all classes to use latest technological devices, their adaptation to courses and teaching techniques for the integration of new teaching materials and the technical integration (Johnson et al., 2016).

In addition to, there are a lot of researches on the teacher's Perception about integration of technology in classroom. Most of the teachers try to develop quality in education with the help of technology. From there, people can assess perceptions of teachers in the use of technology in teaching-learning process (Warschauer, 2007). It includes teachers' understanding in the classroom, their use of technological tools and their views of using technology in the classroom for the betterment of students. It's mean that teachers need to find different ways to use technology in teaching and provides complex cognitive engagement so that students can engage in the learning process. The teachers who lack professional development in the use of technology they show reluctance in the use of technology during instruction & even they do not know the benefits of the use of technology during instruction (Cope & Ward, 2002).

Furthermore, in many studies, it was investigated that proper use of technology in teacher education program inspires the trainee-teachers. They will apply almost same quality in their own teaching which they receive by their teacher during their study in teacher training program. Technology has received some attention in teacher training programs, regardless of how it is used properly in classroom or to just support teacher training programs. It seems that

few teachers can use technology with fluency and develop student centered approach in their teaching (Jamil, 2014). In teacher education program, the teacher-educators should fully train trainee-teachers so that when they enter in the industry they can make classroom lively, student centered and create efficient and effective teaching-learning environment (Davis, 2013). Savery (2002) conducted his study regarding technological skill and training and found that the more teachers have knowledge about technology; they are more in habit to use it in classes. It is therefore important that teachers receive training to use technology. It does not mean that technology has adopted the role of teachers. These authors also found that in classrooms without computers, teachers found their role to be more traditional like teacher-centered and less modern like student- centered. They found that teachers felt confident during lectures while using technologies like projectors, email, and video lectures, etc.

Infact, in Pakistan, the integration of technology was focused in Nawaz Sharif period under NEP (1998-2010) which resulted in increasing computer lab. In this policy the main focus was on the use of technology in classroom. However the effective use of technology was missing (Alya, 2014). In Pakistan, the state education institutes are responsible for the pre-service education (B.Ed) program for primary education, including on-the-job training. Most teacher-educators use the old teaching method. Some teacher-educators have basic computer skills. However, most teacher-educators believe that use of technological tool in classroom is very necessary. The integration of technology into teaching methods changes the existing method of teaching (Ibad, 2017). It is mentioned in the National Education Policy, 2017 that the competence level of teachers is substandard in Pakistan. There are large numbers of unskilled especially professionally unskilled teachers in all the provinces of Pakistan, and it is growing day by day. Numerous studies over the past decades have highlighted the main problems of teacher training in Pakistan. The literature points to the diversity of characteristics and it is widely recognized that the quality of Pakistani teachers is severely compromised due to improper professional development (Malik, 2020). It is defined in National Education Policy 2009 that the quality of teachers and to recognize their importance seen as a top priority. For students success it is necessary to train trainee-teachers in teacher education programs with the help of technology. It is a technologically modern world and educational reform is needed to improve teacher training plans and improve the knowledge and skills of teachers. However, teacher education institutions in Pakistan are eager to improve their curricula as they face a lot of challenges, including the shortage of highly qualified and skilled teachers. Punjab has many teacher training institutions dedicated

to training prospective teachers of all levels (Khizar et al., 2019).

Moreover, several researchers investigated the issues regarding use of technology during classroom instructions. It was concluded that some teachers believe that for proper use of technology professional skills are needed. If teachers use technology properly in classrooms it can bring positive academic achievements in students & they will get benefits in future that proper use of technology by teachers can bring positive academic benefits for students (Ertmer et al., 2012). They further stated that, the problem may be with the teachers because they do not believe that the specific technical skills are also required to trainees in their teacher training programs or in the workplace. They further stated that, if teachers are using technology, they must develop their knowledge about how to use technology, so that they can transform the potential of technology to solve classroom problems. Research scholars have discovered that the most usual difficulties for combining technologies in the classrooms were deficiency of technical assistance, lack of knowledge, access and training in the use of technology (Aue, 2014). Another major dispute is time, as educators have so many responsibilities other than teaching. The use of technology during the teaching-learning process demands some techniques which require a greater capability of teachers for implementing the use of computers on their students (Tsai & Chai, 2012).

