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## ENHANCING ICT FACILITY UTILIZATION FOR WOODWORK AND BUILDING TEACHERS' PRODUCTIVITY IN GOVERNMENT TECHNICAL COLLEGES IN BAUCHI STATE

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### Abstract

*This study aimed at determining the ICT utilization for improving wood and building teachers' productivity in technical colleges in Bauchi State. The study involved eight (8) technical colleges. A total of 43 technical teachers formed both the population and sample of the study. A 26 item questionnaire was used to elicit information from the respondents. The results showed that there were inadequate hardware and software devices such as computers, projectors, electronic boards, unstable power supply were accepted as lacking facilities required for the use of ICT in improving wood and building teachers' productivity with a Mean score of 3.60. The infrastructure had a Mean score of 3.0. The parameters that indicated the increase in productivity of woodwork technology and building technology teachers via technology were found to have a Mean score greater than 3.6. Computer science education and stable power supply among others are strategies that can improve technology utilization in wood and building. One of the recommendations made was that the cost of Information Communication Technology should be subsidized in technical colleges.*

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### Introduction

Societies nowadays have become complicated, competitive and dynamic with the presence of technology in all facets of human endeavours. To suit the needs of the society, it is desirable for our technical colleges to produce graduates that can work within a framework of solving problems and not just relying heavily on problems that are not required by the society.

The existence of technology has opened up ways to all sectors of human endeavours in the world of work. People are expected to adjust their performance to accommodate variations in the demands of every day task (Gazali, 2008). Thus, technical college teachers should also modify their mode of instructional delivery system to match with the current society requirements. The use of technology in the classroom has become a popular method of instruction by many technical educators at different levels of technical education.

Bell & Avis (1998) highlighted that technology provides flexibility, conveniences and overcome traditional barrier such as time and place; enhance the learning achievement level of students, enhance problem-solving skills and foster peer interaction. In line with this, Johnsey (1997) observed that when technology is used by the teacher, it reduces teacher stress by making the students to be actively involved in learning while the teacher is turned to as a mere facilitator of the classroom activities.

Moreover, technology in schools will have little impact if teachers are not actively involved in all phases of their integration to the curriculum (Bala, 2002). In other words, Raghavan (1990) observed that a major obstacle to an adequate use of technology in schools can affect the engine of growth in information driven.

Information and Communication Technology (ICT) according to Raymond (2008) include hardware and software devices. Similarly, Adedasin (2008) conceptualized ICT as the combination of items of equipment (hardware) and computer programmes (softwares) that allow one to access, retrieve, store, organize, manipulate and present information by electronic means. Albarta (2000) stated that technology is about the ways things are done, the process, tools and techniques that alter human activity. In this regard, one can view that Information and Communication Technology is about the new ways in which we can communicate, inquire, make decision and solve problems. Therefore, Nigeria's vision 20:2020 can be rapidly enhanced through innovations in competitive global market which enabled in the capacity ICT to create, store, process and deliver information.

Computer use in the classroom has also become a popular method of instruction by many technology educators. According to Gazali (2008), this may be due to the fact that software programmes have advanced beyond the early days of drill and practice instruction. A teacher has to be a facilitator of the learning process rather than the source of knowledge. The role of woodwork technology and building technology teachers according to Bala (2002) will particularly fit in well with the broad objectives of technical education in Nigeria.

### Statement of the Problem

Evidences by Doughal and Brenda (2004) declared that one of the roles of technology in a school is that of providing a new framework for teachers that can foster a revision and an improvement of teaching and learning process. Teachers can take this great advantage of the growing availability of this educational resource to use them in

facilitating their teaching profession. In spite of the impressive role of technologies in schools, the extent to which technology facilities improve woodwork and building technology teachers' productivity in technical education remains to be largely unknown.

### Purpose of the Study

The major purpose of the study is to find out how ICT utilization in technical colleges improves wood and building teachers' productivity. Specifically, the study sought to achieve the following objectives:

1. Find out relevant technologies that can assist wood and building teachers' productivity in teaching concepts in technical colleges.
2. Find out major obstacles that affect technology utilization for improving wood and building teachers' productivity in technical colleges.
3. Examine how ICT enhances wood and building teachers' productivity in technical colleges.
4. Find out strategies that can be adopted to improve technology utilization for improving wood and building teachers' productivity in technical colleges.

