



Improving Quality Assurance by Using ICT Tools in Education System: A Case Study of Attock

Shakeel Ahmed ^{1*}

¹ MPhil Scholar, Department of Education, Alhamd Islamic University Islamabad, Pakistan.

*Corresponding author: s_ahmed2000@yahoo.com

Paper ID: ARMJ-12

Volume 2 Issue 1

Keywords: software engineering; quality assurance; ICT tools; education; teaching methods

Abstract : Day by day development in information technology has changed our life style; due to positive impact of technologies in everyday life, the educations institutes are also trying to adopt the technology by recognize their classrooms and education facilities. The literacy rate of Attock District is low because technical resources were found a major barrier for its education system. In order to improve the literacy rate of Attock District; we need to promote significant teaching practices by using new technology including information and communication technologies (ICT) tools. ICT tools have the great impact on the education system moreover integration of ICT tools into the secondary schools of Attock District can achieve the quality of the education systems, this paper presents a survey conducted at the secondary schools of Attock District; respondents were the teachers of the secondary schools; A questionnaire was designed and scattered among those teachers for data collection process, this data was verified and it was concluded that ICT tools usage rate is very low on the basis of its findings, at present there is lack of ICT tools usage in class rooms, ICT tools are not appropriately available and teachers also lack the appropriate knowledge of effectiveness of ICT tools..

I. Introduction

ICT tools have become very popular and one of basic need of modern society. In several countries nowadays concepts of ICT tools, command over the elementary skills and understanding of ICT tools or a necessary part of education by the side of reading, writing and the numeracy (Tomei, Lawrence, 2006). ICT tools play a great role in education which affect the teaching, learning, or research (Painter, S. R., 2001). ICT tools affected the ability to deepen skills, enrich, accelerate innovate, and to inspire or involve students which grow up the schools practice on the way to work carryout, construct trade and industry potential for tomorrow's employees, like beginning teaching and facilitating the school revolutionize. ICT tools have talented characteristics to improve the teaching and learning practice in schools. These tools support student to learn and improve their performance in secondary schools. Computers are utilized in several countries for education to improve the leering and teaching.

ICT tools are efficient educational tools which may produce novel practices in schools; however the utilize of the ICT tools in schools or less in secondary schools in Pakistan, peoples have interest in ICT tools and wanted to take advantages of technology. In order to adopt ICT tools in schools, it is most important to provide teachers practice through ICT tools so students can learn the use and concepts of ICT tools in schools. This paper exhibits an overview was represent in secondary schools of Attock District; the premise of its findings it was presumed that the ICT tools are utilize and the velocity is too low; moreover no usage of ICT tools in the classrooms, Services of ICT tools are not legitimately benefited and educators do not have the information of effect of ICT tools.

This paper is divided as different sections: Section II includes the related work, Section III presents ICT tools, Section IV is devoted to the discussion about need for ICT tools integration in schools, Section V includes the methodology, Section VI presents result and discussion and VII include conclusion and future work.

II. Related Work

It is important for people that they have to learn by using ICT tools so they can be updated with new technology (Mayo, N. B.,Kais, L. T. &Tanguma, J., 2005). ICT tools are good to remove the barriers in communication (Woodrow, J. E., 1992). ICT tools are also effective for digital resources such as the digital libraries which can be effective for the students, the teachers

Alhamd Multidisciplinary Research Journal

and the professionals to get their searching substance and their lessons stuff and information as of anywhere and anytime (Watson, D. M., 1998). These services build a network of academics and researchers to share research material; this reduces work duplication. ICT tools are good to eliminate barriers of time in education for students and teacher. It also eradicates cultural diversity (A Planning Guide by UNESCO, 2001)

