

**IMPACT OF ICT ON ACADEMIC ACHIEVEMENT OF
GOVERNMENT SECONDARY SCHOOL STUDENTS IN QUETTA
CITY (CHILTAN TOWN)**

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Abstract:

The impacts of ICT on academic achievement of students have been topic of great interest during the last two decades. Many researches have been conducted on ICT and on its impact. (Kulik, 1994; Sosin et al, 2004; Fushs & Wossman, 2004; Talley, 2005). The objective of the study was to learn and detect the impact of ICT on academic achievement of Government School Students. For this purpose 10 Government Secondary Schools, 116 participants, (teachers) & results of 100 students of the same schools were randomly selected. In order to collect the data questionnaire was developed, data was statically analyzed with correlation coefficient. The research finding brought out that ICT has significant impact on academic achievement of the students. The research outcomes and there inference have been discussed, with recommendations for future research have been provided.

Key Words: ICT (Information & Communication Technology), student, academic achievement.

Introduction:

The importance of ICT in education is undisputed globally. Recent work is about the impacts of ICT on academic achievements of Government Secondary Schools of Quetta City (Chiltan Town). Huge investment has been taken place in educational technology field with in Government Sector of Quetta City, but the progress has often been disappointing. One of the major benefits of ICT is an open access to the knowledge for the students of poor and under developed areas, like in different parts of Quetta City. But unfortunately access to these technologies is beyond the bonds of possibilities in majority of Secondary School of Quetta City.

Educational technology has changed pedagogical techniques in many ways. New discoveries & researches has made use of ICTs inevitable,

yesterday skills & outdated technologies are not meeting the needs of tomorrow's world.

In Pakistan, especially in the Balochistan, province of low literacy rate needs more access to modern technologies to meet the world challenges. Students at secondary level needs more detailed information. Woefully, in most of Government Secondary Schools in Quetta their lack access to knowledge and technologies which hinders the participation of students & teachers in the developmental process of life.

These technologies equip students for better learning & constructive use of knowledge. In majority of schools, IT is limited as a subject (ICT) only which is not much beneficial to strengthen education in increasingly digital work place. The use of modern technology has been promoted by the European Union. E- Learning plan, "to improve the quality by facilitating access to resources and services as well as remote exchange and collaboration" (Commission of the European Communities, 2001, 2).

In this scenario, a study was carried out on ICT, a way to empower both teacher and student at Government Secondary School level in Chiltan Town of Quetta district. ICT not only focuses teaching-learning process, it also impacts quality of education, academic achievements of students, accessibility of education and improve educational standards for all which is the United Nations main objective. "Education for all".

Problem of the Statement:

Recently, several research studies have emphasized the potential benefits with positive impacts of ICT.

However, Government has invested massively in ICT, the progress is still disappointing. There are many challenges that influence the implementation of technology in schools of Quetta, especially in Government Schools. Student's achievement in academics is strongly indicated by their cognitive ability; Secondary educational level is necessary for student's learning. They need more detailed knowledge at this level. In majority of schools there is lack of resources and space, absence of ICT skills along with some schools with deprivation of ICT training and maintenance of the equipments. All these barriers are hindering the way to success. Students don't show much improvement due to poor implementation of educational technologies. Keeping in view the present situation, the study was carried out to highlight the major challenges in implementing ICT in schools and potential benefits of educational technologies.

Objectives of the Study:

The objectives of the study are:-

1. To analyze the impacts of ICT on academic achievement of students at Secondary School level.
2. To find out ICT as a tool for teaching learning process can influence student's achievement.
3. To analyze the relationship between ICT and academic achievements of Secondary School students'.

Research Questions:

The following are the research questions to guide the study.

1. How does ICT impact student's academic achievement?
2. How does ICT as a tool for teaching learning process can influence student achievement at Secondary School level?
- .3. Is there any relationship between ICT and students academic achievements?