To sum up, the use of technology in teaching had been remained a topic of discussion among various critiques of education. Various reports and research studies expressed the importance of technology in teaching to fulfill the needs of quality education. Teacher education program is a base for trainee-teachers, and the teachers of the teacher-education programs are considered as the founder of the trainee-teachers, because they prepared the trainee-teachers for imparting education to next generation. To develop quality in teachers the practices of technology in classroom instruction is as much necessary as its perception. In previous related researches e.g. Bebell et al., (2004); Maddux and Johnson (2006); Loucks-Horsley et al., (2009) major focus was on the different aspects of teachers training to develop the quality in teacher training programs. The goal of teacher training is to train trainees to incorporate technology into real classroom situation (Loucks- Horsley et al., 2009). The teachers' perception about the integration of technology is believed to reveal their true thoughts on the concept, and examining their perception and barriers to integrate technology into the classroom instruction will reveal how teachers perceive the process of technology integration in practice and what to expect to meet and experience. Little research has been conducted to access the perception and practice of teacher-educators in the integration of

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technology with trainee teachers in Pakistani context at university level. So, the present study was focus to investigate the perception and practices of teacher-educators towards the use of technology in teacher-education classroom instruction, to find out the problems in the practice of technology and in last to suggest some remedies to solve the problems. The present study covered the gap in the existing literature by describing teacher-educators perceptions and practices for integrating technology into classroom instruction. There are very few studies that have been conducted this way to understand the perceptions and practices of teacher-educators regarding the use of technology in teacher-education classroom.

Objectives of the Study

The objectives of the study were;

1. To access the perceptions and identify the practices of teacher-educators regarding use of technology in classroom situation.
2. To determine the relationship between Teacher-educators' scores on Perception-based and Practice-based scales.
3. To analyze the various aspects of heads to highlight the problems and to give remedies associated with the use of instructional technology.

Significance of the Study

To improve the quality of education, it is needed to identify the views of teacher-educators about teaching through technology in order to understand whether they are ready to incorporate technology into teaching (ChanLin, 2005). There are many reasons to focus research on technological use in the classroom in teacher education programs. The lack of effective technological use is a well-documented problem in education. However, it is somewhat difficult to pinpoint where the problem (teacher-educator perspective or trainee perspective or some other perspective lies for improvement. In order to pinpoint the location of the problem, this research tried to identify the weaknesses and identify the need for more technical training to integrate the trainees into their teacher training plan or to support the need for more professional development of the trainees. This research may be useful for both teacher-educators and trainees so that trainees may be productively trained and to improve the use of technology in their courses and programs. The present research may be significant to enhance the quality of classroom teaching & learning process with the help of technology in

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pre service teacher education programs at university level which ultimately result in the improvement of the quality of trainees in their teaching-practice at schools.

Methodology

In this study, Descriptive method was selected. This study was both quantitative and qualitative in nature. So, it was multi-method research. The data was collected through a questionnaire and interviews. In quantitative manner it was a co-relational study. In qualitative research design the researcher conducted an interview protocol and tried to explore the efforts of the respondents in the integration of technological tools or to highlight and suggest some remedies to solve problems in the use of technology during classroom instruction. The population under study was teacher-educators and chairpersons of the Education department of thirteen (13) public universities (at least one from each division) of the Punjab, Pakistan. Two sampling technique were used i.e. convenience sampling and Stratified random sampling. The selection of universities was made by convenience sampling approach as per the convenience of researcher. As per accessible population out of one hundred and eighty-eight 188(132) faculty members were selected by stratified sampling technique. By proportional allocation the number of teacher-educators from each university was determined by the formula of proportion allocation. As per accessible population for interview protocol the chairpersons of the Education department of 13 universities were selected for qualitative data. Two types of instruments were developed for data collection. The current research tools used were a questionnaire for teacher-educators and an interview protocol for chairpersons of Department of Education. The questionnaire consisted of 35 close-ended items. The interview protocol comprising of five (5) questions was prepared for the chairpersons of departments of education of the public sector universities to take their views about the practice of technologyin the classrooms of their respective department.

Analysis and Interpretation

Quantitative analysis

Table: 1 Perception of teacher-educators

Sr.No.	Statement	SA	A	U	DA	SD	Mean	SD
1	Technology makes instruction lively	50 37.9%	79 59.8%	3 2.3%	0 0%	0 0%	4.36	0.52
2	Technology is a great support in classroom situation	48 36.4%	66 50.0%	14 10.6%	3 2.3%	1 0.8%	4.19	0.77

