COMPETENCY NEEDS OF METAL WORK TEACHERS IN THE USEGE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN TECHNICAL COLLEGES IN KOGI STATE

BY

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2007/1/27294BT

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY,

MINNA

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION SCHOOL OF SCIENCE AND SCIENCE EDUCATION, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

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CERTIFICATION

I, Agbata, Damian Ufedo with matric number; 2007/1/27294BT an undergraduate student of the department of industrial technology education certify that the work embodied in this project is original and has not been submitted in part or full for any other diploma or degree of this or any other university.

_____ _____

Name Signature and Date

APPROVAL PAGE

This project has been read and approved as meeting the requirements for the award of B. Tech Degree in Industrial and Technology Education of the Department of Industrial and Technology Education, School of Science and Science Education, Federal University of Technology, Minna.

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Supervisor	Sign/Date
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External Supervisor	Sign/Date

DEDICATION

This research work is dedicated to God Almighty and to my parents, Sir and lady Knight D.I. Agbata, you are the best. The work is also dedicate to my friends and well-wishers, I wish to say a great thank you for all your efforts during the course of my research

ACKNOWLEDGEMENTS

In the name of Jesus, the gracious king, unto him all praise is due. I acknowledge the leadership of my supervisor in person of Mallam, Abdul Bello Kagara, you are not just a lecturer but a great teacher worthy of emulation may God Almighty reward you. I wish to express my sincere thanks to all the staff of ITE department for their support through out my academic period.

To my family members, my Dad Sir D.I. Agbata and, Mum Lady Knight Anthonia Agbata words cannot express who you are to me, I want to say a big thank you for your support towards the successful completion of my course, despite everything you were there for me. To my brother's Mr Lwanga Agbata, Mr Martins Agbata and Master Anthony Agbata, I thank you all. To my sister Mrs. Ahamefule Joy Uyo and Miss Josephine Lami Agbata, I love you all.

ABSTRACT

The study was designed to determine competence needs of metalwork teacher in the usage of information and communication technology (ICT) in technical colleges in kogi state. Four research questions and two hypotheses were formulated to guide the study, 47 items questionnaire was used to collect data for the study. My research is a survey research. It involves the use of a questionnaire to determine the opinion and response of respondents, this study cover four technical colleges in kogi state, namely: Government technical college Idah, Government technical college Odu- Ofomu, Government technical college Ankpa, Government technical college Okene. The target population for this study consists of 20 metalwork teachers in technical colleges in kogi State and 12 administrators (i.e. the principals and vice principals), The instrument used for data collection for the study was questionnaire It contains five (5) sections; Section A contains personal data, section B deals with the literacy level of metalwork teachers in the usage of ICT gadgets as an instructional aides, section C deals with the experience of the metalwork teachers in the usage of ICT gadgets, section D deals with the resources needed in performing demonstration using ICT gadgets, section E deals with the strategies that will be adapted for standardizing the use of ICT gadgets in teaching and learning process. Data obtained were analyzed using frequency count, mean, standard deviation and z-test statistics. The null hypotheses were tested at 0.05 level of significance. The findings of the study shows that metalwork teachers did not know how to use projector as a teaching aid tools, They lack confidence in usage of ICT gadgets to teach, Computer system should be used for collection of data, Hardware and Software should be provided for teachers. The following recommendation was made; that the faculty board should organize seminars with training sections to educate metalwork teachers on the usage of Information and communication technology to facilitate teaching and learning process, the government should provide more ICT gadgets in every department in the technical colleges, the curriculum planners should integrate ICT curriculum and enforce its use in instruction. The faculty board should organize seminars with training section to educate teacher and student teacher on ICT and how to use it. There should be an alternative source of power supply such as standby generator; The ICT gadgets used by the metalwork teachers should be adequately maintained.

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CHAPTER ONE

INTRODUCTION

Background of the Study

The developments in technology have made significant impact on our environment, as well as the demand of the society. Acknowledging the effect of new technologies at the work place and in our everyday life, today educational institution try to change the pattern of educational program and classroom facilities in order to minimize the teaching and learning gap between today and the future. This restructuring process requires effective integration of technologies in to existing context in order to provide teachers with knowledge of specific subject areas to improve meaningful learning and to enhance vocational productivity.

According to Bucher (2003) Information and communication technology ICT is electronic technologies for collecting, storing, processing and communicating information. They can be separated into two main categories; (i) those which process information, such as computer systems and (ii) those which disseminate information, such as telecommunication system. The following deduction where made

1. ICT carry out the following function; collecting information, storing information, processing information; and communication information.
2. ICTs are technologies, equipment and methods used to handle information. This include; computer, telecommunications and electronics.
3. ICT may cover both ‘old’ and ‘new’ technologies use for handling information from paper, pencil.

Information and Communication Technology (ICT) is defined as computer based tools used by people to work with the information and communication processing needs of an organization. It encompasses the computer hardware and software, the network and several other devices (video, audio, photographic camera, etc.) that convert information (text), images, sound, motion, etc) into common digital form. Information and communication technology create unique electronic communication system through which teacher and student alike could enlarge their shear of cognitive set which all know what each other is thinking (encyclopedia 2004)

According to Wali (2001) information technology (IT) comprise of various kinds and sizes of computers. The computers are connected via telephones to facilitate the storing of the data they house. The data comes in many forms; sound and pictures. This definition places much emphasis on computers as information technology. It encompasses the computer hardware and software, the network and several other devices (video, audio-visual camera, projector etc) that convert information (text), image, and sound motion and so on into common digital form. The strength of a society is measured by its technological strength. The change that occurs in a society is due to this "power tool" called technology. The change can be socially, economical, educationally; religious, culturally etc Information and Communication Technology does not only bring about change in our communication (information) but also changes the way we think and how we view our world. The development of a nation or a society is measured by the country technologically development. For if a nation is not technologically developed, such nation will always rely on foreigners or less sufficient hands.

Awolowo (2004).Affirmed that there is no doubt that Nigeria has not had its own share of technological development in every system in the nation most especially the educational system. It must be noted that the ICT is only a means to amend not something that is profoundly

changing education but its impact is our major concern on information and communication technology and the school system. The metalwork teachers who are the teachers that make good use of ICT so as to prepare themselves for the future. This will not only transform the school system but bring about tremendous change in the teaching and learning system and this will help them to define it professionally. In Nigeria the need for well qualified teachers has gained pre-eminence because it is considered that teacher education is a means of not only providing teachers with the necessary skills and knowledge needed to adequately carry out their teaching jobs as well as for professional growth

Gaynor (2003) technology education is the process by which society deliberately transmits its cultural heritage through school, colleges, universities and other institutions

Yasemin (2008). Said in order to achieve the above mentioned purpose in education, information and communication technology (ICT) one could argue is an essential ingredient that could help bring these gains and benefits to technical colleges. Realistically, several researchers admitted that there are problems abound in educational system that ICT could help improve

United state distance learning association USDLEA (2002). Some teachers in Nigerian technical collages find it difficult to effectively tally their ICT instructional materials such as computers, audio visual aids, slides, video clip, electronic white boards, and electronic conferencing materials and so on to the goals of their instructional objectives, which instigate information search and attribution formulation. That is why this exploration measured and examined the way in which ICT instructional materials used in schools are deemed acceptable and good for students 'academic achievements from the perspective of a developing country. It looks at teachers' appropriate selection. Preparation and use of relevant ICT instructional material, as

well as their effectiveness in the operation of projected equipments to aid teaching and learning. Besides, we also recognize that the intimidating work environment has been insinuated to suggest a sense of weakness towards teachers' ICT instructional material utilization competencies in Nigerian secondary schools because of the shortage of fund to purchase the needed ICT instructional materials

ChweeBeng Lee (2007). Besides the importance of being able to explain and predict such instructional material utilization competencies has led to a number of studies particularly from educational research literature concerning ICT instructional material utilization indicates that ICT material utilization competence tend to vary with teachers. Although professional teachers as against non –professional teacher has been recorded as the most dominant with high ICT competency rate. This observation has been attributed to their exposure to basic theories and practices of educational technology.

