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Role of Educational Technology in Public and Private Institutes at Secondary School Level in District Karak (Khyber Pukhtunkhwa) Pakistan

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Abstract

Educational technology plays a fundamental role in enhancing teaching learning process. It has facilitated instructional process and made it more productive, dynamic and effective. Therefore the study was conducted to explore the role of educational technology in public and private institutes in district Karak (Khyber Pukhtunkhwa) Pakistan in comparative perspectives. The main objectives of the study were: to compare the availability of educational technology in public and private institutions at secondary level; to compare the usability of educational technology in public and private institutions at secondary level and to know the usefulness of

educational technology in public and private institutions at secondary level. All the heads, teachers and students in public and private secondary schools in district Karak constituted the population of the study. In order to ensure adequate sample, 60 heads, 180 teachers and 600 students serving and studying in public and private sectors at secondary school level in District Karak were selected randomly. The study was delimited to the selected male public and private secondary schools. The study was also delimited to those technologies which are commonly used. The study was descriptive in nature therefore, the researchers decided to develop questionnaire for the collection of data. A single questionnaire was developed for the whole sample. Pilot testing was conducted to know the weakness, misconceptions and ambiguities of the questions. After conduction of pilot testing, the questionnaire was revised and then its final version was prepared in the light of valuable suggestions of the heads, teachers and students. The researchers personally visited to the respective sample and distributed the questionnaires among the heads, teachers and students in public and private secondary schools. In this way data was collected. After the collection of data, the data was organized, tabulated and analyzed. The researchers decided to apply chi-square for the statistical treatment of the data. Therefore, chi square was applied to compare the responses of the sample. After analysis of the data, it was concluded that educational technologies are not available in both sectors. Some technologies are available in minor amount but these technologies are not used in both public and private sectors.

Key Words:
Educational Technology, Availability of Educational Technology, Usability of Educational Technology, Importance of Educational Technology

INTRODUCTION

Education means to bring about desirable changes in the behavior of an individual according to the needs and requirements of its concerned society. If a teacher succeeds in framing a sound base and making the entire concept clear to a student then it is justified to say that in future the student will be able cope with complex and difficult things easily. Therefore, it depends upon quality education and effective instructional process. Educational technologies play a crucial and significant role in this connection. Educational Technologies are those materials, procedures, ideas, organizations, devices, instruments or machines that facilitate instructional process and makes it more effective, interesting, successful, and unforgettable (Suleman, 2011).

The word educational technology was familiarized in 1967 when National Council for Educational Technology was established in United Kingdom. The United Kingdom Association for programmed learning immediately added “Educational technology” to its heading in 1968. In the USA it was the department of Audio-Visual Instruction of National Education Association for Educational Commission and technology in 1970. The term “System” appeared quite regularly in the early writings on Educational Technology. But it did not become extensively adopted immediately as a central conceptual framework. Educational Technology is permanently established now as a field of study. Instructional development, educational communication and educational resources are the names, which explain the field (Venkataiah, 1996). Educational technology is complex, comprehensive and integrated process, which is involved in many things like, people, ideas, procedures, devices and organizations which are design to evaluate problems. It is also composed of other different

processes like, devising, implementing, evaluating and managing solutions to those problems that involve in all aspects of human learning.

The paper in hand is written to compare the role of educational technology in private and public sectors at secondary level in district Karak. It is beneficial for the teachers teaching in private and public institutions because it has explored the usefulness of technology in teaching learning process and therefore, it is expected that teachers will utilize the available technologies for the instructional process. It is also helpful for the government to asses the status of educational technology regarding availability and usability of technologies in private and public institutions at secondary level and it is expected that government will ensure the availability of educational technology in public and private institutions. That is why the researchers are hopeful that this research paper will be highly beneficial and will bring a constructive revolution in both public and private institutions at secondary level regarding availability and usability of educational technology.

