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AN EVALUATIVE STUDY OF IMPLEMENTATION OF INFORMATION TECHNOLOGY IN PUBLIC SECTOR SECONDARY SCHOOLS IN PAKISTAN

Abstract

This study examined the implementation of Information Technology (IT) in the school system of Pakistan.The study investigates, the level of availability of computer labs with all required facilities, qualified staff in school, and integration of information technology in the school curriculum and the problem and challenges facing by the students, staff and administration in the effective implementation of information technology at school level. The descriptive survey design was used for the study. A self-designed questionnaire was developed for collecting data.Eighteen 18(boys and girls) secondaryschools of public sectorwere randomly selected from total 100 secondary schools located in Hyderabad District of Sindh province. The study concludes that proper Information technology facilities were not available in most of the public sector schools. Government should take serious and timely measures to provide IT facilities on priority bases in the public sector secondary schools.

Keywords: *Information Communication Technology, Secondary Schools, Implementation*

Introduction

Information Technology has a great importance in education through which teacher students and administration can easily come close to each other in reference to know each other demands and needs. Haastrup T et.al (2009) shows great importance of ICT in teaching and learning in educational institution where quality of performance of both can be enhanced in developing country to motivate teachers and taught to sharpen their skill of learning and teaching through electronic communication.

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Information Technology is a good source for the development of education for developing country at different level and different institutions and social life. Studies reveals that use of modern technology in education has greatly affected performance of students and teachers positively in all subjects and enables them to gear up their computing and graphing skills. (Look, 2005), and (Becta, 2003)

In developed and advance countries, information technology has accelerated the reform and development pace in the field of education especially at schooling level and if information technology is introduced and implemented properly, it will greatly support to enhance the educational skills, knowledge and technique of teachers as well as students. It will also help to promote active and collaborative learning. According to Grimus (2000) "If ICT is properly implemented in school then student can face future development with proper understanding."

Pakistan is developing country and governments in Pakistan are continuingly trying to implement IT in school system. National Educational Policy 1998-2010 of Pakistan clearly state that "computer shall be introduced in secondary schools" and "Educational institutions shall be provided internet facilities". Hence in Pakistan efforts are underway to introduce and effectively implement IT in public schools.

Rationale for the Study

The study will evaluate the adoption/ implementation of IT at the public sector secondary school levels in Pakistan in terms problems/ causes of not implementing IT at secondary School level properly and availability of facilities including computer labs, teachers etc.

Objectives of the Study

The study was conducted to achieve the following objectives:

- To assess the availability of computer labs and qualified staff in public schools.

- To examine that at what extent the labs are equipped.

- To identify the problem and challenges in implementation of IT in public sector schools.

- To give recommendations and suggestion for effective implementation of IT at public sector secondary schools.

Research Methods

The research study was a survey type of study and descriptive nature. Self-explanatory questionnaire comprising of ten (10) items was developed to collect data for the study.

Sampling

Convenience sampling method was used for selecting sample from the population of (100)Government Secondary Schools (Girls and Boys) of Hyderabad District of Sindh Province of Pakistan. 18 public sector secondary schools were selected for data collection. Data was collected from teachers and students and administrators of the sampled schools

Finding and Discussion

Data Collected revealed that only 17% schools had computer labs while 83% schools did not have computer labs. In developing countries this is very pathetic conditions. Many researches were conducted to evaluate this issue. In order to properly implement ICT in schools infra-structure and appropriate facilities are required (Visscher et al., 2003; Mentz and Mentz, 2003 and Tearle, 2004).

Table 1 shows the details of Computers and Students Ratio.

No. of Schools	No. of Computers	No. of Students
1	10	60
2	20	200
3	15	40

Table #1 shows that in eighteen sampled public sector schools, the strength of students was too much & computers were not sufficient in numbers to fulfill the need of students means the ratio of computer per student is too large. According to the study conducted in African country by Kiptalam et.al (2010)"Access to IT facilities is a major challenge facing most African countries, with a ratio of one computer to 150 students against the ratio of 1:15 students in the developed countries".

And also according to Bakia (2000) survey report "students per computer ratio in Barbados is 3, in Turkey is 40, in Chileis 68-137 and in Egypt 27."Hence, the government should put all efforts to provide more computers and Lab facilities in public sector schools on priority bases to promote the Information Technology (IT) in the country.