Statement of the Problem

Information and communication technology have become an indispensible part of the contemporary world. The school system globally has been equally being affected in a numbers of ways. The use of information and communication technology as presentation tools through over head projectors, television, electronic white boards, guided web tours where students can simultaneously view the resources on computer screen, (Alfred 2008). The information and communication technology gadgets promote classroom understanding and discussion about difficult concepts especially through the display of simulation. Unfortunately, it is sad to note that most technology teachers seems not to have confidence and understanding in the use of ICT during teaching and learning process, some schools seems not to have these facilities at all and

some that has these facilities seems not to be putting them in to use, what is responsible for this is not quite certain. Hence the need to ascertain the competency of metalwork teachers in the usage of ICT in teaching- learning process in technical colleges in kogi state.

Purpose of the study

The main purpose of this study is to identify the competence needs of metal work teachers in the use of information and communication technology (ICT) in technical collages in kogi state. Specifically this study seek to

1. Identify the level of literacy of metalwork teacher in using of information and communication technology ICT gadgets as instructional aid
2. determine the experience of metalwork teacher in using information and communication technology ICT gadgets for teaching metalwork courses
3. Determine the availability of resources needed in performing demonstration using information and communication technology ICT gadget.
4. Identify the strategies that will be adapted to standardize the use of information and communication technology ICT gadget in teaching and learning process.

Significance of the Study

The study will be of benefit to the students in the usage of information and communication Technology in the academic pursuit. This will be owed to the use of a modern, interesting and effective method of instruction.

Also Students learning rates and retention will also be enhanced and they will be active participants in the teaching and learning processes since learning with computer system is student-centered, pleasurable and fascinating.

Students will become computer literate when exposed to the usage of information and communication technology.

The study is not gender sensitive, the results of these comparisons will provide data that will be beneficial to the principals of technical colleges, educationists, parents, researchers and others, on the areas of focus for further researches and development. This will encourage the technical college authorities to adopt the usage of information and communication technology as method of impacting knowledge to the learner.

Scope of the Study

The study is on competency needs of metalwork teachers in the usage of ICT gadgets as instructional aid, the experience of the metalwork teachers in the usage of ICT gadget to teach metalwork courses, the availability of resources needed to carry out demonstration in using ICT gadget and the strategies that will be adopted in the use of ICT gadgets in teaching and learning process.

Research Questions

The following questions were developed in carrying out the study;

1. What is the literacy level of the metalwork teachers in the usage of information and communication technology ICT gadget as an instructional aid?
2. What is the experience of metalwork teacher in usage information and communication technology ICT gadget in teaching
3. What are the resources needed in performing demonstration using information and communication technology ICT gadgets?

4. What are the strategies to be adopted for standardizing the usage of information and communication technology ICT gadget in teaching and learning process?

Hypotheses

The following hypotheses were tested at 0.5 level of significance.

Ho1: There is no significant difference in the mean response of metalwork teachers in technical colleges and the school administrators with regards to literacy level in the usage of ICT gadget as an instructional aid.

Ho2: There is no significant difference between metalwork teachers and the school administrators with regards to the resources needed in performing demonstration using ICT gadgets.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter, work related to the present study was reviewed. The following areas were discussed.

1. Meaning of information and communication technology.
2. The role of Information and communication technology in instruction
3. Information and communication technology and teacher education
4. Communication skills
5. Factors hindering the use of information and communication technology in education.
6. Effect of information and communication technology on education
7. Summary of related literature

Meaning of information and communication technology

Information and communication technology (ICT) refers to technologies that provide access to information through telecommunications. It is similar to the information technology (IT), but focus primarily on communication technologies. This includes the internet, wireless networks, cell phone, and other communication medium. Learning through ICTs is more effective as they provide opportunities for using multiple technologies (video, computer and telecommunication). Government recognized that the success of any education system depends on the teachers

The American national council for educational technology (ANCET 2002) defined ICT as the handling and promoting of information wing electronic devices. This has result in wide spread of computer all over the world as well as Nigeria. This ICT is now found in private sector, public

sector, industries, education, government, commerce, entertainment and homes. In fact, information and communication technology is a part of modern society.

Information and Communication Technology (ICT) is defined as computer based tools used by people to work with the information and communication processing needs of an organization. It encompasses the computer hardware and software, the network and several other devices (video, audio, photographic camera, etc.) that convert information (text), images, sound, motion, etc) into common digital form.

Fredrickson,(1999). Define information and communication technology as a tool of communication for obtaining and getting in touch with any part of the world by mere touch of a combination of key board button

Akinnoyewa,(2003). It can be deducted that computer is the aggregate of the potential inherent in computing micro-electronically telecommunication audio-visual, video cameras, and digital cameras and so on to manage information or to communicate in digital form.

Yusuf (2005) also made a theoretical analysis of the Nigerian national policy for information technology (FRN, 2005). The study on one hand pointed out that the national policy on the IT is inadequate to impart positively on the Nigerian education system, as philosophical from if its reference is market driven. On the other hand, he provided some suggestions to ensure maximum exploration of ICT potential in Nigerian school system.

The role Information and communication technology in instruction

The role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy

Rosen and well,(1995). We are now in the era of information technology, Nigerian need ICT to aid teaching and learning and educational management. In recognition of the prominent role of ICT advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate ICT into education in Nigeria FRN (2004).

Yusuf (2004) noted that there is relatively between the ICTs and students learning outcome. ICTs offers great potential in enhancing students learning by offering to them constructive approach to learn. The first stage of ICT which is called "topicality" that is, ICT is the topic (Collis and Moonen, 2001).

Gattiker, (1992) stated that access to computer (among the learners) is known to be associated with high level of computer literacy. It has been found that among the time spent working with the computer is significantly related to learners 'competence to working with the computer (open et,al 1999). Faculty also use computer on regular basis to work from home, conduct scholarly writing create presentations, conduct research using internet resources and conduct data analysis (Sax E.O. 2000). For example computer are used in education (i.e. teaching and learning), science and technology, engineering, informal training and problem solving therefore it is made to be part of the national education system (FRN 1998).

Information and communication technology and teacher education Information and communication technologies (ICTs) are a major factor in shaping the new global economy and producing rapid changes in society. Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other

fields. They also have the potential to transform the nature of education-where and how learning takes place and the roles of students and teachers in the learning process.

Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. For education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country. To accomplish these goals, teacher education institutions must work closely and effectively with K-12 teachers and administrators, national or state educational agencies, teacher unions, business and community organizations, Politicians and other important stakeholders in the educational system. Teacher education institutions also need to develop strategies and plans to enhance the teaching-learning process within teacher education programmes and to assure that all future teachers are well prepared to use the new tools for learning.

Yusuf (2004). Noted that in order to husband the potentials of ICTs most nation of the world, including Nigeria, have evolved national information and communication technology policy to serve as a frame work for ICT integration in all parts of society. Nigeria national policy on information technology (FRN, 2001) mission statement recognized the need “to use IT” for “education”. The policy stressed that information and communication technology must be used:

1. To empower the youth IT skills and prepare them for global competitiveness.
2. To integrate IT into mainstream of education and training.

3. To establish new multifaceted IT institution or centre of excellence to ensure Nigerians compositeness in international markets.

Furthermore, the national policy on education (FRN, 2004) stated that ICT should be integrated into education in Nigeria. For the role it plays in advancing knowledge and skill necessary for effective functioning in the modern world. Nigeria as developing country should use computer within the school system, for it has become an important medium in instructional delivery and instructional management (Yusuf, 1998).

Information and communication technology if employed in Nigeria school system can enhance teacher's professional development, facilities administrative duties and make teaching easy

(Lopez, 2003). In more and advanced industrialized nations, there has been a staggering amount of research and publication related to ICT use for educational purpose (Lyamu and Ogiegdaen 2005).

Similarly, Poole (1996) noted that most expert in the field of education agreed that, when properly need, information and communication technology hold great promise to improve teaching and learning and provide work force opportunities. Student's attitudes towards learning and their self concept improved consistently when computer were used for instrument.

Factors Promoting the Implementation of Information and Communication Technology in Education, this suggested ways that may assist school and teachers to make better use of ICT in their teaching. In respect to this, British educational communications and technology agency (Beta 2004) conducted a web site survey research on factors that encouraged teachers to make regular integrated use and implementation of ICT in their classroom. Based on this study, Becta

(2004) identified two major strategies, which can promote the use of the ICTs. These strategies are school- based strategies and external- based strategies.

Communication skills

Communication skills or language competence of technical (metalwork) teacher is not less important than the command of trade skill, in establishing good classroom management. Communication skills should form an important part of the training given to trade instructor.

Glasser (1977) who developed this approach arguers that students are rationale beings, who must be given opportunities to make choices, decision and commitment,

It is obvious that communication has very important part to play in the teaching of metalwork. It is the corner stone for the establishment of report and good human relationships between the teacher and the students. Communication is used to enhance human reaction in any organization and there is need for effective communication so that there will be free flow of the information. Effective communication brings about creation and modification, which enhance the growth of the organization and effective job– performances of teachers.

Prigge (1977) observed that communication skill is highly needed for job performance and advancement, the success and failure for effective teaching of metalwork.

Evans (1978) asserted that when communication among individuals fails, their capacity for effective cooperation and production also fail. The cordial relationship with metalwork teachers and their students can hardly be achieved without skillful art of communication.

Ekairko (1983) rightly pointed out the cost of poor communication include misunderstanding waste, inefficiency, poor morale; ill feeling, confusion and many other negative consequences.

Therefore, to correct all these negative consequences there is need for the organization members to communicate effectively using various communication competencies.

Factors hindering the use of information and communication technology in education

The factors that affects the use of information and communication technology in education varies from availability of resource and materials, management and as well as student attitudes and disposition.

Eres (1987) observed that amongst such factors that militate against the use of information technology in education are the cost factor, problems of foreign exchange required for the purchase of computers, lack of library and information standards, inadequate and unreliable telephone network systems, shortage of manpower, low prestige of information professions, difficulty in recruiting specialist and lack of continuing education.

Yuen, 2002 described the factors militating as those obstacles affecting the use or integration of ICT in education.

Ogiegbaen&Iyamu (2005) also identified five major obstacles to the use of ICT in Nigerian technical collages. These obstacles are cost, weak infrastructure, lack of skills, lack of relevant soft ware and limited access to the internet. Similarly, Stephen &plowman

Abolade& Yusuf (2004) identified seven major factors that militates the effective use of ICTs in Nigeria teacher education programme. These are lack of technically experienced lecturers/teachers/limited ICTs facilities inadequate course content for ICTs lack of clear directions on teacher training on ICT in Nigeria national policy on information technology

(NNPIT), lack of leadership by professional organizations, problem of electricity and lack of access to ICTs in trainee teacher's field experience.

Kamba (2008) discovered the problem of IT especially internet use in Nigeria libraries to include inadequate and poor information infrastructure. That the country Nigeria lies within the tropics where dust, humidity and heat rein supreme. The problems of environmental control are compounded by the unreliable electricity supply which makes difficult to maintain a conducive computer environment. The available number of information technology engineers to service and maintain information technology hardware is insufficient.

Lack of technically experience lecturers/ teachers: These factors pointed out the incompetency of teachers and lecturers in patronizing the ICTs facilities in imparting instruction. The teachers/lecturers themselves were not taught through the ICTs facilities

Cost: Ogiegbaen and Iyamu (2005) opinioned that the exorbitant price of computer hardware and software make it difficult for individual to purchase it. Whereas, in the develop countries the computer hardware and software are cheap therefore very affordable, more so, the large number of public schools coupled with inadequate infrastructure such as classroom and cost of printers, monitors, paper disk drives make it difficult for most technical colleges in Nigeria to possess, the ICT facilities.

Oyesika and Oduwale (2004) in their study of the use of academic libraries discovered that majority of the users (students) do not have the requisite skills and as such shy away from the use of information technology. Lack of user education and time for practical work on the use of information technology was among the problem of students. They advocated that unit should be allocated to IT courses.

Limited ICT facilities; this is connected to the government inability to finance the schools to enable the purchase facilities and infrastructure for ICTs integration in education. As a result, classroom are not equipped for ICT usage, which therefore both teachers and trainers and trainee don't have access to ICT facilities and few available ones are meant for administrative duties only (Abolade and Yusuf, 2004).

Lack of skill: this relate to the inadequate information infrastructure, human skills and knowledge that will enhance integration of ICT in Nigerian secondary schools. No qualified technicians and personnel to manage the application of the ICTs and who can at the same time service and repair spoiled computers and facilities (Okebukola, 1997).

Aino (2004) identified the negative laissez affaires attitude of lecturer's students and libraries as other factors militating against the development and use of ICT in Nigeria

Fabry and Higgs, (1997) investigated the discrepancy between the level of technology use expected of teachers and the actual use and integration of technology in the classroom. Based on the investigation the study identified resistance to change, negative attitudes and lack of access to technology locations as the factors that caused gab between actual and expected use of technology, this militates against the integration of ICT in education

Anoa (2003) there is need for secondary school teachers in Nigeria to undergo training in educational technologies to enable them use computer in their teaching. Codson and Firpo, (2001) noted that students learning can only be improved if teachers can acquire techniques and tools that can enable them to develop computer based teaching activities.

