AVAILABILITY OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) RESOURCES IN UNIVERSITIES OF KHYBER PAKHTUNKHWA

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ABSTRACT
Information and communication technology resources play a very significant role in producing highly professional staff for various organizations of a country. The usage of ICT resources is very necessary for effective teaching-learning process. The use of ICT is crucial both for students and teachers. The purpose of the study was to explore the availability of Information and Communication Technology resources in universities of Khyber Pakhtunkhwa. The population of the study consisted of all public sector universities of Khyber Pakhtunkhwa. The researcher selected three public sector universities using convenient sampling technique. Six teaching departments with ratio of three social sciences and three natural sciences departments were selected through simple random sampling technique. Observational checklist was used for data collection. The researcher personally administered the checklist. Percentage was used for data analysis. Both the natural and social sciences departments are not equipped with the ICT resources. This is concluded that universities of Khyber Pakhtunkhwa are lacking with Information and Communication resources. Therefore, it is recommended that ICT resources may be provided to higher education institutions to bring the students capable and compete with modern world of science and technology.
Keywords: ICT, Availability, Hardware, Software, Connectivity, Universities.

INTRODUCTION

Information and communication technology (ICT) has achieved great significance in the modern age of globalization, and without any doubt, Information and communication Technology is the only driving force behind globalization. It has changed the every form of life and improved competition on world level. Scientific and Technological awareness is spreading at an enormous speed that is why 21st century is often called as the age of information and communication technology. World's knowledge is rapidly reshaping itself with the changing of time.

E-learning formally or non-formally works wonderfully higher education —the Internet whether wholly or in part, plays its role for course delivery, interaction and/or facilitation. Similar is the case of Web-based learning, which is a subset of e-learning called as internet learning such as Internet Explorer.

Information and communication technology (ICTs) have been playing a very significant role in producing highly professional teaching staff at large. The usage of IT is crucial both for the students and the teachers.

Apart from teacher's development, ICTs also enhances the professionalism of administrators as well. National Education Policy 1998-2010 (1998) has emphasized the integration of ICTs in education in these words, "Universities requires to focus on information technology and should use

its massive latitude for incipient teaching learning resources for the improvement of quality of education as well as linking themselves with scientists and researchers in other spheres of other world. Information technology infrastructure and its network will make our educational setup standardize and will bring our higher education on the world map".

Teachers communicate learning to students through mutual interaction. They use different ways for teaching learning process. They adjust themselves with the learning environment.

Individualized learning as well as collaborative learning is supported by them as numerous learners and teachers can interact in a shared environment. Pedagogical teachers competent of a wide range of instructionally effective interactions with students.

Technology can improve the quality of education. It has the capability of promotion and encouragement to the transformation of education from a teacher to a student. For example;

• To proliferate the capability, competency and outcomes focused on curricula
• To move towards problem-based learning
• To Increased use of the Web as an information source.

The ICT play its role in educational system as a catalyst for change. It encourages and support individual learning. "The students who use ICTs for their learning become engrossed in the progression of teach thus the number students who use computers as information sources and cognitive tools increases thus the effect of the technology on students learning enhances (Reeves and Jonassen, 1996).

Theories of learning and ICTs making a very close relation. In the past, the traditional methods were believed suitable to achieve learning consequences. Such methodologies were teachers centered approaches. Only content based instruction was taken into consideration. Modern methodologies of teaching and learning are based on active participation of both the students and teachers.

According to Duffy and Cunningham (1996), the conventional process of teaching has circled around teachers planning and leading students through a series of instructional sequences to achieve desired learning results. Naturally these forms of teaching have revolved around the planned transmission of knowledge followed by some forms of interaction with the content. Modern learning theory is based on the opinion that learning is an active procedure of constructing knowledge rather than acquiring knowledge. Instruction is the process by which this knowledge construction is supported rather than a process of knowledge transmission.

The desire to attain higher education has made persistent the whole society. In addition, the progress in ICTs has made quality education reachable.