Review of Literature:

Information and Communication technology is the most significant element that has impacted every aspect of human race. Related literature has been review to understand the impact of ICT on student's academic achievement. Educational technology is a major force of change, developing potent alteration in surroundings. These Information and Communication technologies have brought valuable alternation in our functioning state, serving information, pedagogical methodologies, improved trends in learning and research. According to Daniels (2002) "ICTs have become within a very short time, one of the basic building blocks of the modern society". One of the major benefits of ICT is the revolution brought by the communication technologies in educational sector. According to Watson's (2001) "ICTs have revolutionized the way people work today and are now transforming education system".

Most researches have shown significant influence of ICTs on students outcome (Fuchs and Woessman, 2005; Talley, 2005). ICT Incorporation in teaching and learning is an important priority of academic institutes. Pakistan as a growing country has grasped ICT in academic institutions to enhance education and students' achievement at all academic levels.

According to famous study of Kulik's (1994) research studies, "students with computer based instructions scored better than those without computer. Student gains more knowledge in less time because the class became more enjoyable and interesting after the computer instructions". "Proper implementation and use of these technologies with ICT trained teacher can not only empower teachers and learners but will also transform

teaching – learning process and this transformation will result in an increased learning and high academic achievements of students at Secondary School level”.

Effective incorporation and proper utilization of technologies along with technology trained mentor. “So far, economic research has failed to provide clear results on the impacts of ICT on student’s achievement”. (Saqib Khan, Irfan Ullah Khan, Vol.5, No. 1, 2015 pp. 85-94).

Coates et al. (2004) “surveyed and found no specific difference in the result of both groups of students using with and without ICTs. Even those without ICT instructions got 15% higher marks”.

According to Leuven et al, (2004), no verification of relationship between increase educational uses of ICT in students’ performance. Never the less of all this, some obstacles related to ICT incorporation in academics can adversely affect academic achievement of students for example unavailability of resources, improper maintenance, no ICT skilled staff with absence of ICT training and uncertain Government policies in use of technologies in education.

Despite of these challenges and limitations, information and communication technologies provides good standards of education. ICT encourages new ways of learning to be explored by the students and teachers. The basic aim of this work is to analyze the impacts of information and communication technology on students’ achievement of Government Secondary School students in Quetta City. Every educational level has its importance but secondary level is the most crucial stage for the students. Student needs detail related information. Educational technologies provide more detailed and flexible learning according to the student’s mental level irrespective of time. In Europe, appropriate use of ICT in school education is considered a key factor in improving quality of educational levels. (Albert & Mercedes, Nov, 2010. pp 207). In research study of Fuchs and Woessman (2004) “presented two different hypotheses. In the first hypothesis, learning can be facilitated by the use of ICT to good results.

According to second hypothesis, the uses of ICT limitize students’ creativity and can deflect their learning. Modern researches identified the affective influence of ICT on students’ academic results at all educational levels. It is very important to transform teaching in order to integrate ICT effectively. “Teacher quality measured by teacher fixed effect, has an important impact on students achievement, (Rockoff, 2004).

Kofi Anan, (2015) the former United Nations Secretary General, points out that in order to attain the goal of Universal Primary Education by the year 2015; we must ensure that information and communication technologies (ICTs) unlock the door of education system.

According to Voogt (2003) pp 217-236, “description on the major roles, distinguished ICTs as an object for study, an aspect of a discipline or a profession, and medium of instruction”. Interesting element about ICT is it makes learning less theoretical for students and more practical to life situation. “As stated in the VI Annual Report on the development of information society in Spain (AA. VV. 2006), since the 1980s every regional authority has fostered several programs aiming at integrating ICT in society and, particularly in education (Plan Avanza 2007).

Previous studies revealed positive impacts of modern technology on improving teaching learning process and enhancing academic achievement of students. (Kulik and Kulik, 1991: Kulik, 1994: Susin et al, 2004). In Europe, utilization of ICT in education and pedagogical trainings are major priority. ICT integrated educational system leads to the democracy of education.

Methodology:

In order to discover ICT impacts of academic achievements of Government Secondary School students, a quantitative research was selected. Quantitative research is basically an inquiry in social problem. According to Matthews and Ross (2010) quantitative research methods are basically applied to the collection of data that is structured and which could be represented numerically.