Lack of access to ICTs in training teacher field experience: according to Abolade and Yusuf, (2005) this is connected to the condition and nature of the public school classrooms. The

classrooms are not technology rich environment, hence, students on practice teaching are exposed to chalk and board only instead of been exposed to computer/internet connected classrooms. This disadvantage becomes a factor militating against the use of ICTs in teacher training institution and other levels of education in Nigeria.

Oketunji (2000) identified some factors militating the use of information technology in education which includes access to adequate and reliable electricity, which service are usually restricted to urban centers while most of our educational centers are usually situated in the rural areas.

Lack of clear direction on teacher training on ICTs in the Nigeria national policy on information technology, (NNPIT): this factor is connected, according to Abolade & yusuf, (2004) inability of the national policy on information technology to sectional address education matters separately or independently, rather, education is subsumed under human resource development. Such a dilemma, stand a factor that militates against the use of ICTs, in Nigeria education system.

Lack of leadership by professional organizations: this implies to the lack of supplementary support, by professional organization or bodies toward integration of ICTs in teacher training in Nigeria, unlike in developed countries, organization such as computer association of Nigeria (CAN). National Association for Education Media Technology (NAEMAT). Did not impart on the use of ICTs in schools. This lack of support creates vacuum which hinders, ICTs integration in teacher education in Nigeria (Abolade & Yusuf, 2004).

Effect of information and communication technology on education

Technology has changed the way people live, work and learns. The use of technology in education is one of the main challenges for education policy makers (Zalzadeh 2006). Traditional method of education is no longer able to meet the need of today's learners. New technology

provides opportunities including the ability to tailor or aid learning to the individual (Aminpool 2007). There are three approaches to ICT in education that are often discussed.

- Information and communication technology in the form of lesson unit or workshop for student and teachers.
- Information and communication technology as a means of information storage and retrieval and a method of doing research
- Information and communication technology as a channel for delivering instruction.

There is no discussion of content in these approaches. The influence that information and communication technology can have on teaching method depends on the knowledge and skills of students and teachers, and the implementation of ICT in courses

(kousha 2006). The effect of ICT varies across disciplines. Medicine has been more affected than history, for example. Regardless of the discipline, however the advantage is that students and teachers are not limited by time and place (Fattahian 2004).

Educating teachers in information and communication technology

Teachers need special knowledge and skill including techniques of using software and hardware, selection and assessment of resources, use of information system, ability to search network and data bases as well as problem and research skill and the ability to teach users. Teachers should acquire these skills before entry job market.

Teacher's needs patient and initiative and a user oriented approach.ict education must include social and communicative skills. And teachers should have the ability to learn new skills and have complete mastering over them technical expertise is also important. Including the ability to

identify and retrieve useful data. Teacher's skills must meet the need of this new era (Mansouri and Pashootanizadeh 2007).

The cultural environment is also important the country information infrastructure, the value student put on information, attitudes of programmer, policy makers, and discussion maker, and the country level of technological development should be taken in to consideration as well (Vallejo 1998).

Requirement for improvement in information and communication technology.

A number of steps are necessary for ICT teaching to find a propel place in Nigeria, improve its quality and teachers who meet today's needs strategies include;

Reviewing ICT curricula

Changes in ICT have affected developing countries along with others. Educational programmes are longer fixed entities but are continuously changing and adapting (Hayatie1998). ICT has seeing rapid changes in all aspect of dealing with information ICT must be reviewed and rebuilt to acknowledge those changes (Jowkar and Hamdipoor 2001).some programs have done this. Mashhad Ferdowsi University reviewed it BA programme and made changes effective with 2003 – 2004 Tehran university Ahvaz ShahidChamran University, Alzhra University of Tehran have also made (Tahourie 2006). Tabriz University made a preliminary review in 2004- 2005 to accommodate ICT, including teaching 4unit of processing Persian and Roman scripts and presenting internet lesson. ICT programme need universal and continuous review. Moreover, would there be problems if new lesson are taught by the same old teachers?

Educating teachers and reviewing teaching methods

Selection and education of ICT faculty is very important. Norouzie in an interview with IBNA, compared Nigeria and French ICT discipline and stated that ICT teaching method in faculties have weaknesses which can be removed by knowing and interacting with faculties of develop countries. He suggested using group problem solving and collective wisdom in the department and using ICT, especially the internet, in education and research. The entrance of ICT today has made teaching attractive. ICT teachers learn to use new technology in education teaching this discipline would also be more interesting. In recent years using ICT in education has increased. With optimized use of ICT visual and electronic education might increase. In addition, sending teachers abroad to study and research and holding educational workshop for applying ICT in teaching using foreign skilled professors would significantly develop ICT education

The growth of ICT has had a profound influence on higher education. Today student can pursue scientific, educational, and research goals using the internet. The entrance of ICT into education has lead to review of educational programmes and teaching methods, curricula in light of the need of the students and the society. Continued reviews are needed to meet future needs. Teaching methods in many disciplines must change, and education must continue to incorporate ICT into teaching. For thisto be effective it necessary to educate teachers possibly by using foreign professors and / or other methods.Therefore they need to be given support and guidance to help them bring about these changes.

Summary of related literature:

Information and communication technology (ICT) refers to technologies that provide access to information through telecommunications. It is similar to the information technology (IT), but focus primarily on communication technologies. This includes the internet, wireless networks,

cell phone, and other communication medium. Learning through ICTs is more effective as they provide opportunities for using multiple technologies (video, computer and telecommunication). Government recognized that the success of any education system depends on the teachers

Information and communication technologies (ICTs) are major factor in shaping the new global economy and producing rapid changes in society. Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education-where and how learning takes place and the roles of students and teachers in the learning process.

Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. For education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country. To accomplish these goals, teacher education institutions must work closely and effectively with K-12 teachers and administrators, national or state educational agencies, teacher unions, business and community organizations, Politicians and other important stakeholders in the educational system. Teacher education institutions also need to develop strategies and plans to enhance the teaching-learning process within teacher education programmes and to assure that all future teachers are well prepared to use the new tools for learning.

Communication skills or language competence of technical (metalwork) teacher is not less important than the command of trade skill, in establishing good classroom management. Communication skills should form an important part of the training given to trade instructor.

Eres (1987) observed that amongst such factors that militate against the use of information technology in education are the cost factor, problems of foreign exchange required for the purchase of computers, lack of library and information standards, inadequate and unreliable telephone network systems, shortage of manpower, low prestige of information professions, difficulty in recruiting specialist and lack of continuing education.

Yuen, 2002 described the factors militating as those obstacles affecting the use or integration of ICT in education.

Technology has changed the way people live, work and learns. The use of technology in education is one of the main challenges for education policy makers (Zalzadeh 2006). Traditional method of education is no longer able to meet the need of today's learners. New technology provides opportunities including the ability to tailor or aid learning to the individual (Aminpool 2007).

The three approaches to ICT in education that are often discussed are as follows.

Information and communication technology in the form of lesson unit or workshop for student and teachers.Information and communication technology as a means of information storage and retrieval and a method of doing research. Information and communication technology as a channel for delivering instruction.