Many higher education institutions (HEIs) are using ICTs to develop course materials, deliver and share the course content, lectures and presentations; facilitate communication among lecturers and students; conduct research; and provide administrative and management services. However, information on how ICT has been, and can be, used to enhance the design, delivery and management of higher education programmers in the Asia-Pacific region is not readily available (Berge, 1998; Barron, 1998).

Mostly education is considered as a tool for poverty elimination. It is the only way to uplift societies economically. As suggested

by many researchers that the role of higher education institutes (HEIs) within the context of knowledge-based economies and globalization is to give individuals the ability to transform information into socially beneficial knowledge, skills, and values; modernize societies and improve the standard of living and prepare and produce a skilled workforce (Masood, 2010; Kong and Li, 2009; Shaikh, 2009). Amjad (2006) defines a knowledge-based economy as one that bases its growth not on increasing capital or land or labor inputs, but on knowledge. The emergence of ICT has led to the emergence of knowledge societies. Now, these societies enhance the development of knowledge economies (Binghimlas, 2009; Dighe et al., 2009; Allen, 2009; Bhattacharya, and Sharma, 2007). These ICT-driven knowledge societies necessitate a skillful workforce in the use of ICT, as well as government support, transparent and autonomous institutions, developmental attitudes, and a sound ICT infrastructure.

In the light of the above discussion, the researcher come to know that Information and Communication Technology is an essential part of education and Mass Media studies and it has a vivid use and impact all over the world. For a developing country like Pakistan, ICT's importance cannot be overlooked to cater to the need of the present age of communication and information technology.

OBJECTIVES OF THE STUDY

Following were the objectives of the study:

1. To investigate the availability of Hardware resources in Natural and social sciences department in the universities of Khyber Pukhtunkhwa.
2. To investigate the availability of Software resources in Natural and social sciences departments in the universities of Khyber Pukhtunkhwa.
3. To investigate the availability of connectivity resources in natural and social sciences departments in the universities of Khyber Pukhtunkhwa.

RESEARCH QUESTIONS

This study was guided with the following research questions:

1. Is adequate facility of Hardware resources available in Natural and Social sciences departments in the universities of Khyber Pakhtunkhwa?
2. Is appropriate facility of Software resources available in Natural and Social sciences departments in the universities of Khyber Pakhtunkhwa?
3. Is appropriate facility of connectivity resources available in Natural and Social sciences departments in the universities of Khyber Pakhtunkhwa?

RESEARCH METHODOLOGY

The study was descriptive in nature, therefore the researcher used survey method using observational check list as an instrument. The researcher personally visited all the sampled universities and observed the ICT resources. Population of the study comprised all public sector universities of Khyber Pakhtunkhwa. The researcher selected three universities using convenient sampling technique. The researcher selected six departments (three Natural and three Social sciences) from each sampled university using Basket technique of simple random sampling method. Percentage was used as statistical tool for data analysis.

RESULTS

To get out results from the collected data, it was entered in to SPSS-16. Simple percentage was used as statistical tool for the analysis of data.

Table 1: Is adequate facility of Hardware resources available in Natural and Social sciences departments?

ICT Resources	Nature of department	Yes				No	
		Operational		Non Operational			
		N	%	N	%	N	%
Computer	N/science	6	50	_	_	_	_
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_
Multimedia	N/science	6	50				
	S/science	6	50				
	Total	12	100				
Magnetic board	N/science	_	_	_	_	6	50
	S/science	_		_	_	6	50
	Total	_	_	_	_	12	100
Google maps	N/science	6	50	_	_	6	
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_
Television	N/science					6	50
	S/science	6	50				
	Total	6	50			6	50
Radio	N/science					6	50
	S/science					6	50
	Total					12	100
Videos	N/science	6	50				
	S/science	6	50				
	Total	12	100				
White Board	N/science	6	50				
	S/science	6	50				
	Total	12	100				
Interactive white Boards	N/science					6	50
	S/science	3	25			3	25
	Total	3	25			9	75
DVD player	N/science	2	17	4	33		
	S/science	6	50				
	Total	8	67	4	33		
Tape player	N/science					6	50
	S/science	3	25			3	25
	Total	3	25			9	75

Table 1 shows that computer facility is available in both the natural and Social sciences departments. All the computers are in function; similarly Multimedia facility is also available to the students in their respective departments and uses them properly. Television facility is not available in Natural Sciences departments while all six departments of social sciences are well equipped with Television facility and are operating properly. Radio facility is not available in both natural and social sciences departments. The data shows that Magnetic Boards facility is available in the institutions of higher education. Both the natural and Social science departments have the Google Maps facility in their respective departments and are in operational form.