REVIEW OF RELATED LITERATURE

Educational technology is complex, comprehensive and integrated process, which is involved in many things like, people, ideas, procedures, devices and organizations which are design to evaluate problems. It is also composed of other different processes like, devising, implementing, evaluating and managing solutions to those problems that involve in all aspects of human learning (AECT, 1977). Educational technology is the combination of those instructional, developmental, managerial and other technologies which are used particularly to find out the solution of educational problems (Tomei, 2002). It is a system in education which is the mixture of variety of things like, machines, media, materials, men and methods working together to attain and fulfill specific educational objectives (Sharma & Sharma, 2006. p.28). Educational Technology is the systematic use of scientific or other organized knowledge to practical tasks (Galbraith, 1967). Educational Technology is an area of study, which facilitate and improve human learning through systematic identification, organization, development and utilization of learning resources and through the management of processes, but it is not limited to these processes but it also consists of those people who performs these processes (Sharma & Sharma, 2006. p.31).

Educational technology refers to the utilization of technology to develop and improve the education system. It is a systematic process used to design instruction or training for the improvement of the performance. Sometimes educational technology is also known as instructional technology or learning technology. Educational Technology is a systematic process used to design instruction or training in order to improve the performance (Encyclopedia of Educational Technology). Educational technology means to utilize a variety of techniques and procedures to design a learning experience systematically (Venkataiah, 1996). It is reality that educational technology plays a helping role to explain complicated and difficult concepts, to stimulate individual and group activities, to promote a collective critical awareness, to change the attitudes, to implement a new structure or organization of definite subjects and to encourage originality and creativeness (Mohanty, 1992).

Keeping in view th above discussion, it is concluded that educatioal technolgies composed of all those things which are involved in facilitatitng instructional process and make it more effective, successful, interested and producitve.

Successful integration of technology mostly depends upon its availability. Research studies have shown that non-availability of technologies is the main barrier in technology integration in classroom. Mumtaz (2000) concluded that non-availability of technology was the main factor reducing the utilization of technology by the teachers in their instructional process. Research studies show that due to non-availability and inaccessibility of instructional resources in school, the students and teachers do not use them (Veen, 1993; Byard, 1995, Wild, 1996). That is why it can be rightly said that availability of educational technology is the fundamental and crucial factor for the successful integration of educational technologies during instructional process. Hope (1997) stated repeatedly that exploitation of technology in an environment needs its availability to be ensured first. He further stated that accessibility to hardware is the obstruction in the way of successful integration of technology.

Teachers play a vital and crucial role in integrating technology in teaching learning process and therefore, it is imperative for teachers to have experiences and skills to use technology effectively. Smarkola (2008) noted that those teachers are very important who are competent and expert in utilizing and managing educational technology. The student teachers should be trained for the effective utilization of educational technology in the initial teacher education programme. Ring staff & Kelley (2002) concluded from research studies that teachers who receive formal training for the effective utilization of technology for instructional process, they have succeeded to bring remarkable and significant improvements in the student's achievement.

Characteristics of Educational Technology

According to Sharma & Sharma (2006, p.41), characteristics of the educational technology are explained as under:

1. It uses scientific principles to the problems of education.
2. It emphasizes on the development of the methods, procedures and techniques for the successful and effective instructional process.
3. It puts stress on the designing and measuring instruments and tools for the assessment of instructional outcomes.
4. It makes the instructional process more facilitated, productive and effective by media, methods, and techniques and by controlling classroom environment.
5. It involves in three aspects in education e.g. input, teaching learning process and output.
6. It consists of applications of electronic media in education and systems approach.
7. It plays a crucial role as medium of communication.
8. It is a broad and comprehensive term. It is composed of different terms e.g., teaching technology, instructional technology, micro teaching, programmed learning and system analysis etc.
9. It is not the synonyms of the Audio-Visual Aids in education but it is more broad and comprehensive term.

Objectives of Educational Technology

Educational technology has played a fundamental and crucial role in the education system. It has influenced and enhanced the teaching learning process. However, the main objectives of the educational technology in education are explained as under:

1. It helps in improving teaching learning process and makes it more effective and purposive.
2. The standard of education has been collapsed due to mass education. The application of educational technology can improve and preserve the standard of education by the use of teaching aids and other instructional materials.

