

Impact of Information Technology on Higher Education in Pakistan

(A Study on People of Faisalabad, Pakistan)

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ABSTRACT: This study is designed to serve as comprehensive report on role and impact of Information Technology in boosting higher education in Pakistan. This popular technology give the advantage to education sector and role of information technology has resulted in a widening of educational access, giving people the chance to study for a qualification or a new career in their extra time. In this context, the study aims to give particular attention about how information technology plays a vital role in the education sector of Pakistan, to suggest some helpful measures to promote the involvement of information technology in education sector, to highlight the ways people use Information Technology for increasing their education, to understand the ways people use to uplift their ideas for research. The discussion concentrates on structure, access, quality, and future prospects of information technology in Pakistan. It is argued that if quality does not match quantity, and the information technology sector fails to bring out enlightened, highly skilled, trained, motivated and ethically committed individuals, the countries cannot meet any of its development objectives. The Higher Education Commission also facilitated the development of higher educational system in the country with main purpose of upgrading the universities and colleges in the country to be focal point of the high learning of education, research, and development through Information Technology.

KEYWORDS: Information Technology, Higher Education Commission.

I. INTRODUCTION

Information technology is the use of computer and software to manage information. Young minds enable themselves to absorb surroundings information for informed decision making at any later stage in life and their they are enlightened to accept new ideas expose creativity , and develop critical thinking. Computer is not very valid for us because we can not afford it due to our underdevelopment stage. Gradually with the common use of computer and availability of desktop and lap tops and usability, low cost of computer increase the importance of computer. In urban areas at primary school level Information Technology is introduced and IT become compulsory for students. In education sector information technology increasingly played a vital role since 1990. This popular technology give the advantage to education sector and role of information technology has resulted in a widening of educational access, giving people the chance to study for a qualification or a new career in their extra time. Information technology, or IT, has played a major role in extending the reach of the education sector. More people can now access career training and even degree courses online. Anyone who has a computer and the will to learn can study for a degree and/or a career change. We used outdated ways of technology and now start technological advancement. Technology is to cater to this audience, one need to talk to them in their own language. The information society challenges the education system. In recent years, both nationwide and globally the speedy, effective and global communication of knowledge has created a new foundation for co-operation and teamwork by information technology. The increasing role played by information technology in the development of society calls for an active reaction to the challenges of the

information society. Ahead of now, the core qualification as well as to their understanding and knowledge of work and organization company is depending on information technology.

Without information technology, Companies are no longer forced to gather all their functions in one place. Information technology make the society solid and broad education foundation on which to build because of becoming increasingly depended on information and processing. Currently the education sector has begun implementing a number of cloud computing projects not only for schools, but also to business, government, and the open source community to provide high-performance computing resources and services.. There are some industry leader in cloud computing education projects, will help universities to improve their competitiveness and influence.

Things can be used in the education management staff attendance, library management, equipment management. Information technology is widely use in education. In 1990s, to provide classes remotely, many universities had begun using computers. Since then, growing numbers of adults have used online education to earn college credits. Educated people use computer and internet for learning different programs for example project-based, differentiated or remote. Computers is an easy way of learning like project-based in which teachers don't give lecture but give students problems to answer for example online lectures. Internet give us help to find the answer on our computers at home Teachers help students find answers on their own through internet and through online system. Computers and the Internet give student's easy way to research materials that they need to complete such projects and works. In differentiated learning, students work through material at their own computers. Students use a specialized computer appliance that covers the subject and assesses student progress, while a teacher assists and answers questions. Students and teachers both are helping for the promotion of I T and in education sector. Informational technology is simply and very rapidly transforming higher secondary education in developed nations to a degree hardly possible only one generation ago colleges. High schools, vocational schools, universities, and all affected by the information technology, at all levels and in innumerable respects Especially in, IT has affected online education from other countries and allowing school calendars to be designed to accommodate the needs of individual students on one hand and faculty on the other, thus moving many elements of the educational process into the virtual world. Secondary Boards of Punjab province has launched online admission form submission system.