Data collected also revealed that majority of public schools did not have required number of staff. Only one school had two (2) computer teachers and another school had three (3) computer teachers. Only one school had a single supporting staff. According to Kiptalam et.al (2010)," majority of teachers did not receive any ICT training prior to joining the teaching profession."

and according to Lau and Sim [2008] "most of the teachers considered themselves as having limited knowledge of ITs; and indicated other channels to provide them with more effective ICT training.". Hence, the government should also ensure the provision of computer staff and teacher immediately in the secondary schools for effecting teaching of IT skills.

Data collected also revealed that computer labs and their proper maintenance were found in only three schools out of eighteen schools. Computer use will improve services and make life easier.

A performance evaluation will not only determine whether these technologies deliver the services they are intended for, but also whether they can offer better services in the pursuit of excellence (Lombo 1998: 61).In Pakistan government is responsible forestablishment and maintenance of the labs in the schools but only three schools were there, where labs were found.So the Government should provide separate budgets for maintenances of computer labs and school administration should utilize these funds for maintenance of computer laboratories in the public schools.

Trained teachers

Data collected revealed that pathetic conditions regarding IT, that only in a single school there was trained teachers out of eighteen schools. According to Borko, Whitcomb, and Liston (2009) teachers are the key source of transferring ICT skill in their up-coming generation so every teacher should be possess ICT skill and trained properly for the use of ICT in their teaching learning process.

Moreover, (Vrasidas&McIsaac, 2001) supported this argument by "ICT should be included in these courses the teaching of a specific subject (i.e., science) with constructivist uses of technology, should be modeled" Training should be integral part of teaching profession. In-service and Pre-service training should be introduced.

Time duration given to students in lab to use computer

Collected data revealed that there was no proper schedule for using labs, and only one school was allowing proper time for lab to the students for practice. Computer is the subject that need constant practice so it is obvious that proper time should be allocated for attaining desired objectives.

Following table shows the details of availability of IT facilities in three schools out of eighteen sampled schools of Hyderabad District.

ICT facilities	School No. 1			School No. 2			School No. 3		
	Available		No. of	Available		No. of	Available		No. of
	Yes	No	units	Yes	No	units	Yes	No	units
Video camera		✓	N/A		✓	N/A		✓	N/A
Overhead projector		✓	N/A		✓	N/A		✓	N/A
Multimedia projector		✓	N/A		✓	N/A		✓	N/A
Computer printer		✓	N/A		✓	N/A		✓	N/A
Scanner		✓	N/A		✓	N/A	✓		One
Internet		✓	N/A		✓	N/A		✓	N/A

Data revealed that majority of the schools did not have any detailed IT facilities. Data shows that only one (1) school had one scanner. Lab was not used properly, students were complaining that lab was not in working condition. They were not allowed to use lab and they viewed that they were not able to learn anything from computers in their schools.

While the majority of the students regarded the use of computer in education very essential and useful tool.Bandele (2006) describe information communication technology (ICT) deals with use of computer, Internet telecommunication technology laboratories maintenance and other related fields for the use of individuals in order to gain most of the benefits in modern time and through this ICT data related to every aspect of human life and discipline can be access easily.

Recommendation

1. Separate budget should be allocated for the establishment and maintenance of computer labs.

2. Computer having clone technology can be purchased rather than branded computers. By this way institution can reduce cost.

3. Policy makers should be aware of the range of computer provision available and decide what is most appropriate to their circumstances. It is not necessary that always brand new equipment is not essential for good educational outcomes. Through this consideration administration can manage the cost of computer.

4. If the Govt. have not adequate resources to establish a separate lab in each school then it is possible to established 'Information Technology Access Mobile Units'. Where infrastructure is not available these mobile unit can impact positively.

5. Another possibility is the establishment of a common Hi-Tech lab. A Hi-Tech computer laboratory will be established in central place and other schools that are located in that area may be share the same lab on rotational basis.

6. Funds Generation and RaisingThrough the Involvement of Private Sector & Donation from community and Parents

7. Facilitating community and parental usage of computers provide an opportunity to enhance school community relationships.

8. School can generate funds for establishment of lab through involvement of private sector, National and International NGO's, Intell Corporation,

9. Head of Schools can plan income generating activities if this is seen as a way of meeting the running costs of computer provision.

10. Technical and qualified staff should be hired.Involved community and create parents teachers committees, and invite guest speaker from the community for delivering lectures at free of cost.

11. Teachers may be provided incentives to complete the computer literacy program and professional development programs at all levels. These incentives may include laptops, mobile phones having internet facility. Teachers over a certain age need to be encouraged in more distinctive ways to be involved in in-service

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