3. It plays an effective role in improving the distance education or correspondence education by the utilization of technologies i.e. television, radio, tape record and other programmed instructions.
4. Teacher training institutions have failed in producing effective and competent teachers. Effective and skillful teachers can be produced by the use of educational technologies in teacher training institutions.
5. Through System Analysis, administrative problems in education can be solved logically and scientifically.
6. Educational researches have no effects on the contemporary educational problems because these researches have theoretical in nature. Educational technology has played an important role in solving classroom teaching and training problems practically and experimentally.
7. It helps in understanding the nature and structure of instructional process. To attain various educational objectives, teaching models can be developed.
8. The key problem in instructional process is to cope with individual differences in effective way. The educational technology has developed new innovative practices and strategies to ensure the solution of these problems.
9. It also helps in building up educational theories for teaching and instruction and makes scientific foundation to education (Sharma & Sharma, 2006, pp.57-58).

Usefulness of Educational Technology

According to Aggarwal (1995), educational technology has added much to the effectiveness of the teaching learning process. The important contributions of educational technology to teaching learning process are explained as under:

1. It helps in individualizing instruction by enabling individuals to use self-instructional programmes.
2. It plays a vital role in the enhancement of the instructional process. It enables us to use various enriched and motivating programmes through different media.
3. It helps in using a variety of useful programmes designed and developed for a massive number of students. These programmes are used through television, computers etc.
4. It has played a fundamental and crucial role in equalizing educational opportunities without taking into consideration the social, economic and geographical status of the students.
5. The learners in service personnel and vocational works are kept in touch with the latest material through television lessons and self-instructional programmed material, which is sent to them.

STATEMENT OF THE PROBLEM

The study was conducted to explore the "***Role of Educational Technology in Public and Private Institutes at Secondary School Level in District Karak (Khyber Pukhtunkhwa) Pakistan"*** in comparative perspectives.

OBJECTIVES OF THE STUDY

The main objectives of the study were:

(a) to compare the availability of educational technology in public and private institutions at secondary level;
(b) to compare the usability of educational technology in public and private institutions at secondary level and

(c) to know the usefulness of educational technology in public and private institutions at secondary level.

METHODOLOGY

1. Population

All the heads, teachers and students in public and private institutions at secondary school level in District Karak constituted the population of the study.

2. Sample

In order to ensure adequate sample, 60 heads, 180 secondary school teachers and 600 students serving and studying in public and private institutions at secondary school level in District Karak were selected randomly. The detail of the sample is given as under:

SECTORS	No. of Selected Schools		Heads	Teachers	Students	TOTAL
	Urban	Rural				
Public	10	20	30	90	300	**420**
Private	10	20	30	90	300	**420**
TOTAL	**20**	**40**	**60**	**180**	**600**	**840**

3. Delimitation of the Study

The study was delimited to the selected male public and private secondary schools. The study was further delimited to the selected public and private secondary schools. Educational technology is broad subject and it was not possible to cover all the educational technology in this research study. Therefore the researchers concentrated only on those technologies which are commonly used in our institutions. These were; computers, multimedia, overhead projectors, educational televisions, radios, DVD players, white boards, charts, models, educational software and videos.

4. Research Instrument

The study was descriptive in nature therefore, the researchers decided to develop questionnaire for the collection of data. A single questionnaire was developed for the whole sample.

5. Pilot Testing

Pilot testing was conducted to know the weakness, misconceptions and ambiguities of the questions in questionnaire. After conduction of pilot testing, the questionnaire was revised and then its final version was prepared in the light of valuable suggestions of heads, teachers and students of the both sectors.

6. Collection of Data

The researchers personally visited to the respective sample and distributed the questionnaires among the heads, teachers and students in public and private secondary schools. In this way data was collected.