The table also indicates that both the Natural and Social Sciences departments have videos as well as white board facility in their respective departments and are functional. Moreover the facility of interactive white boards is not available in Natural Sciences departments while half of the Social Sciences departments have also missing the facility of interactive white boards. Over all 75% of both the departments do not have the facility of Interactive white Boards.

The Table also reflects that the facility of DVD Players is available in natural science departments in which 33% are in non-operational conditions. While all of social sciences departments have the facility of DVD players and are in operational condition. Over all 67% of both departments have the facility of DVD players and are operating properly.

Moreover the facility of Tape player is not available in natural science departments while half 25% of social sciences departments have the facility of Tape Players and use them regularly. while 3 departments out of six do not have the said facility.

Table 2: Is appropriate facility of Software resources available in Natural and Social sciences departments?

ICT Resources	Nature of department	Yes				No	
		Operational		Non Operational			
		N	%	N	%	N	%
Endnote	N/science	6	50	_	_	_	_
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_
SPSS	N/science	6	50	_	_	_	_
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_
NVIVO	N/science					6	50
	S/science			6	50	_	_
	Total			6	50	6	50
Registered Anti-Virus	N/science					6	50
	S/science					6	50
	Total					12	100

Table 2 shows that both the Natural and Social Sciences departments have the facility of Endnote as well as SPSS (statistical package for social sciences) and

the students use them properly for references and for data analysis respectively in their research projects. The table also shows that the Natural sciences departments have not the facility of NVIVO software while the social sciences departments have the facility of NVIVO software but not in operation for the analysis of data in qualitative research. Moreover both the Natural and Social sciences departments have not the facility of Register Antivirus software.

Table 3: Is appropriate facility of connectivity resources available in Natural and Social sciences departments?

ICT Resources	Nature of department	Yes				No	
		Operational		Non Operational			
		N	%	N	%	N	%
Internet facility	N/science	6	50	_	_	_	_
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_
Intranet facility	N/science	6	50	_	_	_	_
	S/science	6	50	_	_	_	_
	Total	12	100	_	_	_	_

Table 3 shows that both the natural and Social science departments have the Internet as well as intranet facilities in their respective departments and are operational.

CONCLUSIONS

On the basis of findings the study the researcher concludes that:

1. Television, Radio, Tape player & Video are essential for imparting education to the students in the institutions of higher education.. From the findings of the study, it was concluded that these facilities are not available in both Natural & Social sciences departments.
2. It is also concluded that the facility of interactive white Board is not available in both natural and social sciences departments while the DVD facility is available but the students do not use them properly.
3. Universities are research based institutions where students and scholars engage in research work and they use software for their research projects. From the findings of the study, it was concluded that the facility of NVIVO software is available in social sciences departments but they are unable to use them properly. Moreover the facility of Registered Anti Virus is not available in both Natural as well as in social sciences departments.
4.

RECOMMENDATIONS

On the basis of conclusions, the researcher recommends that:

1. For uplifting the quality of Higher education and preparing individuals to compete the challenges of the modern world of science and Technology, this is only possible when we have to strengthen our higher education institutions through the use of ICT resources. Therefore the researcher recommends that government may take steps in providing adequate hard ware facilities regarding TV,

Radio, DVD and interactive white Boards that will facilitate the students in achieving the horizons of excellence.

2. As the findings of the study reveal that the facility of NVIVO software is available for the students of social science but they do not use them properly. Therefore it is recommended that universities may take steps to ensure availability of experts for utilization of various software and make registration with different data bases to facilitate students in searching materials as well as for the analysis of data.

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