ICT tools are fast and can provide quickly distribution of education to remove deprived groups (Al-Bataineh, A., & Brooks, L, 2003). ICT tools can also improve international measurement of educational services (Kington, A., Harris, S., &Leask, M., 2003). ICT tools can also use for health campaign and literacy campaign (Zhao, Y. & Cziko, G. A., 2001) the ICT tools usage in different education building skills of higher order through coordinating over different time or place to visit to solve difficult problems (Demetriadis, S., Barbas, A., et al 2003) . ICT tools also enhance student's perception and understanding; thus ICT tools can be useful for global economy to make workforce (Rogers, E. M., 1995). (Braun, J. A., & Kraft, C., 1995) stated so as to activity of a number of teachers, who are already searchers, is with the intention of the employment of these ICT tools are prompting the higher understudies and additional teachers themselves. (Mac-Ikemenjima, D., 2005)

(Harris, S., 2002) Mention that ICT tools can improve execution, teaching, administration, or generate significant abilities in the impeded networks. It enhances the worth of the education through promoting training via preparing, synchronized discussion, overdue time debate, synchronized education, self-taught, decisive thoughts, information looking for assessment, essential thoughts and also the capacity to converse, panel awake or be taught. (Wheeler, S., 2001)

III. Ict Tools

The ICT tools have a wide range of facilities, applications, and technologies by using different kinds of hardware and software. The ICT tools contain telecom service like telephone, fax and telecom service by having computer, hardware and software which also contain other services like email etc (Osunde, A. U. & Omoruyi, F. E. O., 2005). Other Applications such as videoconferencing, information management systems, teleporting, radio, TV and technologies are a used for education.

Alhamd Multidisciplinary Research Journal

These tools helped in education systems and have enhanced the quality of education. ICT tools have a technological revolution in industry and firm. ICT tools affect the possibility to innovate, quicken, improve, and extend abilities, to persuade and connect with understudies who increase the schools association towards employment practices, construct financial rational intended for tomorrow's laborer in addition to as well increase teaching plus serving schools revolutionize.

ICT tools have talented characteristics to improve the teaching and learning practice in schools. These tools support student to learn and improve their performance in secondary schools. Computers are utilized in several countries for education to improve the leering and teaching. ICT tools also enhance student's perception and understanding; thus ICT tools can be useful for global economy to make workforce (Ololube, N. P., 2005) ICT tools are efficient educational tools which may produce novel practices in schools; however the usage of ICT tools in schools is less in secondary schools, peoples have interest in ICT tools and wanted to take advantages of technology.

IV. The Need For Ict Tools Integration In Schools

There is a need to integrate ICT tools in schools to achieve many goals plus advance the excellence of education in each and every one region of education as well as social studies. The ICT tools are more and more penetrating into many features of our everyday life like industry, education, knowledge, entertainment and fitness. As the ICT tools drive the entire information found methods, everyone should become a technology savvy society. All schools must therefore be equipped with ICT tools to furnish future ages with the tools and assets to access and utilize them and to accomplish the normal aptitudes. ICT tools increase the adaptability to convey education with an aim that students can access to learning anywhere and from everywhere. It can influence the manner in which understudies educate and how they get and learn as currently inspires by the student's forms or not by teachers. A standup the most critical involvements of ICT tools in preparation is anything but confusing to access of learning, with the support of ICT tools. We understand would now be able to analyze e-Books, tests of examination papers, earlier year papers, and so forth, and can without much of a stretch access specialists, tutors, specialists, scientists, professionals, and associates the world over. Worldwide. This flexibility has improved

Alhamd Multidisciplinary Research Journal

the convenience of education in a timely way and has given learning chances to numerous students who have beforehand been bound by different responsibilities (Ololube, N. P.. 2005).

The broadest practices and best teaching materials available, which can be promoted and shared by ICT tools, can improve education better. ICT tools likewise permit academic institutions to access to forced gatherings and further international informative businesses. Not with standing learning whenever teachers also find teaching abilities at all instance toward be alive the opportunistic plus capable on the way to benefit from them. Mobile technologies and seamless communication technologies support training and knowledge all days of week and all hours. The choice of time to use in the 24x7 envelope and periods of time are the challenges that future teachers will face (Lawal, H. S., 2003). Thus, ICT tools have finally enabled training to democratize instruction. Especially in developing nations, for example, India, the successful utilization of ICT tools for education can connect the computerized separate. ICT can enhance the nature of knowledge in various courses, through increasing the motivation and support of students, by facilitating the obtaining of fundamental abilities and improving educator training. ICTs are additionally transformational tools, when utilized suitably, can elevate a move to a focal student's condition. ICTs, individual computers, and Internet advancements offer better suggestions for teaching and learning as exposed to allowing teachers and understand what they have officially done in a superior manner.