7. Analysis of Data

After the collection of data, the data was organized, tabulated and analyzed. The researchers decided to apply chi-square for the statistical treatment of the data. Therefore, chi square was applied to compare the data. The following formulae were used:

For Yes/No Responses

For Yes/No responses, the following system and formula was used:

Educational Sector	Yes	No	TOTAL	X^2
Public	A	B	A+B	
Private	C	D	C+D	
TOTAL	**A+C**	**B+D**	**A+B+C+D=N**	

$$X^2 = \frac{N(AD - BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

Where

A and C are the number of responses under **Yes**

B and D are the number of responses under **No**

N is the total number of frequencies/responses

For the Analysis of Usability and Usefulness of Educational Technology on Five Likert's Scale:

For the analysis of usability and usefulness of educational technology in teaching learning process was analyzed by the help of the following formula:

$$X^2 = \sum \frac{\left[(f_o - f_e)^2\right]}{f_e}$$

Where X^2 = Chi-square

$\sum$ = Sum of

$\mathbf{f_o}$ = Frequency of occurrence of observed

$\mathbf{f_e}$ = Expected frequency

SIGNIFICANCE OF THE STUDY

The paper in hand is beneficial for the teachers teaching in private and public institutions because it has explored the usefulness of technology in teaching learning process and therefore, it is expected that teachers will utilize the available technologies for the instructional process. It is also helpful for the government to know the current status of educational technology regarding availability and usability in private and public sector at secondary level and it is expected that government will ensure the availability of educational technology in public and private institutions. That is why the researchers are hopeful that this paper will be highly beneficial and will bring constructive revolution in both public and private sectors at secondary level regarding availability and usability of educational technology. In this way, teaching learning process at secondary level in both sectors will be enhanced and effective.

RESULTS AND DISCUSSIONS

The study was descriptive in nature therefore, the researchers decided to develop questionnaire for the collection of data. A single questionnaire was developed for the whole sample. Pilot testing was conducted to know the weakness, misconceptions and ambiguities of the questions in questionnaire. After conduction of pilot testing, the questionnaire was revised and then its final version was prepared in the light of valuable suggestions of heads, teachers

and students of the both sectors. The researchers personally visited to the respective sample and distributed the questionnaires among the heads, teachers and students in public and private secondary schools. In this way data was collected. After the collection of data, the data was organized, tabulated and analyzed. The researchers decided to apply chi-square for the statistical treatment of the data. Therefore, chi square was applied to compare the data. The whole process of analysis is explained as under:

Availability of Educational Technology

Table 01: Responses of the respondents about the availability of Computers

SECTORS	Yes	No	TOTAL	X^2
Public	037	383	**420**	**109.42***
Private	167	253	**420**	
TOTAL	**204**	**636**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 01 illustrates that the calculated value of X^2 was found to be 109.42 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that computers are available in private schools to some extent but not available in the public sector.

Table 02: Responses of the respondents about the availability of Multimedia

SECTORS	Yes	No	TOTAL	X^2
Public	022	398	**420**	**02.42**
Private	013	407	**420**	
TOTAL	**035**	**805**	**840**	

***Not Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 02 illustrates that the calculated value of X^2 was found to be 02.42 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that multimedia is not available in both public and private sectors.

Table 03: Responses of the respondents about the availability of Overhead Projectors

SECTORS	Yes	No	TOTAL	X^2
Public	112	308	**420**	**53.64***
Private	032	388	**420**	
TOTAL	**144**	**696**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 03 illustrates that the calculated value of X^2 was found to be 53.64 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that overhead projectors are available to some extent in public sector but not available in private sector.

Table 04: Responses of the respondents about the availability of Educational Televisions

SECTORS	Yes	No	TOTAL	X^2
Public	024	396	**420**	**00.90**
Private	018	402	**420**	

TOTAL	**042**	**798**	**840**	

***Not Significant df =1 table value of X^2 at 0.05 level = 03.841**

Table 04 illustrates that the calculated value of X^2 was found to be 00.90 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that educational televisions are not available both in public and private institutions.