Objectives of the Study

- [1] To know the impact of information technology in the Education sector of Pakistan.
- [2] To know about the socio-economic characteristics of the respondents.
- [3] To know about the level of acceptance of information technology by the people of city Faisalabad, Pakistan.
- [4] To suggest some helpful measures to promote the involvement of information technology in education sector.
- [5] To highlight the ways people use Information Technology for increasing their education.
- [6] To understand the ways people use to uplift their ideas for research.

Literature review

Davies, *et al.*, (2000) reported that a guiding principle in the integration of Information Technology in the Education System should be evidence-based policy formulation. It has been acknowledged that "whichever part of the public sector one is concerned with, one observation is clear: the current state of research-based knowledge is insufficient to inform many areas of policy and practice. Saeed (2000) rightly noted that in Pakistan, IT is becoming a necessity. Students of Universities frequently use libraries equipped with technology like internet, etc. To conclude all above, it can be said that the Government of Pakistan is giving all-out support and push to IT in education setups. Millions of dollars are being invested by the Government in IT, and majority being spent on human resource development and enabling infrastructure provision. The Government of Pakistan is leading the technology revolution in the country in various projects aimed at improving infrastructure, human resource development and integrating IT in the public and private sector. Bates, (2001) addresses the issue of IT usage in his study and claims that campus-based activities and private sector training markets have been the largest users of IT tools and applications, and that the education sector has incorporated Internet use for many years. Additionally, he says that since a knowledge-based economy demands technology-ready workers, governments and business communities put enormous pressure on educational institutions to use IT in their daily routine tasks.

Hafkin, (2002) said that information technology can be categorized into vertical, infrastructural, and horizontal policies. Sectorial needs are satisfied by vertical ICT policy such as education health and tourism. Development of national infrastructure is deal by the infrastructure aspect and this has linked with telecommunication. The broader aspect of society such as freedom of information, tariff and pricing, privacy

and security are dealt by the horizontal aspects. These three aspects are adequately addressed in the Nigerian I T policy. It is vital to suspect the documents as it affects education. Leidne (1995) suggested that technology is usually (a) for addressing the challenges in teaching and learning, technology is a major tool (b) change of agents (c) economic competitiveness is a competitive force. I T also helps the students for data collection from the internet. It also helps in communication system, I T give the broad spectrum to the students. Information technology helps in all subjects and in online study. It also helps in economic sector also in education sector. Shaikh (2009). The IT met slow introduction in Pakistan right from beginning because in the initial period of 1960s, the import of computers was not opened and it used to take almost two years for a software company to get import license from Government of Pakistan. The custom duties and other import taxes on computers/electronic items were also very high.

Daniel (1996) stated that as modern systems in IT laptop and other devices bringing a rapid change in the education sector, information technology is very important for the education sector today. Information technology is not only a subject, but it can be applied to any topic; there is big opportunity for all the students to get information from the internet. The 21st century demands ICT skills in all fields, most importantly for education, employment and for everyday life. Today employers demand confidence and efficiency in ICT use either they are at academic level or at industry level; because ICT skills are crucial in the context of job skill demand. Thus, this presents an enormous challenge to the educators, they are expected to equip students with relevant, up-to-date, and high-quality ICT experience before students emerge into the employment world.

Volman (2001) describe that Informational technology has enabled institutions to cut expenses, by eliminating the require for physical transportation and reducing the want for facility. the National Center for Academic Transformation, colleges offering many facilities and data for the students on the web for the educational purposes. Seventy percent of these students passed the course with a rating of "C" or higher, compared to 62 percent of students in traditional classes. The university also saved 30 percent over the cost of traditional classes. Public school systems offer online classes for similar reasons. Around 300,000 high school students took classes this way in the 2002 academic year.

II. METHODOLOGY

The methodological techniques and ways of analyzing the observations play a important role in social research. According to Nachmias (1981)"The scientific methodology is a system of explicit rules and procedures upon which research is based and against which the claims for knowledge are evaluated"According to Young (1959), social research is the systematic method of discovering new facts, or verifying old facts, their sequences, interrelationship, causal explanation and the natural laws which govern them. The major objective of this chapter is to explain various tools and techniques engaged for the collection, analysis and interpretation of the data, relating to present topic under study. Dixon and Mary (1957) said that; "Any set of the individuals/objects having common observable characteristics constitute a population/universe". There are large numbers of peoples having knowledge of Information Technology and using it in Pakistan but the present study was conducted on the people of city Faisalabad. Four were selected randomly (Madina Town, Peoples Colony # 1, Nazamabad, and Ghulam Muhammadabad).