Availability of ICT - ICT Tools to learn (Yusuf, M. O., 2005). Videos, television and multimedia programs that combine text, sound and color animation, can be used to provide original and challenging content that will engage students in the learning process. Interactive radio also uses sound effects and songs Dramatization, comic plays, and other performance conventions to force students to listen and engage more in lessons that are delivered. Few respondents' folks expressed their belief that their kids felt additional intended than before during this reasonably room teaching instead of the standard 45-minute lecture. ICTs change the characteristics of problems and learning tasks, thus playing an essential function as a mediator in cognitive development, and promoting the acquisition of general cognitive competencies as ~~needs~~ ~~say to live in our~~ knowledge society , the impact of ICT will support how students learn to increase. ICT learning approaches offer many opportunities for practical learning by providing and supporting resource-based situations, focusing on students,

Alhamd Multidisciplinary Research Journal

and enabling learning to relate to context and practice. (Wang, L, Ertmer, P. A. & Newby, T. J. 2004)

Their lectures were more appealing and dynamic with multimedia, and then again understudies could get the exercises they were instructed effortlessly. Since they found the elegance extraordinarily thrilling, the teachings have retained their minds longer and which upheld them at some point of the exam time frame. More than a few another sort of ICT, organize associated PCs can increase students' inspiration as they combine the wealth of media and other ICT with the hazard to speak with real people and take a hobby in real-global occasions. ICT-advanced mastering is targeted at understudies and for a dedication. Not at all like static, literary or printed instructive methods, has ICT-upgraded learning perceived the presence of a wide range of learning ways and a wide range of ideas of information. ICT enables students to find and investigate instead of merely listening and remembering. The World Wide Web (WWW) likewise gives a global digital display of understudy paintings (Dyba. T, 2001). ICT can connect to and encourage understudies, and this has been referred to as an element affecting instant ICTs (Pfleeger. S.L, and Kitchenham B.A, 2001)

V. METHODOLOGY

A. *Research Design*

Quantitative technique was utilized to gather and examine the information obtained from every one of the respondents. A poll was self-created and finalized by the scientists previously being conveyed to the focused on gathering of respondents. The survey was outlined particularly to address inquire about destinations with respect to instructor's observation on utilization of ICT tools in secondary schools in Attock District of Pakistan.

B. *SAMPLE AND INSTRUMENT*

For the choice of sample, a plain arbitrary sampling was done (Lethbridge. T.C, 1998). The strategy for sampling was functioning where everybody constituent of the populace have an equal probability to wind up a piece of test. Since each one constituent of populace contain an equal shot of flattering the examination part, this was gathered toward the most proficient example determination process. Significant secondary schools of Attock District were chosen in our overview. The poll was connected as an instrument for information gathering for overview. The poll was distanced in two segments, the outline and study appropriate (Kitchenham. B. A,

Alhamd Multidisciplinary Research Journal

Pfleeger. S.L, 2002). Objective of the survey changed as to approve outcomes as of secondary faculties of Attock District. Questionnaires contain the questions are as follow:-

- The demographic information
- The close-ended questions

Records approximately the undertaking, encounters, call of faculty as well as instructors turned into procured at the start of the poll. This statistic records turned into utilized to verify that the respondents have a place with secondary schools were sufficiently educated to reply questions. Close-completed inquiries discovered the information regarding province of ICT gear usage. This ballot observed the holes among Literature and Practice. Surveys for evaluating were evolved using making use of the Likert scale.