There is no discussion of content in these approaches. The influence that information and communication technology can have on teaching method depends on the knowledge and skills of students and teachers, and the implementation of ICT in courses

(kousha 2006). The effect of ICT varies across disciplines. Medicine has been more affected than history, for example. Regardless of the discipline, however the advantage is that students and teachers are not limited by time and place (Fattahian 2004).

Competency approach to the job of the teacher during pre-service education appears essential.

Bell (1980) defined competency base teacher education (CBTE) or performance based teacher education (PBTE) as the education in which objectives are determined on the basis of competencies perceived essential for daily living for an occupation.

CHAPTER THREE

METHODOLOGY

This chapter describes the research procedures used in carrying out the study. It focus on research design, area of the study, population of the study, instrument for data collection, validation of the instrument, administration of the instrument for data collection, method of data analysis and decision rules.

Research Design

The design of this research is a survey research. It involves the use of a questionnaire to determine the opinion and response of respondents. It gives room to the researchers to elicit information from respondents in technical colleges in kogi state.

Area of the Study

This study was carried out in kogi state, technical colleges which include:

1. Government Technical College, Idah
2. Government Technical College, Odu- Ofomu
3. Government Technical College, Ankpa
4. Government Technical College, Okene

Population of the study

The target population for this study comprised of metalwork teachers and the administrators i.e. (Principals and vice principals) in technical colleges in kogi state which consist of 20 metalwork teachers and 12 administrators. The entire population was used for the study hence: there is no need for sampling.

Instrument for data collection

The instrument used for collection data for the study was questionnaire It contains five (5) sections; Section A contains personal data, section B deals with the literacy level of metalwork teachers in the usage of information and communication technology ICT gadgets as an instructional aides, section C deals with the experience of the metalwork teachers in the usage information and communication technology ICT gadgets, section D deals with the resources needed in performing demonstration using information and communication technology ICT gadgets, section E deals with the strategies that will be adapted for standardizing the usage of Information and Communication Technology ICT gadgets in teaching and learning process.

Validation of the Instrument

The instrument for data collection was validated by the researcher's supervisor and two other lecturers in the Department of Industrial Technology and Education (ITE). All corrections and observations raised were effected before the production of final copy of the questionnaire.

Administration of the instrument

The questionnaire was administered personally to the respondent by the researcher and 75% of the copies were also collected by the researcher.

Method of Data Analysis

The data collected by the researcher was analyzed using mean score, standard deviation and t – test as statistical tools.

Decision rule

To determine the acceptance level, a mean score of 2.50 is computed in line with four point rating scale. Any items that attracts up to 2.50 and above was considered agreed and any item below 2.50 was considered disagreed. The acceptance level for the hypotheses testing is based on the degree of freedom (df = nl +n2-2) of 130 degree which gives a t – table value at 0.05 level of confidence of = 1.98. Therefore any item with t- calculated value less than ±1.98 was accepted while those equal or greater than ±1.98 was rejected

Real limits of number will be used in order to determine the level of agreement or disagreement of the respondents to the items. Real limits will be used to retain the sensitivity of the instrument.

Response	Rating	Real Limits
Strongly Disagreed (SD)	1	0.5-1.49
Disagreed (D)	2	1.5-2.49
Agreed (A)	3	2.5-3.49
Strongly Agreed (SA)	4	3.5-4.00

$\frac{4+3+2+1}{4} = 2.50$

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter deals with the presentation and analysis of data with respect to the research questions and hypotheses formulated for this study, the result of data analysis for the research questions were presented first, followed by those of the hypotheses tested for the study.

Research Question 1

What is the literacy level of the metalwork teacher in the usage of ICT gadgets as an instructional aid?

Table 1

Mean responses of metalwork teachers and Administrators with regard to the literacy level of usage of ICT gadgets as an instructional aid

N□= 12 N_2=20

S/N	ITEMS	X_1	X_2	X_t	Remarks
1	Use ICT gadgets as an instructional aid	1.75	1.83	1.79	Disagree
2	They are professionally trained before using ICT gadgets to teach	2.05	1.75	1.90	Disagree
3		2.15	1.75	1.95	Disagree
4	Use projector as a teaching aid tool	1.95	1.83	1.89	Disagree
5	They can Install software on computers	1.95	1.75	1.85	Disagree
6	Use Microsoft excel package to manipulate mathematical values	2.15	2.00	2.08	Disagree
7	Use Microsoft PowerPoint while in demonstration.	3.00	3.25	3.13	Agree
8	Access the internet	1.65	1.58	1.62	Disagree
9	Research based on the use of ICT gadgets	3.25	3.42	3.34	Agree
10	Use storage devices for storing information	2.05	1.83	1.94	Disagree
11	Assemble the ICT gadgets for demonstration purpose	2.00	1.75	1.88	Disagree
12	Install a local area network (LAN) for the school	1.85	1.50	1.68	Disagree
13	design a website	2.00	1.33	1.67	Disagree
14	Communicate using the ICT gadgets	3.05	3.58	3.32	Agree
15	Teach student the usage of the ICT gadgets	2.25	1.75	2.00	Disagree

Key

N_1 = Number of metalwork teachers $\overline{X}_1$ = Mean of metalwork teachers

N_2 = Number of Administrators $\overline{X}_2$ = Mean of Administrators

X_1= Average mean of technology teachers and Administrators

The data presented in table 1 show that the respondents disagreed with items,1, 2,3,4,5,6,8,10,11,12,13 and 15 with mean score ranging between 1.67 to 2.08 and agreed with items 7,9 and 14 with mean score ranging between 3.13to 3.34 respectively.

Research Question 2

What is the experience of metalwork teacher in the usage of ICT gadget for teaching?

Table 2

Mean responses of metalwork teachers and Administrator with regard to experience of metalwork teachers in using ICT gadgets

N□= 12 N2=20

S/N	ITEMS	X_1	X_2	X_t	Remarks
1	Metalwork teachers were given adequate training in ICT	3.00	3.33	3.17	Agree
2	Lack confidence in using the ICT gadgets to teach	2.50	2.75	2.90	Agreed
3	Government organized seminars/workshop regularly for metalwork teachers	1.85	1.67	1.76	Disagree
4	Most of the metalwork teachers use ICT gadgets for about five years	1.80	1.83	1.82	Disagree
5	Metalwork teachers use ICT gadgets in practical class	1.95	1.83	1.89	Disagree

Key

N_1 = Number of metalwork teachers $\overline{X}_1$ = Mean of metalwork teachers

N_2 = Number of Administrators $\overline{X}_2$ = Mean of Administrators

X_1= Average mean of metalwork teachers and Administrators

The data presented in table 2 shows that the respondents agreed with items, 1 and 2 with mean score between 2.90 to3.17. And disagreed with item 3, 4, and 5 with mean score ranging from 1.76 to 1.89

Research Question 3

What are the resources needed in performing demonstration in the using of ICT Gadgets?