Sampling Frame

The sampling frame of the present research is citizens of four locations having knowledge of IT and use IT for education purpose.

Sampling technique

Four locations are selected and use stratified random sampling.

Sample size

130 respondents

Tools for data collection

All the respondents are interviewed on demographic segmentation and technical usage of IT.

Data Analysis

Excel is used for analysis of data. Frequency distribution is calculated against each question.

Age

It is defined as "total number of years completed by the respondents" The age is categorized as;

21-25	Years
26-30	Years
31-35	Years
36-40	Years
41-45	Years

Family

There were three types of family in the present research which is categorized as:

- a. Nuclear Family
- b. Joint Family
- c. Extended Family

Marital status

Marital status is the living position of a person in or out of the family when he/she has become young and mature. In the present study, the marital status is categorized as under:

- a. Married
- b. Unmarried

Education

In the present research education is categorized as;

- a. B.A/B.Sc
- b. M.A/M.Sc
- c. M.Phil
- d. PhD

Monthly household Income

In the present research the monthly household income of the respondent are taken. This is categorized as under:

Respondent's Monthly Income

- 5001-10000
- a. 10001-15000
- b. 15001-20000
- c. 20001-Above

Statistical techniques for data analysis

Frequency Distribution

To bring the data into comparable form, percentages of variable categories of data are used in the present study. The percentages were calculated by using following formula:

$$\text{Percentage} = \frac{F}{N} \times 100$$

Where

F = Absolute frequency

N = Total number of item/respondents

III. RESULTS AND DISCUSSIONS

Table1: Distribution of respondents according their Age.

Age	Frequency	Percentage
21-25	100	76.92
26-30	18	13.84
31-35	2	1.53
36-40	6	4.61
41-45	4	3.07
Total	130	100

Table 1: reveals that majority 76.92 percent of the respondents belongs to age group 21-25 years, 11.53 percent of the respondents belongs to the age group o 26-30 years, 1.53 percent of the respondents belonged to age group of 31-35 years, 4.61 percent of the respondents belongs to age group of 36-40 years, 3.07 percent of the respondents belongs to the age group 41-45 years.

Table2: Distribution of the respondents according to their gender.

Gender	Frequency	Percentage
Male	80	61.53
Female	50	38.46
Total	130	100.0

Table 2: shows that 61.53 percent of the respondents were male and 38.46 percent of the respondents are female. So males were large in number in the research.

Table3: Distribution of the respondents according to their household income.

Household Income	Frequency	Percentage
5001-10000	20	15.38
10001-15000	25	19.23
15001-20000	28	21.53
20001-25000	57	43.84
Total	130	100.0

Table 3: shows that 15.38 percent of the respondents had Rs.5001-10000 monthly house hold income, 19.23 percent of the respondents had Rs.10001- 15000 monthly household income, 21.53 percent of the respondents had Rs.15001-20000 monthly household income and majority 43.84 percent of the respondents had Rs.20001-25000 monthly household income.

Table 4: Frequency of the respondents according to their family type.

Type of Family	Frequency	Percentage
Joint	75	57.69
Extended	25	19.23
Nuclear	30	23.07
Total	130	100.0

Table 4: shows that 19.23 percent of the respondents are living in extended family, a majority 57.69 percent of the respondents are living in joint family and 23.07 percent of the respondents are living in nuclear family.

Table 5: Distribution of the respondents according to the number of members living in their household.

Household Size	Frequency	Percentage
1-3	6	4.61
4-6	48	36.92
7-9	49	37.69
10-Above	27	20.76
Total	130	100.0

Table 5: shows that smaller number 4.61 percent of respondents had 1-3 members in their household, 36.92 percent respondents had 4-6 members in their household, 37.69 percent of the respondents had 7-9 members in their household and remaining 20.76 percent of respondents had above 10 members in their household.

Table 6: Distribution of the respondents according to their Education.