C. Data Collection Procedures

The survey was carried out in the secondary schools of Attock District to investigate the prevailing condition of recurring almost about the use of ICT tools with their effect along with associated problems. We had chosen a Cross sectional Survey to achieve statistics lying on single position specified within the time. We applied an elucidating a logical approach in our assessment. This approach for study changed into viable to collect information on the present open situation (Lethbridge. T.C, 1998). The teachers of secondary colleges of Attock District were applied in our evaluation as respondents to accumulate regarding data of ICT device usage; this clear strategy becomes becoming seeing that this capable us to allow the credit score of the similitudes and separations of a reaction of the respondents. The professional herself visited Major secondary faculties of Attock District to gather information from teachers applied in our have a look at. The ballot turned into related as an apparatus for facts collecting for this survey.

D. Data Analysis

After the accumulation of each one talented surveys using the respondents, the received information was recorded inside the spreadsheet of Microsoft exceed expectancies. One-sided imply of all additives in the ballot was predicted to get it. As per collected data, findings were preordained and these findings were investigated according to these outcomes. For Example, engaging dimension method used and recommend turned into utilized for analyzing facts and the data turned into displayed via tables and charts (Kitchenham. B. A, Pfleeger. S.L, 2002).

VI. RESULTS AND DISCUSSION

The reactions of the respondents of secondary schools have been supposed and after that on the bases of those results an exam becomes made. The statistics became labeled and interpreted at the bottoms of clean dimension approach, for instance, ordinary charge and meant. The data became also display in the Graphic form. The evaluation of the acquire records as follows:

Table I. Usage of ICT Gear				
Usage of ICT Gear	Percent (%)	Avg. (%)	Min. (%)	Max. (%)
PC/Laptop	5.6	3.8	2.5	5.6
Web Browser	3.5	3.8	2.5	5.6
Microsoft Office	5.2	3.8	2.5	5.6
Instructional Films	2.5	3.8	2.5	5.6
Slide Projector	2.9	3.8	2.5	5.6
Printed Materials	3	3.8	2.5	5.6
Radio Cassette Recorder	4	3.8	2.5	5.6

This is evident from the Table I that average usage of ICT gear is 3.8%, min. usage is 2.5% while Max. Usage is 5.6%.

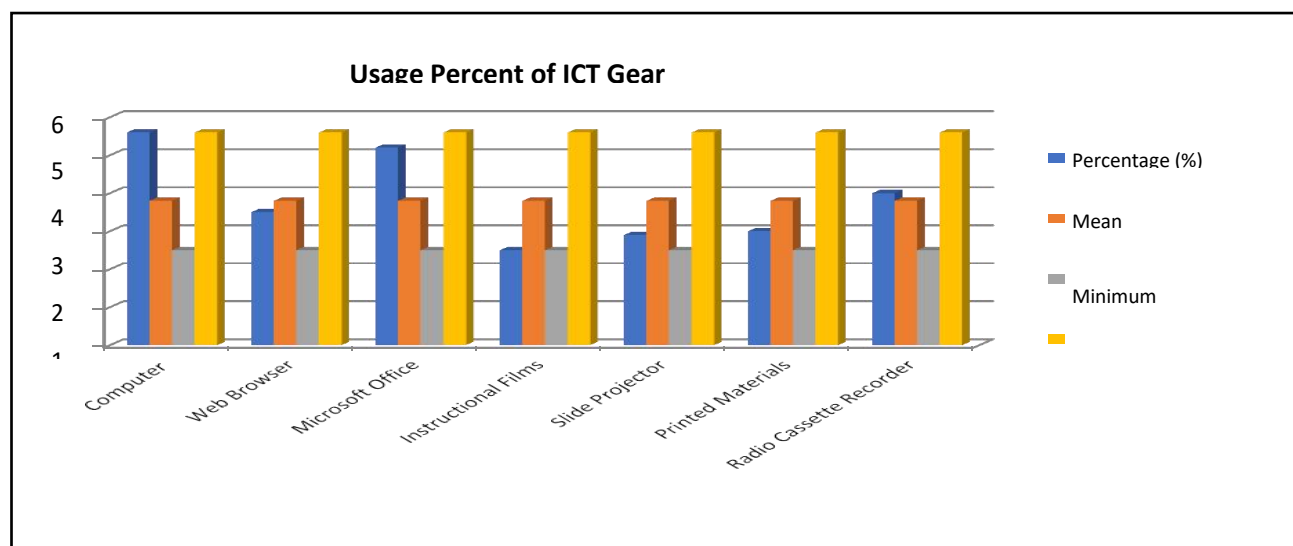


Fig.1. Usage Percent of ICT Gear

Alhamd Multidisciplinary Research Journal

It is clear from Fig.1. that the Avg. of usage of ICT gear is 3.8%, min. usage is 2.5% and max. usage is 5.6.