Table 3

Mean responses of metalwork teachers and the administrators with regard to the resources needed in performing demonstration in the usage of ICT Gadgets

N= 12 N2=20

S/N	ITEMS	X_1	X_2	X_t	Remarks
1	Computer system	3.30	3.50	3.40	Agree
2	A projector	3.35	3.42	3.39	Agree
3	Internet service	3.25	3.17	3.21	Agree
4	Digital videos, cameras, audio visual aids, transmitter	3.15	3.42	3.29	Agree
5	Interactive white board	3.35	3.17	3.26	Agree
6	Buildings of large capacity	3.15	3.42	3.29	Agree
7	Electricity	3.05	3.33	3.19	Agree

Key

N_1 = Number of metalwork teachers $\overline{X_1}$ = Mean of metalwork teachers

N_2 = Number of Administrators $\overline{X_2}$ = Mean of Administrators

X_1= Average mean of metalwork teachers and Administrators

The data presented in table 3 shows that the respondents agreed with all the items, 1, 2, 3,4,5,6 and 7 with mean score ranging between 3.21 to 3.40.

Research Question 4

Table 4

What are the strategies to be adopted for standardizing the usage of ICT gadget in teaching and learning process?

S/N	ITEMS	X_1	X_2	X_t	REMARKS
1	Access to computer by the metalwork teachers	3.10	3.08	3.09	Agree
2	Train metalwork teachers on how best to use computer in education	3.15	3.58	3.37	Agree
3	Provision of standard facilities for telecommunication within schools in kogi state	3.30	3.33	3.32	Agree
4	Hardware and Software should be provided for teachers	3.25	3.33	3.29	Agree
5	Management should send the metalwork teachers to professional courses	3.30	3.17	3.24	Agree
6	Provision of latest technologies	3.05	3.33	3.19	Agree
7	Technical faults with ICT equipment should be rectify immediately	2.90	3.50	3.20	Agree
8	Air conditions should be installed in their ICT office	3.05	3.17	3.11	Agree
9	Government should sponsor the teachers through computer acquisition and training	3.35	3.42	3.39	Agree
10	Provision of WAN (Wide Area Networks) for both home use and distance learning.	3.05	3.58	3.32	Agree
11	Adequate of technology devices	3.15	3.33	3.24	Agree
12	Proper inventory of tools and equipment	2.90	3.42	3.16	Agree
13	Consultation in selecting and adopting ICT infrastructure	3.30	3.67	3.49	Agree
14	Subsidiary cost of equipment renewal	3.45	3.50	3.48	Agree
15	Appropriate of funding allocation	3.25	3.67	3.46	Agree
16	Cheap cost of the consumer of ICT	3.10	3.00	3.05	Agree
17	High partnership in support of ICT	3.15	3.17	3.16	Agree
18	Constant maintenance of ICT infrastructure	3.00	3.08	3.04	Agree
9	Teachers should be fully connected to internet	3.10	3.25	3.18	Agree
20	They cannot install local area network (LAN) for internets access.	3.05	3.33	3.19	Agree

Keys

N_1 = Number of metalwork teachers $\overline{X_1}$ = Mean of metalwork teachers

N_2 = Number of Administrators $\overline{X_2}$ = Mean of Administrators

X_1= Average mean of metalwork teachers and Administrators

The data presented in table 4 show that the respondents agreed with all the items 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19 ,20and 21 provided in the table with mean score ranging between 2.69 to 3.85.

Hypothesis One There is no significant difference in the mean response of metalwork teachers in technical colleges and the school administrators with regards to literacy level in the usage of ICT gadget as an instructional aid.

Table 5

T – test Analysis of the respondent regarding the literature level of metalwork teacher in the usage of ICT gadgets as an instructional aid

S/N	ITEMS	X_1	SD_1	X_2	SD_2	T-cal	Remarks
1	Use ICT gadgets as an instructional aid	3.15	3.17	1.01	3.17	-0.02	NS
2	There are professionally trained before using ICT gadgets to teach	3.10	3.08	0.99	3.08	0.02	NS
3	Government give scholarship to study on ICT	2.95	3.25	1.07	3.25	-0.31	NS
4	Use projector as a teaching aid tool	2.90	3.33	1.04	3.33	-0.43	NS
5	Install software on computers	3.05	3.00	0.97	3.00	0.06	NS
6	use Microsoft excel package to manipulate mathematical values	3.20	3.58	0.98	3.58	-0.36	NS
7	Use Microsoft PowerPoint while in demonstration.	3.30	2.75	0.84	2.75	0.67	NS
8	Access the internet	3.15	3.08	0.96	3.08	0.08	NS
9	Make research based on the use of ICT gadgets	3.15	3.33	0.85	3.33	-0.18	NS
10	use storage devices for storing information	3.45	3.50	0.59	3.50	-0.05	NS
11	Assemble the ICT gadgets for demonstration purpose	1.85	2.00	1.01	2.00	-0.24	NS
12	Install a local area network (LAN) for the	2.15	1.92	1.06	1.92	0.38	NS

	school						
13	Design a website	2.15	1.67	1.06	1.67	0.89	NS
14	Communicate using the ICT gadgets	3.23	3.17	0.89	3.17	0.06	NS
15	Teach student on how to make use of the ICT gadgets	2.15	1.92	1.11	1.92	0.38	NS

Keys

X_1 = Mean of metalwork teachers, SD_1 = Standard Deviation of metalwork teachers

$\overline{X}_2$ = Mean of administrators, SD_2 = Standard of administrators

T = t-test calculated, NS = Not Significant, S = Significant

Table 5 reveals that items 1,2,3,4,5,6,7,8,9,11,14 and15 were rejected indicating that there is a significant difference between the option of metalwork teachers and the administrators. The t-calculated are greater than t-critical value of ±1.98 at .05 level of significance. While items 10, 12 and 13 were accepted indicating that there is no significant difference between the respondents hence null hypothesis stated is accepted.

Hypothesis Two

There is no significant difference between metalwork teachers and the school administrators with regards to the resources needed in performing demonstration using ICT gadgets.

Table 6

T – test Analysis of the respondent regarding the experience of metalwork teachers in usage ICT gadgets

S/N	ITEMS	X_1	SD_1	X_2	SD_2	T-cal	Remarks
1	They depends on power supply when using the ICT Gadgets	3.25	3.50	0.89	3.50	-0.24	NS
2	Lack confidence in using the ICT gadgets to teach	3.25	3.33	0.83	3.33	-0.08	NS
3	The ICT gadget are affordable	2.05	2.08	1.02	2.08	-0.05	NS
4	There is enough infrastructure for carrying out the demonstration	2.15	2.00	1.06	2.00	0.24	NS
5	Limited access to internet facilities	3.15	3.42	0.85	3.42	-0.27	NS

Keys

X_1 = Mean of metalwork teachers, SD_1 = Standard Deviation of metalwork teachers

$\overline{X_2}$ = Mean of administrators, SD_2 = Standard of administrators

T= t-test calculated, NS = Not Significant, S = Significant.

Table 6 reveals that item 5 was rejected indicating that there is a significant difference between the option of metalwork teachers and administrators. The t-calculated are greater than t-critical value of ±1.98 at .05 level of significance. While items 1, 2, 3, and 4 were accepted indicating that there is no significant difference between the respondents hence null hypothesis stated is accepted.