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3	Integration of technology with teaching-learning process	62 47.0%	60 45.5%	6 4.5%	4 3.0%	0 0.0%	4.36	0.71
4	Technology promotes an active learning experience	43 32.6%	75 56.8%	13 9.8%	1 0.8%	0 0.0%	4.21	0.64
5	Use of technology has changed my teaching style	55 41.7%	70 53.0%	6 4.5%	1 0.8%	0 0.0%	4.36	0.60
6	Technology helps students to prepare good lesson plan	51 38.6%	69 52.3%	11 8.3%	1 0.8%	0 0.0%	4.29	0.65
7	Technology provides support to trainees during their teaching practices	61 46.2%	62 47.0%	8 6.1%	1 0.8%	0 0.0%	4.39	0.64
8	Trainees who use technology are getting better education	63 47.7%	55 41.7%	11 8.3%	3 2.3%	0 0.0%	4.35	0.73
9	Technological skills are necessary to trainees success in studies	39 29.5%	87 65.9%	5 3.8%	1 0.8%	0 0.0%	4.24	0.55
10	Technology enhance my professional development	50 37.9%	65 49.2%	14 10.6%	2 1.5%	1 0.8%	4.22	0.75

In the above table the perceptions of teacher-educators regarding the use of technology in classroom teaching-learning process was calculated. In all statements the mean scores were highly positive (above than 4.00). This showed that teacher-educators have good perception about technological use in classroom teaching & learning process.

Table: 2 IT knowledge of teacher-educators

Sr. No.	Statement	SA	A	U	DA	SDA	Mean	SD
11	Technological knowledge covers many weaknesses of a teacher-educator	8 6.1%	50 37.9%	16 12.1%	40 30.3%	18 13.63%	2.92	1.21
12	I critically think how to use technology in classroom instruction	54 40.9%	63 47.7%	8 6.1%	6 4.5%	1 0.8%	4.23	0.82
13	I know the ways to integrate technology with the Curriculum	50 37.9%	67 50.8%	11 8.3%	1 0.8%	3 2.3%	4.21	0.81
14	I guide my students to use different websites to search specific topic	41 31.1%	52 39.4%	18 13.6%	18 13.6%	3 2.3%	3.83	1.08
15	I have an ability to use multimedia as a medium for delivery of class lectures	32 24.2%	80 60.6%	13 9.8%	7 5.3%	0 0.0%	4.04	0.74
16	I guide my students to work collaboratively to make group presentations using IT	29 22.0%	67 50.8%	20 15.2%	13 9.8%	3 2.3%	3.80	0.96
17	I feel confident while teaching with the help of computer	55 41.7%	69 52.3%	6 4.5%	2 1.5%	0 0.0%	4.34	0.64

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In above table teacher-educators knowledge about IT was calculated. In four statements the mean scores were highly positive (above than 4.00) while in two statements the mean scores were positive (above than 3.00) and only in one statement the mean score was negative (below than 3.00). This showed that teacher-educators have good knowledge about IT.

Table: 3 Practices of teacher-educators in the use of technology

Sr. No.	Statement	A	O	S	R	N	Mean	SD
18	I start lesson when the availability of technology material is ensured	11 8.3%	19 14.4%	29 22.0%	52 39.39%	21 15.91%	2.60	1.16
19	I use those technological tools that enhance the content of a lesson	50 37.9%	66 50.0%	14 10.6%	2 1.5%	0 0.0%	4.24	0.70
20	I help my students to find information & related knowledge for learning with the help of technology	56 42.4%	49 37.1%	23 17.4%	4 3.0%	0 0.0%	4.19	0.83
21	I prepare and save my lesson plans in computer	69 52.3%	42 31.8%	18 13.6%	3 2.3%	0 0.0%	4.34	0.80
22	I teach the students to prepare lesson plans in computer	36 27.3%	33 25.0%	20 15.2%	29 22.0%	14 10.6%	3.36	1.36
23	I teach students to use computer for assessment purpose	8 6.1%	50 37.9%	16 12.1%	40 30.3%	18 13.6%	2.92	1.21
24	I deliver my lecture with the help of power-point presentations	34 25.8%	31 23.5%	19 14.4%	32 24.2%	16 12.1%	3.27	1.39
25	I develop creativity in students with the help of technology	20 15.2%	30 22.7%	38 28.8%	25 18.9%	19 14.4%	3.05	1.26
26	I use smart board during my lecture	8 6.1%	50 37.9%	16 12.1%	40 30.3%	18 13.6%	2.92	1.21
27	I use innovative teaching strategies in instruction with the help of technology	33 25.0%	50 37.9%	35 26.5%	7 5.3%	7 5.3%	3.72	1.06

In above table the practices of teacher-educators about technology use in classroom teaching & learning was observed. In three statements the mean scores were highly positive (above than 4.00) and in four statements the mean scores were positive (above than 3.00) while in three statement the mean score was negative (below than 3.00). This showed that teacher-educators were in good practice regarding technological use in classroom teaching & learning.