Table II. Effects of ICT Gear				
Effect of ICT Gear	Percent (%)	Avg. (%)	Min. (%)	Max. (%)
Very High	35.4	20.8	2.5	35.4
High	27.6	20.8	2.5	35.4
Medium	27.2	20.8	2.5	35.4
Low	11.5	20.8	2.5	35.4
Ignore	2.5	20.8	2.5	35.4

The Table II suggests that the avg. effect of ICT equipment is 20.8%, the min. effect is 2.5% and max. effect is 35.4%. From Fig.2 it is evident that the avg. effects of ICT gear are 20.8%, min. effects are 2.5% and max. Effects are calculated as 35.4%.

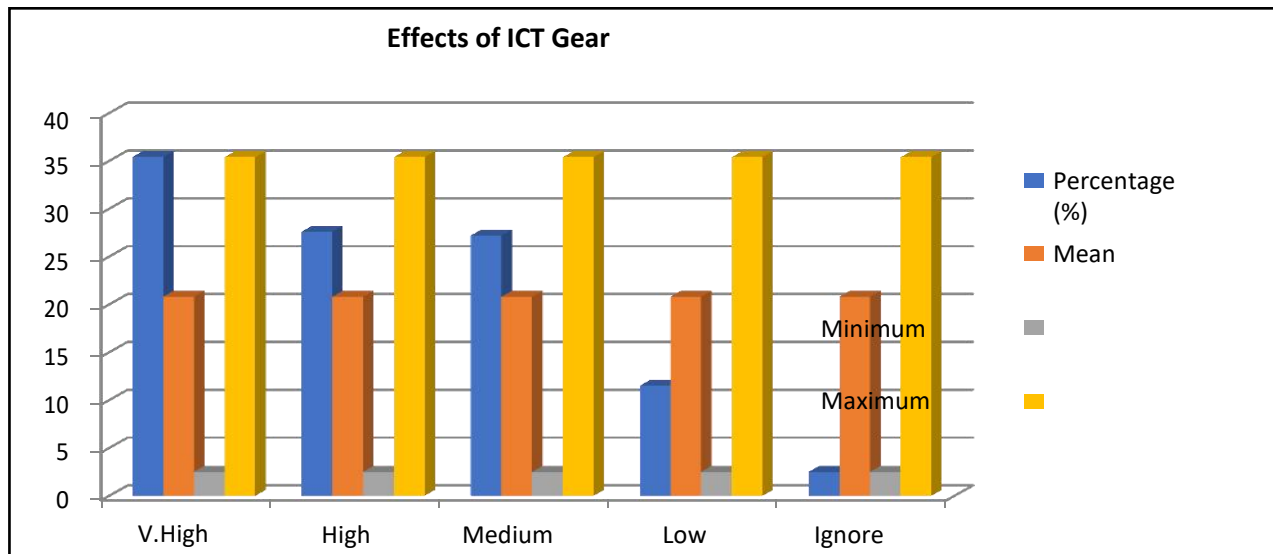


Fig.2. Effects of ICT Gear

Table III. Problems of ICT Gears				
Problems of ICT Gear	Percent (%)	Avg. (%)	Min. (%)	Max. (%)
Strongly Agree (SA)	50.7	35	5.6	60.4
Agree (A)	60.4	35	5.6	60.4
Neutral (N)	7.6	35	5.6	60.4
Strongly Disagree (SD)	48.3	35	5.6	60.4
Disagree (D)	5.6	35	5.6	60.4

From the Table III it is clear that avg. problems faced in using ICT equipment is 35%, Min. Problems are 5.6% and Max. Problems are found to be 60.4%.