Education	Frequency	Percentage
BA/B.Sc	30	23.07
M.Sc/M.A	85	65.38
M.Phil	8	6.15
Ph.D	7	5.38
Total	130	100.0

Table 6: reflects that 23.07 percent of the respondents belongs to BA/B.Sc, 65.38 percent of the respondents belongs to M.A/M.Sc, 6.15 percent of the respondents are M. Phil and 5.38 percent of the respondent are Ph.D students So the most student respondents are from M.A/MSc.

Table 7: Distribution of the respondents according to their religion.

Religion	Frequency	Percentage
Islam	122	93.84
Christianity	8	6.15
Any other	0	0.0
Total	130	100.0

Table 7: shows that 93.84 percent respondents are Muslims and 6.15 are Christian.

Table 8: Distribution of the according to their marital status.

Marital Status.	Frequency	Percentage
Married	23	17.69
Unmarried	107	82.30
Total	130	100.0

Table 8: reflects that only 17.69 percent of the respondents are married and majority 82.30 percent of the respondents are unmarried.

Table 9: Distribution of the respondents according to their opinion that was education sector of Pakistan as developed one

Education sector of Pakistan as developed one?	Frequency	Percentage
Yes	82	63.07
No	48	36.92
Total	130	100.0

Table 9: reflects that 63.07 percent of the respondents considered the education sector as developed and 36.92 percent of the respondents did not take the education sector of Pakistan as developed one.

Table10: Distribution of the respondents according to their opinion about the importance of I.T for educational development.

Importance of I.T for economic development purpose	Frequency	Percentage
Yes	110	84.61
No	20	15.38
Total	130	100.0

Table 10: shows that majority 84.61 percent of the respondents are agreed that I.T is very important for educational development of a country and only 15.38 percent of the respondents said that I.T is not important for educational development. So, most of respondents believed that I.T is an important tool for educational development.

Table11: Distribution of the respondents according to their opinion about the use of I.T for the education sector

Pakistan has how much use of I.T for the education sector?	Frequency	Percentage
To great extent	75	57.69
To some extent	55	42.30
Total	130	100.0

Table 11: shows that majority 57.69 percent of the respondent said that Pakistan had use of I T in education sector to great extent and 42.30 said that there was to some extent the use if I T for education sector.

Table12: Distribution of the respondents according to their opinion that Pakistan had sufficient level of I.T for economic development.

Pakistan had sufficient level of I.T For educational development?	Frequency	Percentage
Yes	74	56.92
No	56	43.07
Total	130	100.0

Table 12: indicates that majority of the respondent 56.92 percent said that Pakistan had sufficient level of I T in education sector and 43.07 percent of the respondent were disagree and said that Pakistan had not sufficient level of I T in education sector.

Table13: Distribution of the respondents according to their opinion that, I.T is replacing Islamic values

Was the use of I.T replacing the Islamic values?	Frequency	Percentage
Yes	35	26.92
No	95	73.07
Total	130	100.0

Table 13: shows that 26.92 percent of the respondents said that yes the I.T is replacing Islamic values and majority 73.07 percent of the respondents said that I.T does not replacing any Islamic values.

Table14: Distribution of the respondents according to their opinion that, were Pakistan’s educational Institutions getting advantages from I.T

Pakistan’s educational institutions getting advantages from I.T techniques?	Frequency	Percentage
Yes	92	70.76
No	38	29.23
Total	130	100.0

Table 14: reflects that majority 70.76 percent of the respondents are agreed that educational institution of Pakistan are getting advantages from I.T and remaining 29.23 percent of the respondents said that the educational institution are not getting advantages from I.T.

Table15: Distribution of the respondents according to their opinion that did institution of Pakistan copes with the developed world regarding the use of I.T

Did institutions of Pakistan cope with the developed world regarding the use of I.T?	Frequency	Percentage
Yes	90	69.23
No	40	30.76
Total	130	100.0

Table 15: shows that majority 69.23 percent of the respondents replied that institutions of Pakistan did cope with developed world regarding the use of I.T and remaining smaller 30.76 percent of the respondents replied that educational institutions of Pakistan did not cope with developed world regarding the use of I.T. So most of the respondents believed that institutions in Pakistan did cope with developed world regarding the use of I.T.