Table: 4 Responses of teacher-educators regarding the problems in the use of technology

Sr. No.	Statement	A	O	S	R	N	Mean	SD

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28	My students submit their assignments by email	51 38.6%	58 43.9%	22 16.7%	1 0.76%	0 0%	4.20	0.74
29	Lack of information about nature and quality of educational software, is a serious hurdle in the integration of technology	65 49.2%	44 33.3%	20 15.2%	2 1.5%	1 0.8%	4.29	0.83
30	My students feel difficulty in the use of innovative technology	58 43.9%	45 34.1%	23 17.4%	5 3.8%	1 0.8%	4.17	0.90
31	Teachers are given facilities to teach with the help of innovative technologies	4 3.0%	17 12.9%	17 12.9%	49 37.1%	45 34.1%	2.14	1.11
32	My classroom environment is connected to internet	25 18.9%	28 21.2%	24 18.2%	37 28.0%	18 13.6%	3.04	1.34
33	Teachers are provided with technical support if they face difficulty	18 13.6%	33 25.0%	27 20.5%	32 24.2%	22 16.7%	2.95	1.30
34	Computers in my institution are out-dated	35 26.5%	43 32.6%	24 18.2%	24 18.2%	6 4.5%	3.58	1.19
35	In my institution internet facility is easily accessible to me	22 16.7%	33 25.0%	28 21.2%	32 24.2%	17 12.9%	3.08	1.29

In above table the problems of teacher-educators in use of technology in classroom teaching & learning were observed. In three statements the mean scores were highly positive (above than 4.00) and in three statements the mean scores were positive (above than 3.00) while in two statement the mean score was negative (below than 3.00). This showed that teacher-educators were having little problems in technological use in teaching & learning.

Table: 5 Correlation between Perception and Practices

	Perceptions Scores	Practices Scores
Perceptions Scores	1	0.318** (0.000)
Practices Scores	0.318** (0.000)	1

The value of Coefficient of correlation between Perception and Practices Scores was computed by using Product-Moment Method through SPSS. The value of "r" was found to be 0.318, and it described that the relationship between Teacher-educators' Perception and Practices was positive though low. From above calculation it was inferred that teacher-educators have perception and they do practices of technology in classroom instruction.

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Qualitative analysis

Table: 6 Contribution of technology to improve teaching learning process

Words	Length	Frequency	Percentage (%)
Supportive	10	8	30.8
Major	5	7	26.9
Main	4	5	19.2
Contributive	12	2	7.7
Important	9	2	7.7
Primary	7	2	7.7

The above table of frequencies and percentages showed that approximately (31%) responses of the chairpersons of Education Departments reported that technology has a supportive role to improve teaching learning process and (27%) responses of chairpersons reported that technology has a major role to improve teaching learning process. Some other chairpersons talked about main role, important role and primary role. To sum up, majority of the chairpersons were of the view that technology contributes a lot to improve teaching learning process.

Table: 7 Real position of technology use in classrooms of Education Department

Words	Length	Frequency	Percentage (%)
Satisfactory	12	4	30.8
High	4	3	23.1
Higher	6	2	15.4
Least	5	2	15.4
Moderate	8	2	15.4

The above table of frequencies and percentages showed that about (30%) responses of the chairpersons of Education Departments reported technological use in classroom of their department was at satisfactory level and (23%) responses of chairpersons reported that the technological use in classroom of their department was very high. To sum up, majority of the chairpersons were of the view that more or less there is a trend of technological use in their classrooms.

Table: 8 Availability of funds to purchase technology items for classroom use

Words	Length	Frequency	Percentage (%)
Limited	7	7	41.2
Moderate	8	3	17.7
Drawback	8	2	11.8
Unavailable	11	2	11.8

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Higher	6	1	5.9

The above table of frequencies and percentages showed that about (41%) responses of the chairpersons of Education Departments reported that limited funds were available to purchase technology item for classroom use. While other (18%) responses of chairpersons were that funds are available but moderate. Some said funds are not available. To sum up, majority of the chairpersons were of the view that limited funds were available to purchase technology item for classroom use.

Table: 9 Some changes in department for effective use of technology in Education

Words	Length	Frequency	Percentage (%)
Infrastructure	14	8	50.0%
Training	8	6	37.5%
encouragement	13	1	6.3%
Resources	9	1	6.3%

The above table of frequencies and percentages showed that about (50.0%) responses of chairpersons showed that infra-structure is needed for the implementation of technology items for classroom use while (37.5%) responded that trainings are needed for the implementation of technology. Some chairpersons talked about the resources are needed. To sum up, majority of the chairpersons were of the view that infra-structure is needed for the implementation of technology in classroom instruction.