Population:

All male and female SST Government Secondary School teachers and students of the same school (Chiltan Town Quetta) are the population of the study.

Sample:

Simple random sampling technique was adopted 10 Government Secondary Schools were selected in which, 116 (N = 58 male & N = 58 female) teacher participants & 100 student from the same school were selected randomly. Researcher personally approached the participants and the questionnaire was filled in the presence of the researcher.

Limitations:

In order to carry out useful research within available resources and limited time this study had a confined range. The study is limited to “ICT impacts on academic achievement of Government Secondary Schools students” in Quetta City (Chiltan Town).

It would be more compelling to broaden the research area to other towns of Quetta City as well as Private Schools.

Research Instruments:

The researcher designed the questionnaire by studying the Government Secondary School text books, current situation of Government Secondary Schools of Quetta City, and by keeping in view the importance and necessity of ICT in present education system of Balochistan.

There are 30 questions in the instrument. This instrument is used as a scale to judge the impacts of ICT on academic achievements of students and meet the objectives of the research. The instrument is 5 point Likert - Scale labeled with notations: 5 = strongly agree, 4 = agree, 3 = undecided, 2 = strongly disagree, 1 = disagree. The overall reliability (CronBach Alpha) of the instrument comes out 0.738.

Procedure:

Written authorization was acquired from education department of Balochistan to visit 10 Government Secondary Schools of Chiltan Town in Quetta City. The respondents (teachers) were met personally and concluded written detail about the purpose and aim of research was provided to them. All the schools were visited individually. The teachers independently provided with the questionnaire in the presence of the researcher. The researcher was there all the time to help in case of difficulty faced by the participants (teachers). Individually 10 schools were visited to fill the questionnaire by the teachers.

For the validity of questionnaire, the researcher got it checked by the experts in BUTIMS and the teachers presently involved with ICT. Some valuable comments were given by experts and concern teachers, therefore; few changes were brought in it. Pilot testing was conducted for the reliability. 30 teachers of the same population were selected randomly to fill the questionnaire. The teachers individually completed the scale in the presence of the researcher. The reliability of the test (CronBach Alpha) was .738.

Data Analysis:

The obtained data was analyzed in SPSS 20 by applying correlation coefficient.

Research Question No. 1

How does ICT impact student's academic achievement?

Table No. 1

The overall mean score and standard deviation regarding respondents on ICT impacts on student's academic achievements.

	Ns	Mean	Std. Deviation	Std. Error Mean
The response of the respondents regarding impact of ICT	116	4.51	.502	.047

The table No. 1 specifies the overall mean score and standard deviation of the Government Secondary School teachers regarding ICT impacts on student's academic achievements. The mean score 4.51 (SD=.502) is the cumulative of the diverse attempt related to the student academic achievement and these attempts are the main variable (ICT Impact) of the research.

The cumulative mean score verify researchers assert regarding ICT impact. An effective use of ICT significantly impact on students learning which enhance student's academic achievements.

Research Question No. 2

How does ICT as a tool for teaching learning process can influence student achievement at Secondary School level?

Table No. 2

The overall mean score and standard deviation of the respondents regarding ICT as a tool of teaching learning process.

	N	Mean	Std. Deviation	Std. Error Mean
The response of the respondents regarding ICT as a tool of teaching - learning process influence student achievement.	116	4.41	.512	.048

The table No.2 highlights the overall mean score and standard deviation regarding ICT as a tool of teaching learning process can influence student academic achievement. The values of mean score 4.41 (SD=.512) is

the cumulative of the different approaches regarding communication technology as a tool of teaching learning process.

The cumulative values of mean score and standard deviation clearly defines the positive response regarding respondents that ICT empowers both teacher and student to facilitate teaching- learning process which helps in achieving academically better..

Research Question No. 3

Is there any relationship between ICT and students academic achievements?

Table No. 3

The overall mean score and the standard deviation of the respondents regarding relationship between ICT and students achievement.