Table16: Distribution of the respondents according to their opinion regarding the level of adoption about the use of Information Technology

Level of adoption.	Frequency	Percentage
Equal to Them	30	23.07
Sufficient	60	46.15
To Some Extent	25	19.23
Not Cope with Them	15	11.53
total	130	100

Table 16: shows that 23.07 percent of the respondent said that Pakistan had adopt I T equal to the developed world, 46.15 percent of the respondents said that in Pakistan the adoption level of I T is sufficient, 19.23 percent of the respondents believed that Pakistan had adopt I T only to some extent and only 11.53 percent of the respondent said that Pakistani intuitions did not cope with intuitions of the developed world.

Table17: Distribution of the respondents regarding their opinion about the adoption of I.T and educational prosperity of the nation.

Adoption of I.T and educational prosperity of the nation.	Frequency	Percentage
Yes	90	69.23
No	40	30.76
Total	130	100.0

Table 17: reflect that majority 69.23 percent of the respondents said that adoption of I.T is necessary for the prosperity of a nation while 30.76 percent of the respondents said that adoption of I.T is not necessary for the prosperity of a nation. So, most of the respondents are in favour of the more adoption of I.T for the educational prosperity of a nation.

Table18: Distribution of the respondents according to their opinion about the relationship between I.T and education sector development.

Was there any Relationship between I.T and education development?	Frequency	Percentage
Yes	100	76.92
No	30	23.07
Total	130	100.0

Table 18: shows that majority 76.92 percent of the respondents believed that there is a strong relationship between I.T and education development while only 23.07 percent of the respondents said that there is no relationship between I.T and education development.

Table 19: Distribution of the respondents according to their opinion the relationship between I.T and education development.

How much relationship between I.T and education development?	Frequency	Percentage
To great extent	85	65.38
To some extent	35	26.92
Not at all	10	7.69
Total	130	100.0

Table 19: depicts that majority 65.38 percent of the respondents believed that the relationship between I.T and education development is to great extent, 26.92 percent of the respondents believed that the relationship between I.T and education development is to some extent and smaller number 7.69 percent of the respondents believed that there is no relation between I.T and education development.

Table 20: Distribution of the respondents according to their opinion that I.T is an easy way of online education.

I.T was an easy way of education	Frequency	Percentage
Yes	115	88.46
No	15	11.53
Total	130	100.0

Table 20: depicts that majority 88.46 percent of the respondents believed that I.T is an easy way for online education and remaining 11.53 percent of the respondents said that I.T is not an easy way for education.

Table21: Distribution of the respondents according to you level of IT in Pakistani Institutes should be

level of IT in Pakistani Institutions should be	Frequency	Percent
Advanced	70	53.84
Traditional	40	30.76
Simple	20	15.38
Total	130	100.0

Table 21: shows that a majority 53.84 percent of the respondents perceive that level of IT in Pakistani Institutions should be advanced level, 30.76 percent of the respondents consider that level of IT in Pakistani Institutions should be traditional level while remaining 15.38 percent of the respondents said that level of IT in Pakistani Institutions should be is simple/basic level.

Table22: Usage of Digital libraries for research study.

Libraries search	Frequency	Percent
Google Scholar/Google	70	53.84
EBSCO	30	23.07
HEC Digital Library	30	23.07
Total	130	100.0

Table 22: shows that a majority 53.84 percent of the respondents use Google Scholar/Google for their research purpose, 23.07 percent of the respondents use EBSCO while 23.07 percent of the respondents like to use the HEC Digital Library for their research help.