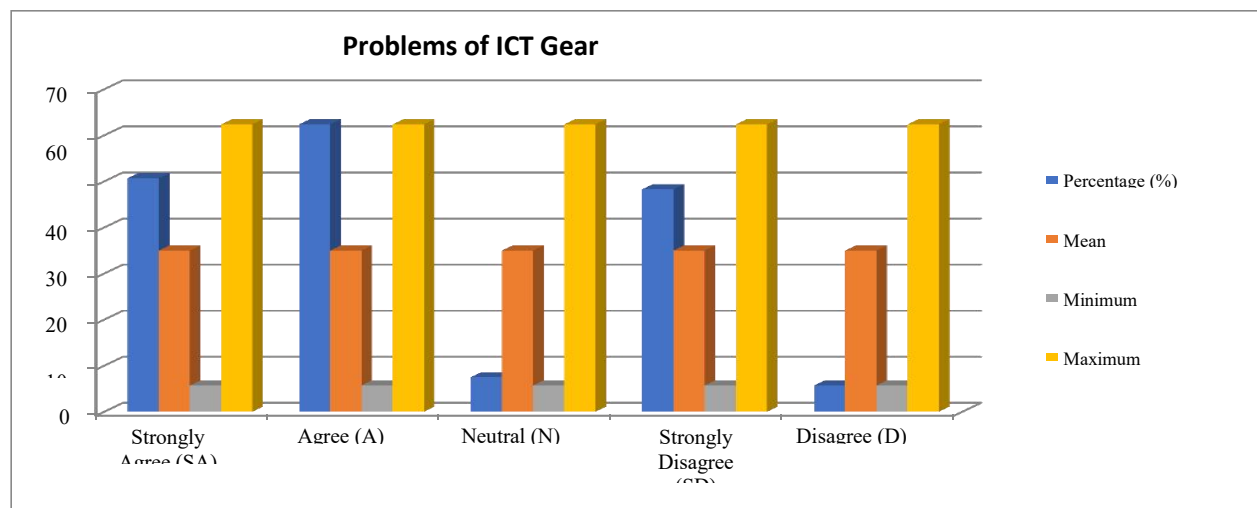


Fig.3. Problems of ICT Gear

From Fig.3. it is evident that the avg. problem faced in using ICT gear is 35%, Min. Problems are 5.6% and Max. Problems are 60.4%.

VII. CONCLUSION AND FUTURE WORK

Major point of the research was to examine the connection among the utilization, effect and problems of an information or correspondence innovation ICT equipment with the viability of execution by the high school instructors. There is a definitely the usage of ICT tools is very low

Alhamd Multidisciplinary Research Journal

by high school instructors of Attock District. Teachers are not master and completely mindful of the effects of ICT gear usage on educator training. The utilization rate of ICT equipment is very small. Therefore ICT equipment has no place in classrooms. Schools are not sufficiently benefited from these equipment. Teachers do not have the learning of the effect of ICT tools. Teachers are facing issues towards getting the ICT tools. This examination will offer investigation to the schools of other undeveloped urban areas of Pakistan. In future, it is desired to provide guidelines to fill the extracted gap of the research. Additionally, the guidelines will be applied to different education areas of under developed areas of Pakistan. Finally, the results will be compared to get the effectiveness of the research.

REFERENCES

- Al-Bataineh, A., & Brooks, L. Challenges, advantages and disadvantages of instructional technology in the community college classroom. *Community College Journal of Research and Practice*, 27, 473-484.2003.
- Amedeker, M. K. "Reforming Ghanaian Teacher Education Towards Preparing an Effective Pre-service Teacher". *Journal of Education for teaching* Vol. 31, No. 2, pp. 99-110.
- Braun, J. A., & Kraft, C. Using technology to learn from travelmates' adventures. *Social Studies and the Young Learner*, 7 (3), 8-10. 1995.
- Demetriadis, S., Barbas, A., Molohides, A., Palaigeorgiou, G., Psillos, D., Vlahavas, I., Tsoukalas, I., & Pombortsis, A.. Cultures in negotiation: teachers' acceptance/resistance attitudes considering the infusion of technology into schools. *Computers & Education*, 41, 19-37.2003.
- Dyba, T., "An instrument for Measuring the key Factors of Success Process Improvement", *Journal of Empirical Software Engineering*, vol.5, no. 4, pp. 357-390.2001.
- Harris, S. Innovative pedagogical practices using ICT in schools in England. *Journal of Computer Assisted Learning*, 18, 449-458.2002.