Hypothesis Three

There is no significant difference between the mean responses of metalwork teachers and administrators with regard to the resources needed in performing demonstration using ICT gadgets

Table 7

T – test Analysis of the respondent regarding to the resources needed in performing demonstration in the usage ICT gadgets

S/N	ITEMS	X_1	SD_1	X_2	SD_2	T-cal	Remarks
1	A projector should be provided for free flow of communication	3.30	3.50	0.84	3.50	-0.24	NS
2	Computer system should be used for collection of data	3.35	3.42	0.79	3.42	-0.09	NS
3	Internet service should be made available for browsing the world	3.25	3.17	0.83	3.17	0.11	NS
4	Digital videos, cameras, audio visual aids, transmitter should be made available to communicate in digital form	3.15	3.42	0.96	3.42	-0.33	NS
5	Interactive wide board should be made available for demonstration	3.35	3.17	0.65	3.17	0.24	S
6	Buildings of large capacity is provided	3.15	3.42	0.85	3.42	-0.33	S
7	Electricity supply is available	3.05	3.33	0.97	3.33	-0.35	NS
8	0ther source of electricity are available	3.10	3.08	0.94	3.08	0.03	NS

Keys

X_1 = Mean of metalwork teachers, SD_1 = Standard Deviation of metalwork teachers

$\overline{X}_2$ = Mean of administrators, SD_2 = Standard of administrators

T= t-test calculated, NS = Not Significant, S = Significant

Table 7 reveal that items 5 and 6 rejected indicating that there is a significant difference between the option of operator and maintenance staffs. The t-calculated are greater than t-critical value of ±1.98 at .05 level of significance. While items 1, 2,3,4,7 and 8 were accepted indicating that there is no significant difference between the respondents hence null hypothesis stated is accepted.

Hypothesis Four

There is no significant difference between the mean responses metalwork teachers and administrators with regard the strategies for standardizing the use of ICT in teaching and learning.

Table 8

T – test Analysis of the respondent regarding the strategies for standardizing the Use of ICT in teaching and learning

S/N	ITEMS	X_1	SD_1	X_2	SD_2	T-cal	Remarks
1	Access to computer by the technology teachers	3.15	3.58	1.01	3.58	-0.41	NS
2	Train metalwork teachers on how best to use computer in education	3.30	3.33	0.84	3.33	-0.03	NS
3	Provision of standard facilities for telecommunication with in Oyo state	3.25	3.33	0.83	3.33	-0.08	NS
4	Hardware and Software should be provided for teachers	3.30	3.17	0.71	3.17	0.14	NS
5	Management should send the technology teachers for professional courses	3.05	3.33	0.97	3.33	-0.28	NS
6	Provision of latest technologies	2.90	3.50	1.04	3.50	-0.58	NS
7	Technical faults with ICT equipment should be rectify immediately	3.05	3.17	0.97	3.17	-0.13	NS
8	Air conditions should be installed in their ICT office	3.35	3.42	0.79	3.42	-0.07	NS
9	Government should sponsor the teachers through computer acquisition and	3.15	3.42	0.96	3.42	-0.27	NS

	training						
10	ICT should be included in the school curriculum	3.05	3.58	0.97	3.58	-0.50	NS
11	Provision of WAN (Wide Area Networks) for both home use and distance learning.	3.15	3.33	0.85	3.33	-0.18	NS
12	Adequate of technology devices	2.90	3.42	1.04	3.42	-0.51	NS
13	Proper inventory of tools and equipment	3.30	3.67	0.78	3.67	-0.34	NS
14	Consultation in selecting and adopting ICT infrastructure	3.45	3.50	0.59	3.50	-0.05	NS
15	Subsidiary cost of equipment renewal	3.25	3.67	0.83	3.67	-0.39	NS
16	Appropriate of funding allocation	3.10	3.00	0.89	3.00	0.11	NS
17	Cheap cost of the consumer of ICT	3.15	3.17	1.01	3.17	-0.02	NS
18	High partnership in support of ICT	3.00	3.08	1.04	3.08	-0.09	NS
19	Constant maintenance of ICT infrastructure	3.10	3.25	0.96	3.25	-0.16	NS
20	Teachers should be fully connected to internet	3.05	3.33	0.93	3.33	-0.28	NS

Keys

X_1 = Mean of metalwork teachers, SD_1 = Standard Deviation of metalwork teachers

$\overline{X}_2$ = Mean of administrators, SD_2 = Standard of administrators

T= t-test calculated, NS = Not Significant, S = Significant

table 8 review that items 1,3,4,5,8,11,13,15,16,17,18,19,20 and 21 were accepted indicating that there is no significant difference between the respondents hence null hypothesis stated is accepted. The t-calculated are greater than t-critical value of ±1.98 at .05 level of significance.

Summary of the Major Findings

The following are the principal findings of this study: they are highlighted base on the research questions.

A. The literacy level of the metalwork teacher in the usage of ICT gadget in an instructional aid

1. They did not know how to use projector as a teaching aid
2. They did not know how to access the internet
3. They cannot design a website
4. Government did not retrain metalwork teachers to study on ICT
5. They cannot install a Local Area Network(LAN) for the school

B. The experience of metalwork teacher in using ICT gadget in teaching.

1. They depend on power supply hen using the ICT gadgets
2. They have limited access to internet facilities
3. Lack confidence in using the ICT gadgets to teach
4. The ICT gadget are not affordable
5. There is no enough infrastructure in carrying out the demonstration

C. The resources needed in performing demonstration using ICT gadgets

1. Computer system should be used for collection of data
2. A projector should be provided for free flow of communication
3. Internet service should be made available for browsing the world
4. Electricity supply is available
5. Digital videos, cameras, audio visual aids, transmitter should be made available to communicate in digital form

D. The strategies to be adopted for standardizing the usage of ICT gadget in teaching and learning process

1. Government should sponsor the teachers through computer acquisition and training
2. Hardware and Software should be provided for teachers
3. Provision of latest technologies
4. Safety poster should be properly put in place
5. Teachers should be fully connected to internet.

Discussion of Findings

This is organized base on the research questions for the study.

1. **The literacy level of the metalwork teacher in the usage of information and communication technology ICT gadget as an instructional aid**
2. Base on the data collected, the literacy level of metalwork teachers can be improved. The result of the study identified that there is no adequate facilities provided for the teachers in carrying out their demonstrations using information and communication technology gadget. Gattiker, (1992) stated that access to computer (among the learners) is known to be associated with higher level of computer literacy. It has been found that amount of time spent working with the computer is significantly related to learners' competence to working with the computer. (FRN, 1998) stated that the existing curriculum designed for the training of pre-service teachers in Nigeria does not include the practical usage of ICT materials such as computers and their software, slides, overhead projectors etc. Example computers are used in education (i.e. teaching and learning), science and technology, engineering, informal training and problem solving therefore it's made to be part of the

National Education System (FRN, 1998). Finally the study reveals that adequate training should be give to technology teacher on the usage of ICT gadgets in technical colleges. By doing this the literacy level of the metalwork teachers will be improved. Creed (2006), It is equally possible that the hardship faced by these institution and their inability to meet the demand to develop effective and proficient ICT literate teaching cadre is as a result of corrupt practices by both the federal and state government officials on the one hand, and the regulatory bodies and officials of the teacher education institutions on the other hand. According to Akinyemi (2004), the greatest problem faced by the technical institutions is inadequate funding or finance coupled with lack of library facilities and inadequate teaching/learning materials. This probably accounts for the limitations to the effectiveness of the institutions training programs. However, the results of the analysis of the responses obtained showed that the teacher preparation programs have slightly impacted on the level of performance of the Nigerian technology teachers Sax (1998).