Table 05: Responses of the respondents about the availability of Radios

SECTORS	Yes	No	TOTAL	X^2
Public	022	398	**420**	**01.39**
Private	015	405	**420**	
TOTAL	**037**	**803**	**840**	

***Not Significant df =1 table value of X^2 at 0.05 level = 03.841**

Table 05 illustrates that the calculated value of X^2 was found to be 01.39 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that radios are not available in both public and private institutions.

Table 06: Responses of the respondents about the availability of Whiteboard

SECTORS	Yes	No	TOTAL	X^2
Public	037	383	**420**	**338.24***
Private	298	122	**420**	
TOTAL	**335**	**505**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 06 illustrates that the calculated value of X^2 was found to be 338.24 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that whiteboards are not available in public institutions but available in private institutions.

Table 07: Responses of the respondents about the availability of DVD Players

SECTORS	Yes	No	TOTAL	X^2
Public	026	394	**420**	**00.10**
Private	023	397	**420**	
TOTAL	**049**	**791**	**840**	

***Not Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 07 illustrates that the calculated value of X^2 was found to be 00.10 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that DVD players are not available in both private and public institutions.

Table 08: Responses of the respondents about the availability of Charts

SECTORS	Yes	No	TOTAL	X^2
Public	287	133	**420**	**139.47***
Private	116	304	**420**	
TOTAL	**403**	**437**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 08 illustrates that the calculated value of X^2 was found to be 139.47 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that charts are available in public sector but not available in private sector.

Table 09: Responses of the respondents about the availability of Models

SECTORS	Yes	No	TOTAL	X^2
Public	271	149	**420**	**161.02***
Private	089	331	**420**	
TOTAL	**360**	**480**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level =03.841**

Table 09 illustrates that the calculated value of X^2 was found to be 161.02 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that models are available in public institutions but not available in private institutions.

Table 10: Responses of the respondents about the availability of Educational Software and Videos

SECTORS	Yes	No	TOTAL	X^2
Public	047	373	**420**	**112.07***
Private	184	236	**420**	
TOTAL	**234**	**609**	**840**	

***Significant df = 1 table value of X^2 at 0.05 level = 03.841**

Table 10 illustrates that the calculated value of X^2 was found to be 112.07 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that educational software and videos are not available in public institutions but available in private institutions to some extent.

Usability of Educational Technology

Table 11: Responses of the respondents about the use of Computers

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	003	005	012	024	374	**420**	**63.62***
Private	022	034	043	028	293	**420**	
TOTAL	**025**	**039**	**055**	**052**	**667**	**840**	

***Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 11 illustrates that the calculated value of X^2 was found to be 63.62 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that computers are used in private institutions to some extent but are not used in public institutions.

Table 12: Responses of the respondents about the use of Multimedia

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2

Public	003	008	017	022	370	**420**	**03.93**
Private	002	006	011	014	387	**420**	
TOTAL	**005**	**014**	**028**	**036**	**757**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 12 illustrates that the calculated value of X^2 was found to be 03.93 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that multimedia is not used in both public and private institutions.

Table 13: Responses of the respondents about the use of Overhead Projectors

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	006	012	017	019	366	**420**	**03.72**
Private	004	007	012	014	383	**420**	
TOTAL	**010**	**019**	**029**	**033**	**749**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 13 illustrates that the calculated value of X^2 was found to be 03.72 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that overhead projectors are not used in both public and private institutions.

Table 14: Responses of the respondents about the use of Educational Televisions

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	003	007	013	008	389	**420**	**00.81**
Private	002	005	011	007	395	**420**	
TOTAL	**005**	**012**	**024**	**015**	**784**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 14 illustrates that the calculated value of X^2 was found to be 00.81 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that educational televisions are not used in both public and private institutions.

Table 15: Responses of the respondents about the use of Radios

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	004	012	014	024	366	**420**	**02.26**
Private	002	009	011	019	379	**420**	
TOTAL	**006**	**019**	**025**	**043**	**745**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 15 illustrates that the calculated value of X^2 was found to be 02.26 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that radios are not used in both public and private institutions.