Findings

- ❖ A huge majority 76.92 percent of the respondents belonged to age group 21-25 years while a smaller 1.53 percent of the respondents belonged to the age group 31-35 years
- ❖ 61.53 Percent of the respondents are male and 38.46 percent of the respondents are female. So males were large in number for the research
- ❖ 43.84 percent of the respondents had Rs.20001-25000 monthly household income and 15.38 percent of respondents had 5001-10000 monthly household income.
- ❖ A majority 57.69 percent of the respondents are living in joint family and a smaller number 19.23 percent of the respondents are living in extended family.
- ❖ A major portion 37.69 percent of the respondents had 7-9 members in their household.
- ❖ Education of a huge majority 65.38 percent of the respondents are M.A/M.Sc while only 5.38 percent of the respondents are PhD.
- ❖ 93.84 percent of the respondents are Muslim and 6.15 are non-Muslim.
- ❖ Only 17.69 percent of the respondents are married and majority 82.30 percent of the respondents are unmarried
- ❖ A huge majority 63.07 percent of the respondents took the education sector as developed and 36.92 percent of the respondents did not take the education of Pakistan as developed one
- ❖ A vast majority 84.61 percent of the respondents agreed that I.T is very important for educational development of a country and only 15.38 percent of the respondents said that I.T was not important for educational development. So, most of respondents believed that I.T is important for educational development
- ❖ A large majority 57.69 percent of the respondents said that to great extent Pakistan had the use of I.T for education development while a smaller number 42.30 percent of the respondents said that Pakistan had not any use of I.T for educational development.
- ❖ A huge majority 56.92 percent of the respondents said that Pakistan had sufficient level of I.T for educational development and 43.07 said that Pakistan had not sufficient level of I.T for educational development.
- ❖ 26.92 percent of the respondents said that I.T replaces Islamic values and majority 73.07 percent of the respondents said that I.T does not replace any Islamic values.
- ❖ A large majority 70.76 percent of the respondents are agreed that educational institution of Pakistan are getting advantages from information technology techniques and 29.23 said that educational institution of Pakistan are not getting advantages from information technology techniques.
- ❖ A majority 69.23 percent of the respondents said that adoption of I.T is necessary for the prosperity of a nation while other 30.76 percent of the respondents said that adoption of I.T is not necessary for the prosperity of the respondents. So, most of the respondents are in fever of the more adoption of I.T for the educational prosperity of a nation.
- ❖ A large majority 46.15 percent of the respondents said that level of adoption of I.T is sufficient for the prosperity of a nation and 11.53 percent of the respondents said that level of adoption of I.T is not sufficient to cope with the prosperity of the nation.
- ❖ A huge majority 76.92 percent of the respondents believed that there is a strong relationship between information technology and education sector and 23.07 percent said that there is a weak relationship between information technology and education sector

- ❖ 65.38 percent of the respondents believed that there is a relationship between information technology and educational sector to great extent and only 7.69 percent believed that there is no relationship between information technology and educational sector.
- ❖ A huge majority 88.46 percent of the respondents believed that I.T is an easy way for online education and remaining 11.53 percent of the respondents said that I.T is not an easy way for education.
- ❖ A majority 53.84 percent of the respondents perceive that level of IT in Pakistani Institutions should be advanced level, 30.76 percent of the respondents considered that level of IT in Pakistani Institutions should be traditional level while remaining 15.38 percent of the respondents said that level of IT in Pakistani Institutions should be is simple/basic level.
- ❖ A majority 53.84 percent of the respondents are in favor that level of I.T should be advanced in the educational institutions of Pakistan, a smaller 30.76 percent of the respondents said that I.T level should be traditional while remaining 15.38 percent of the respondents said that I.T level in economic institutions should be simple.
- ❖ A majority 53.84 percent of the respondents use Goggle Scholar/Goggle for their research purpose, 23.07 percent of the respondents use EBSCO while 23.07 percent of the respondents use HEC Digital Library for their research help.

IV. RESULT & RECOMMENDATIONS

It is concluded that Information Technology is very important now days almost in every field of life and it plays a very vital role in the education sector. Without proper use of information technology in educational field, country will remain underdeveloped until it does not start to adopt the information technology techniques to promote its education sector. There is a strong relationship between information technology and education sector. Countries like Pakistan, it is very important to adopt and use information technology for their educational development. As many people believe that level of information technology in Pakistan should be advanced neither simple nor traditional so that its economic institutions may develop and Pakistan will be an educated flourishing and developed country. Information and communications technologies (ICTs) are powerful tools for empowerment and income generation in developing countries.

The cost-effectiveness of different ICTs does vary between developed and less developed countries, however. Government should concentrate on opening up private and community provision of broadcasting and ISP's, so that they can effectively launch the prospective. Key indicators for the emergence of the information technology society in Pakistan include e-government, IT policy, rapid growth of the IT and telecom sector, Internet services, e-learning, e-health, e-commerce, etc.

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