2. The experience of metalwork teacher in using ICT gadget in teaching.

The analysis in research question (2) revealed that tools and equipment are not adequately provided to carry out the demonstration. According to Ogiegbaen & Iyamu (2005) stated that metalwork teachers do not have the needed experience and competence in the use of computers either for educational or industrial purposes. No qualified technicians and personnel to man the application of the ICTs and who can at the same time serve and repair spoiled computers and allied facilities (Okebukola, 1997). Therefore, it cause problem for effective demonstration to be carried out by the technology teachers. According to (Abolade & Yusuf, 2004) this is connected to the government inability to finance the schools to enable the purchase facilities and infrastructure for ICTs integration in education. As a result, classroom are not equipped for ICT

usage, which therefore both teachers and trainers and trainee don't have access to ICT facilities and the few available ones are meant for administrative duties only. Other relative obstacles are inadequate funding to procure furniture, requisite books, laboratories and classroom; not only that but all internet service providers in Nigeria are based in the urban areas.

Cost: Ogiegbaen & Iyamu (2005) opinioned that the exorbitant price of computer hardware and software make it difficult for individuals to purchase it. Whereas, in the developed countries the computer hardware and software are cheap therefore very affordable, more so, the large number of public schools coupled with inadequate infrastructures such as classroom and cost of printers, monitors, paper disk drives make it difficult for most technical colleges in Nigeria to posses, the ICT facilities. Inadequate course content for ICTs: This factor carried the version that course content designed by NUC, and NCCE does not provide adequately the use of computer in instruction, rather the course content are based on single model, which teach trainee teacher about computer only.

Scrimshaw, (2004) added that confidence from the teachers is important in promoting ICT usage or integration in day-to-day teaching and learning activity. Similarly, adequate training will enhance teachers' competency in using the ICT in the classroom. Not only that, but observing other teachers in real life situations stand a factor that will enhance or promote the use of ICT in teaching and learning.

And finally the study reveals that maintenance of facilities is not regularly done for efficiency and durability.

3. The resources needed in performing demonstration using ICT gadgets

The analysis of result in table (3) reveals that they lack facilities for carrying out demonstration; therefore, teacher himself should be responsible for realizing and implementing such factors. These factors according to Scrimshaw (2004) are access to own personal laptop computer, availability of high quality resources, high level of technical support, availability of good quality training, full access to hardware and software at all time, electricity supply should be made constant so as to prevent damages of ICT gadgets, availability of large capacity building and access to interactive whiteboard. These according to Scrimshaw, are what the teacher should have or incorporate to enable him integrates ICT in his daily routine of teaching. Thus, the school should exhaust all avenues toward making ICT a reality.

4 The strategies to be adopted for standardizing the usage of ICT gadget in teaching and learning process

Findings in table (4) revealed that there should be adequate provision of ICT gadgets. The table also revealed that latest technologies, internet access, professional courses, hardware and software, access to computers, appropriate funding, maintenance of ICT gadgets and other equipment should be put in place. According to Ertmer, (1999) stated that introducing strategies for increasing ICT use in schools such as improving hardware provision or providing training can have effect on the school level only. Therefore, such barriers are to be tackled first. It is the teachers who need to bring about the required changes in their attitude and approach to ICT.

Finally, they therefore need to be given support and guidance to help them bring about this change

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMEDATIONS

Summary of the Study

The main purpose of this study is to determine the competence need of metalwork teacher in usage of ICT in technical colleges, the literacy level of metalwork teachers in usage of ICT gadgets as an instructional aid, the experience of technology teachers in using ICT gadgets, the resources needed in performing demonstration using ICT gadgets. The studies also find out the strategies needed for standardizing the usage of ICT gadget in teaching and learning process. Related literatures were reviewed in the study under the following sub-headings: Meaning of information and communication technology, The role of Information and communication technology in instruction, Information and communication technology and teacher education, Communication skills, Factors hindering the use of information and communication technology in education, Effect of information and communication technology on education, Summary of related literature

Appropriate statistical tools such as mean, standard deviation were used to analyze the data using eight (8) female technology teachers in kogi state technical colleges twelve (12) male technology teachers in technical colleges in kogi state with a total of twenty (20) respondents.

Questionnaire was used as instrument for data collection and was analyzed according to each research questions, a descriptive survey research was the research design adopted. Four research questions were formulated and tested at .05 level of significance.

Base on the findings of this study as highlighted it was observed that technology teachers should be properly trained on how to use ICT gadgets to enhance teaching and learning. The technical colleges should be accorded the same statues as obtained and their curriculum should be organized to meet the standard of information and communication technology worldwide.

Implications of the Study

The findings of this study have implication on the competence need of metalwork teachers in usage of ICT for in technical colleges in kogi state. It aimed at determining the major need of metalwork teacher and makes suggestion which could help the society (school) to prepare the metalwork teachers adequately to meet future challenge in technological era.

The computer is the major tool of ICT which has some of the other tools imbedded in it e.g. camera, and also support other tools to function effectively e.g. computer and the projector etc. This led to the finding on the computer literacy of the metalwork teachers this shows that the teacher has significant effect on literacy i.e. despite the department; most metalwork teachers few means of acquiring knowledge through the usage of ICT gadgets

Another major need of the metalwork teacher is the resources needed in performing demonstration using ICT gadgets. It has been observed that are insufficient tools for carrying these demonstrations. This does not encourage the metalwork teacher to explore and build up a better confidence of ICT use in instruction.

Conclusion

Information and communication technology is a tool necessary to bring about a positive outlook in our educational system. The future of the educational profession depends solely on the

technology teachers. They have some needs which have to be constructively looked into by the government, curriculum planners and the lecturers (expert). There is need for the government to provide adequately for the school system all the necessary facilities as regards. There are two major needs of the metalwork teacher (1) Availability and accessibility of ICT gadgets to metalwork teacher (2) Training on how to use the ICT gadgets.

This study shows that if metalwork teachers can be provided with the necessary materials and duly trained it facilitate the future teaching and learning process of our society.

Recommendation

With important roles information and communication technology play in effective teaching and learning process, it is necessary for everyone in the field of education not to see ICT use, literacy, accessibility and availability, training and integration in curriculum as an optional skill but must be a necessary tool for development (change).

To be able to attain this goal, the following suggestions are offered:

1. The government should provide more ICT gadgets in every department in the technical colleges
2. The curriculum planners should integrate ICT curriculum and enforce its use in instruction.
3. The faculty board should organize seminars with training section to educate teacher and student teacher on ICT and how to use it.
4. There should be an alternative source of power supply such as standby generator
5. The ICT gadgets used by the metalwork teachers should be adequately maintained.

Suggestion for Further Research

The following suggestions were made based on the study.

1. Strategies for effective management and maintenance of ICT gadgets in technical colleges of Niger State.
2. Appraising the relationship between ICT usage and integration and the standard of teacher education programs in a developing economy
3. Prospects and Challenges on the use of ICT for education

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