Table 16: Responses of the respondents about the use of Whiteboards

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	026	031	027	034	302	**420**	
Private	189	143	129	033	008	**420**	**538.17***
TOTAL	**215**	**174**	**156**	**067**	**310**	**840**	

***Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 16 illustrates that the calculated value of X^2 was found to be 538.17 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that whiteboards are used more in private institutions as compared to the public institutions.

Table 17: Responses of the respondents about the use of DVD Players

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	003	006	013	012	386	**420**	
Private	007	012	017	013	371	**420**	**04.47**
TOTAL	**010**	**018**	**030**	**025**	**757**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 17 illustrates that the calculated value of X^2 was found to be 04.47 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows DVD players are not used in both private and public institutions.

Table 18: Responses of the respondents about the use of Charts

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	065	074	036	057	188	**420**	
Private	036	059	023	064	238	**420**	**19.16***
TOTAL	**101**	**133**	**059**	**121**	**426**	**840**	

***Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 18 illustrates that the calculated value of X^2 was found to be 19.16 which is statistically significant because it is greater than the table value of X^2at 0.05 level. It shows that charts are used more in public institutions as compared to the private institutions.

Table 19: Responses of the respondents about the use of Models

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	086	123	079	063	069	**420**	

Private	032	089	054	047	198	**420**	**99.52***
TOTAL	**118**	**212**	**133**	**130**	**267**	**840**	

***Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 19 illustrates that the calculated value of X^2 was found to be 99.52 which is statistically significant because it is greater than the table value of X^2 at 0.05 level. It shows that models are used more in public institutions as compared to the private institutions.

Table 20: Responses of the respondents about the use of Educational Software and Videos

SECTOR	Always	Almost Always	About Half Time	Rarely	Never	TOTAL	X^2
Public	004	008	013	012	383	**420**	
Private	006	010	015	017	372	**420**	**01.79**
TOTAL	**010**	**018**	**025**	**029**	**755**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 20 illustrates that the calculated value of X^2 was found to be 01.79 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that educational software and videos are not used in both public and private institutions.

Usefulness of Educational Technology at Secondary Level

Table 21: Educational Technologies increase students' attention.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	269	136	007	006	002	**420**	
Private	243	162	009	004	002	**420**	**04.24**
TOTAL	**512**	**298**	**016**	**010**	**004**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 21 illustrates that the calculated value of X^2 was found to be 04.24 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of the both sectors agreed that educational technologies increase student's attention.

Table 22: Educational Technologies improve communication between teachers and students.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	243	159	012	004	002	**420**	
Private	238	164	010	005	003	**420**	**00.62**
TOTAL	**481**	**323**	**022**	**009**	**005**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 22 illustrates that the calculated value of X^2 was found to be 00.62 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of the both sectors agreed that educational technologies improve communication between teachers and students.

Table 23: Educational Technologies make complicated things easy and understandable.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	276	129	008	004	003	**420**	**02.61**
Private	259	138	012	007	004	**420**	
TOTAL	**535**	**267**	**020**	**011**	**007**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 23 illustrates that the calculated value of X^2 was found to be 02.61 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of the both sectors agreed that educational technologies make complicated things easy and understandable.

Table 24: Educational Technologies make sure the students' participation in the classroom.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	282	120	009	005	004	**420**	**03.72**
Private	258	139	012	008	003	**420**	
TOTAL	**540**	**259**	**021**	**013**	**007**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level =09.488**

Table 24 illustrates that the calculated value of X^2 was found to be 03.72 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of the both sectors agreed that educational technologies ensure the students participation in the classroom.

Table 25: Learning environment becomes effective by the application of educational technologies for the instructional process.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	236	164	012	005	003	**420**	**00.88**
Private	243	158	009	006	004	**420**	
TOTAL	**479**	**322**	**021**	**011**	**007**	**840**	

***Not Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 25 illustrates that the calculated value of X^2 was found to be 00.88 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of the both sectors agreed that learning environment becomes effective by the application of educational technologies for the instructional process.

Table 26: Teaching is more systematic by the use of educational technologies and much time can be saved with the help of educational technologies.