Alhamd Multidisciplinary Research Journal

- Kington, A., Harris, S., &Leask, M. Innovative practice using ICT in schools: findings in two case studies .*Management in Education*, 16 (1), 31-35, 2003.
- Kitchenham. B. A and Pfleeger. S.L, “Principles of Survey Research Part 5: Populations and Samples”, *ACM SIGSOFT Software Engineering Notes* Volume 27 No 5. 2005.
- Lawal, H. S. “Teacher Education and the Professional Growth of the 21st Century Nigeria Teacher”. *The African Symposium*, Vol. 3(2).2003.
- Lethbridge. T.C, “A Survey of the Relevance of Computer Science and Software Engineering Education”, In *Proceedings of CSEE&T'98*, February 22-25.1998.
- Mac-Ikemenjima, D. “e-Education in Nigeria: Challenges and Prospects”. Paper presentation at the 8th UN ICT Task Force Meeting April 13-15, 2005 Dublin, Ireland.2005.
- Mayo, N. B.,Kais, L. T. &Tanguma, J..Longitudinal Study of Technology Training to Prepare Future Teachers. *Educational Research Quarterly*, 29(1), 3-15.2005.
- Ololube, N. P. “School Effectiveness and Quality Improvement: Quality Teaching in Nigerian Secondary Schools”. *The African Symposium*, Vol. 5(4), pp. 17-31.2005.
- Osunde, A. U. &Omoruyi, F. E. O. “An Evaluation of the National Teachers Institute’s Manpower Training Program for Teaching Personnel in Mid-western Nigeria”. *International Education Journal* Vol 5, No 3, pp. 405-409.2005.
- Painter, S. R., “Issues in the observation and evaluation of technology integration in K-12 classrooms” .*Journal of Computing in Education*, 17(4), 21-25. 2001
- Pfleeger. S.L, and Kitchenham B.A, (2001), “Principles of Survey Research Part 1 Turning Lemons into Lemonade”, *ACM SIGSOFT Software Engineering Notes* Volume 26, 6 November.
- Rogers, E. M. *Diffusion of innovations* (4th Ed.), New York: The Free Press.1995.
- Tomei, Lawrence. (2006). *Taxonomy for the Technology Domain*.
10.4018/9781591405245.ch005.
- UNESCO. “Information and Communication Technologies in Teacher education: A Planning Guide”. Paris. UNESCO. 2001.
- Wang, L, Ertmer, P. A. & Newby, T. J. Increasing preservice teachers’ self-efficacy beliefs for technology integration. *Journal of Research on Technology in Education*, 36(3), 231-250.2004.

Alhamd Multidisciplinary Research Journal

- Watson, D. M. Blame the technocentric artifact! What research tells us about problems inhibiting teacher use of IT .In G. Marshall, & M. Ruohonen (Eds.), Capacity Building for IT in Education in Developing Countries (pp.185-192), London: Chapman & Hall.1998.
- Wheeler, S. Information and communication technologies and the changing role of the teacher. *Journal of Educational Media*, 26 (1), 7-17.2001.
- Woodrow, J. E. Locus of control and student teacher computer attitudes. *Computers& Education*, 14 (5), 421-432.,1992.
- Yusuf, M. O. “An Investigation into Teachers' Self-Efficacy in Implementing Computer Education in Nigerian Secondary Schools”. *Meridian: A Middle School Computer Technologies Journal* Vol. 8, Issue 2.2005.
- Zhao, Y. & Cziko, G. A. Teacher adoption of technology: a perceptual control theory perspective. *Journal of Technology and Teacher Education*, 9 (1), 5-30.2001.