Table: 10 Some practicable remedies for the improvement of technology use in teaching-learning process

Words	Length	Frequency	Percentage (%)
Resources	9	10	31.3
Training	8	10	31.3
Infrastructure	14	5	15.6
Network	7	5	15.6
Attitude	8	2	6.3

The above table of frequencies and percentages showed that about (31%) responses of the chairpersons of Education Departments reported resources and training must be provided to teacher-educators to use technology item in classroom instruction. While other (16%) chairpersons gave the views that infra-structure and internet must be provided. Some said that attitude of teacher-educators must be improved towards the use of technology in classroom teaching-learning process.

Findings

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Overall the perception of teacher-educators was found positive in technological use in classroom instruction. In all ten statements mean scores were highly positive (above than 4.00). Knowledge about IT of teacher-educators was found positive. In six statements the mean scores were (above than 3.00); and only in one statement the mean score was negative (below than 3.00). The Practices of teacher-educators regarding technological use in teaching & learning were found positive. In seven statements the mean scores were positive (above than 3.00) while in three statement the mean score was negative (below than 3.00). Some problems are found in technological use in classroom instruction. In six statements the mean scores were positive (above than 3.00) while in two statement the mean score was negative (below than 3.00). The value of "r" was found to be 0.31 & it described that the relationship between Teacher-educators' Perception and Practices was positive though low. From the interview protocol it was found that (31%) responses of the chairpersons of Education Departments reported that technology has a supportive role to improve teaching learning process. About (30%) responses of the chairpersons of DOE reported that technological use in the classroom of their department was at satisfactory level. About (41%) responses of the chairpersons of DOE reported that limited funds were available to purchase technology item for classroom use. About (50.0%) responses of chairpersons showed that infra-structure is needed for the implementation of technology items for classroom use and about (31%) responses of the chairpersons of DOE reported resources and training must be provided to teacher-educators to use technology item in classroom instruction.

Conclusion

On the basis of findings of quantitative and qualitative data analyses, following conclusions were drawn. From the findings of questionnaire, it was concluded that the overall perception of teacher-educators was found positive about technological use in classroom instruction. As for as the practices of teacher-educators were concerned regarding the use of technology during classroom instructions the present study revealed that overall practices of teacher-educators was found positive about technological use in classroom instruction. The results of the study revealed that the value of Coefficient of correlation was found positive which described that there is the relationship b/w teacher-educators' Perception & Practices. So, it was found that teacher-educators have perception and they do practices about technological use during instruction. It was concluded from interview protocol that chairpersons were also of the view that technology has a supportive role to improve teaching

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learning process. It was concluded that chairpersons of DOE provide assistance and training to tackle the teacher-educators who showed reluctance in technological use during instruction. It was also concluded from the responses of the chairpersons of DOE that limited funds were available to purchase technology item for classroom use. The chairpersons reported that maximum technical support is provided to teacher-educators when they face any difficulty in the use of technology items. Further they reported that infra-structure is needed for the implementation of technology items for classroom use.

Discussion

From the findings of the study it was concluded that teacher-educators and chairpersons' perceptions about technological integration in teacher-education program was above average and bulk of the teacher-educators agreed that they use technology in classroom instruction. Results of this present study are well-matched with the prior studies results that teachers displayed their positive behavior about the technological use in classrooms instruction (Lau & Sim, 2008). These results are also compatible with the research of Macho (2005) which suggested that the technology use in education enhance students' learning. The results of the present study highlighted that there is a positive correlation between the perception and practices of teacher-educators in the use of technology during classroom instruction. This finding is also well matched with the study of Yuen and Ma (2008) who found a positive link between teachers' perception and self- efficacy of computer and teachers use of technology. The results of this research study indicated that good facilities and infra structure is required to incorporate technology in classrooms. This result supports the views of Grant (2004) that maximum facilities are required to implement technology in classrooms. These findings also support the Fakeye's (2010) views that lack of good infrastructure is main issue for developing countries like Pakistan to implement technology and it will take large funding and extensive time to improve.

Recommendations of the study

1- It is recommended that funds should be allocated to purchase technology items for classroom teaching learning process and technical help should be provided by the department at the time of difficultyduring classroom instruction.

2- Training to teacher-educators regarding the use of technology should be provided by the department and more seminars and workshops should be conducted to train teacher-educatorsabout the use of technology.

3- Proper infra-structure should be provided by university for the implementation

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of technology items for classroom use and internet facility should be provided in classrooms to teacher-educators andstudents.

4- Attitude of teacher-educators should be developed towards the use of technology integration in classroom.

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