SECTOR	SA	A	UD	DA	SDA	TOTAL	X^2
Public	192	195	016	011	006	**420**	**04.13**
Private	213	185	013	006	003	**420**	
TOTAL	**405**	**380**	**029**	**017**	**009**	**840**	

***Significant df = 4 table value of X^2 at 0.05 level = 09.488**

Table 26 illustrates that the calculated value of X^2 was found to be 04.13 which is statistically not significant because it is less than the table value of X^2 at 0.05 level. It shows that the sample of both sectors agreed that teaching is more systematic by the use of educational technologies and much time can be saved with the help of educational technologies.

CONCLUSIONS

After analysis of data, the researchers arrived at the following conclusions:

Availability of Educational Technology

It was found that

1. In majority of the institutions both in private and public institutions, educational technologies are not available. Multimedia, Educational television, radios, and DVD players were not available in both public and private institutions.
2. Computers and educational software and videos were found to some extent in private institutions. On the other hand, in public institutions, only charts, models and overhead projectors were found to some extent.
3. In majority of the private institutions whiteboards were found available but these whiteboards were not available in public institutions. The researchers came to know at the time of collecting data that in public institutions blackboards were used instead of whiteboards.

Usability of Educational Technology

It was found that

1. Multimedia, overhead projectors, educational televisions, educational software, videos, radios, DVD players were not used in both private and public institutions.
2. Computers and whiteboards were used in private institutions to some extent. On the other hand these were not used in public institutions.
3. Only charts and models were used in public institutions to some extent witch were not used in private institutions.

Usefulness of Educational Technology

It was found that

1. Majority of the respondents responded that educational technology increases students' attention.
2. It improves communication between teachers and students.
3. It makes complicated things easy and understandable.
4. It ensures the students' participation in the classroom.

5. Learning environment becomes effective by the application of educational technologies for instructional process.
6. Teaching is more systematic by the use of educational technologies and much time can be saved with the help of educational technologies.

Summary of Conclusions

Keeping in view the above conclusions, it is concluded that educational technologies are not available in both public and private institutions. Some technologies are available in minor amount but these technologies are not used in both public and private institutions.

RECOMMENDATIONS

Keeping in view the conclusions, the researchers make some recommendations which are described as under:

1. Availability of educational technology should be ensured in both public and private institutions. The owners of the private institutions should be bound by the government to ensure the availability of educational technology.
2. Computers, radios, educational television, multimedia, overhead projectors, models, videos, educational software, pictures, flip charts, charts, diagrams, film strips, educational software, whiteboards etc should be provided to public institutions on the emergency basis. Similarly, the owners of the private institutions should also ensure the availability of these technologies.
3. Teachers serving in private institutions should be provided sound and facilitated environment for the effective integration of educational technology.
4. A special formal training programme should be introduced for the effective use of educational technology. The teachers serving in private and public institutions should be provided opportunities for refresher courses in the use of technologies.
5. All the in-service teachers serving in public and private institutions should be provided training opportunities to make them competent in using educational technology.
6. A compulsory subject regarding the preparation or utilization of educational technology should be institutionalized in teacher training programmes conducted public and private colleges, institutions or universities.
7. All the public institutions should be provided special budget by the Government for purchasing new educational technologies according to the need and demand.
8. Alternate power supply should be provided to each public and private institution for the successful integration of educational technologies. For this purpose, power generators should be provided to each institution on the emergency basis.
9. Physical and technical infrastructure should be designed for the effective use of educational technologies.
10. Educational technologies should be utilized in an effective way. A special staff should be appointed by the government to examine the utilization of educational technologies by the teachers serving in private and public institutions.
11. For the advancement of educational technologies, annual exhibitions should be arranged at district and province level and those institutions should be rewarded who exhibit locally produced educational technologies.

RECOMMENDATIONS FOR FUTURE RESEARCH STUDIES

1. It is recommended that this type of research study should be conducted in other districts and provinces.

2. It is also recommended that this type of research study should be conducted at higher secondary and tertiary level.

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