	N	Mean	Std. Deviation	Std. Error Mean
The response of the respondents regarding relationship between ICT and students achievement.	116	4.51	.582	.054

The table No. 3 defines inclusive values of mean score and standard deviation regarding relationship between information and communication technologies, and “Student Achievement”. The mean score 4.51 (SD=.582) is the cumulative of the diverse attempt regarding relationship between ICT and students achievement. The values of mean score and standard deviation show significant response of the respondents regarding relationship between the variables (ICT and Students Achievement).

The overall results clearly specify that ICT has positive impact on student academic achievement. Proper integration of ICT academically can enhance achievements of students. Integration of modern technologies with pedagogy has made instruction students centered which helps in achieving desired learning outcomes. ICT integrated educational system empowers both teachers and learner which widen possibilities to achieve academically better. Communication technologies enhance cognitive abilities of the student which is strong indicator of the student academic achievement.

Table No. 4

Overall mean score and standard deviation of Government Secondary School.

Group Statistics

	Which sector do you belong to?	N	Mean	Std. Deviation	Std. Error Mean
Overall Result	Government Sector	116	4.42	.262	.024

Overall mean score and standard deviation of Government Sector, table No. 4 clearly specifies the mean score and standard deviation of Government Secondary Schools regarding ICT impact on academic achievements of Secondary School Students in Quetta City (Chiltan Town). The mean score and standard deviation of Government Sector is 4.42 (SD=.262). The result clearly defines the significant concern of the respondents from Government Sector (male and female secondary schools).

Table No. 5

The result of correlation between teacher response regarding ICT Impact on Student's Achievement & Academic results of Secondary School Students.

The Result of Correlation					
Variables	N	M	SD	Sig. (2-tailed)	R
ICT impact of Govt. Sector Teachers	116	4.33	.229	.310	.103
Academic Achievement of Govt. Sector Students	100	727.15	62.782		

*Correlation is significant at the 0.05 level (2 tailed)

** $p \leq 0.5$

The table No. 5 point out the correlation between ICT and academic achievement of student. There is a positive relationship between ICT (M =4.33, SD= .229) and student academic achievement (M=727.15, SD = 62.78) $r = .103$, $p \leq .05$, $n =116$). The result clearly specified correlation (.103) between ICT and academic achievement of students'. The result highlights the positive and significant correlation between both variables' "ICT" and "Student academic achievement".

Discussion:

The result of the research specified significant relation between ICT and academic achievement of students. The outcomes of the study are compatible with the previous researches on the same topic. ICT has positive impact on student's academic achievements at Secondary School level. ICT

is a valuable tool in improving students learning and developing cognitive skills for desired academic achievements. The finding of the study show positive correlation between the ICT and academic achievement. The outcomes clearly shows that ICT significantly impact academic achievements of students. It also indicates shows that more use of ICT integrated education system, better would be the academic achievement of students.

The results of correlation show that there is positive correlation between both dependent and independent variables which indicates that research questions has been found accurate.

It also reflects that ICT as a tool enhance learning and provide stage to discover, concepts scrutiny and development of new knowledge. "ICT has potential to innovate, accelerate, enrich and deepen skills to motivate and engage students (Davis & Tearle, 1999; Lemke & Coughlin. 1998, Cited by Yusuf, 2005).

The results of the research study show significant impact on student's academic achievements.

Conclusion:

The literature review and the result of the existing study explored the significant impacts in the present education system. The outcomes of recent study exhibit positive relationship between the ICT and student's academic achievements. Continuous implementation and progress of ICTs in existing education will strongly impact educational practices and improving academic achievements. It has been perceived that proper integration of ICT in teaching can bring positive and significant impacts on student's academic achievement. Those students' scores academically better who use ICT integrated education system.

Recommendations:

The research can be carried out on a larger sample size including other areas of Quetta City. It would be more interesting study including Private School of Quetta City. Due to limited resources and time, the research could not be extended in other parts of the Quetta City. ICT integrated education system should be properly introduced in Government Sectors Schools. ICT integrated education system has positive impact on both teaching – learning process, which significantly impact student's academic achievement. The teachers should be properly ICT trained to improve their own teaching methodologies which helps in improving student's academic achievement. Hybrid system (ICT integrated education system) can improve students' learning as well as academic achievement.

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