### Research Questions

The following research questions guided the study:

1. What are the relevant technologies that can improve wood and building teachers' productivity in technical colleges?
2. What are the major obstacles that affect technology utilization for improving wood and building teachers' productivity in technical colleges?
3. How does ICT enhance improve wood and building teachers' productivity?
4. What are the strategies that can be adopted to enhance technology utilization for improving wood and building teachers' productivity in technical colleges?

### Methodology

The study adopted a survey design. The population of the study comprised of all wood and building teachers in technical colleges in Bauchi state stood at forty three (43). A purposive sampling technique was used in selecting the respondents for the study. The respondents drawn from the colleges include Government Technical College Bauchi fifteen (15), Government Technical College Gumau five (5), Government Technical College Tafawa Balewa five (5), Government Technical College Kafin Madaki three (3), Government Technical College Jama'are three (3), Government Technical College Gadau three (3), Government Technical College Azare six (6) and Government Technical College Gamawa three (3).

The instrument for data collection was a questionnaire which was divided into two (2) sections. Section 'A' was designed to capture information on availability and usage of ICT facilities in the technical colleges under the study, while Section 'B' was designed to capture responses of the respondents on parameters of woodwork technology and building technology teachers' productivity needs through ICT. A five (5) point Likert rating scale was used to determine the productivity of the wood and building teachers through the use of ICT. The rating scale was Strongly Agreed, SA (5), Agreed, A (4), Undecided, UD (3), Disagreed, DA (2) and Strongly Disagreed, SD (1) respectively. Any response with Mean 3.0 and above will be accepted otherwise is rejected.

### Results and Discussion

**Research question one:** What are the relevant technologies that can improve wood and building teachers' productivity in technical colleges?

Table 1 show that all the technology facilities such as buildings, furniture, room coolants and internet facilities (cafes) have Mean score responses of 4.40, 4.20, 3.60 and 5.00 respectively. This means that they are all relevant required to enhance wood and building teachers' productivity.

**Table 1: Relevant Facilities Required by ICT to Enhance Wood and Building Teachers' Productivity in Technical Colleges**

Questionnaire Items	N	X	Remarks
Buildings, furniture and room coolants.	80	4.40	Accepted
Computers, printers, projectors, electronics lecture board and fax machine.	80	4.20	Accepted
Internet facilities, receivers and decoders.	80	3.60	Accepted
Adequate power supply not frequent	80	5.00	Accepted

**Research Question Two:** what are the factors that affect technology utilization for improving wood and building teachers' productivity in technical colleges?

The results in Table 2 shows that high cost of ICT facilities such as computers, printers and projectors have Mean score of 3.60. Power supply for

the operation of the ICT facilities 4.00; lack of technical know- how to operate ICT facilities 4.00, wood and building teachers were not interested in using ICT to improve their knowledge 2.20, and virus effects on ICT facilities especially computer accounted for a Mean score of 3.80.

**Table 2: Factors that affect Technology Utilization in Improving Wood and Building Teachers' Productivity in Technical Colleges**

Constraints/challenges that effect utilization of Technology	N	X	Remarks
High cost of ICT facilities such as computers, printers and projectors	80	3.60	Accepted
Unstable power supply for the operation of ICT Facilities	80	4.00	Accepted
Lack of technical know how to operate the ICT Facilities	80	4.00	Accepted
Teachers are not interested in using ICT to improve their knowledge	80	2.20	Rejected
Virus affect ICT facilities especially computers.	80	3.80	Accepted

**Research question 3:** How Does ICT enhances wood and building teachers' productivity in technical colleges?

Table 3 reveals that the entire parameter indicating wood and building teachers' productivity via ICT has

Mean score response of greater than 3.00. However, wood and building teachers were competent in using computer, and technical teachers use the computers more as their subject matter have mean scores of 2.56 and 2.38 respectively.

**Table 3: ICT factor that enhances wood and building teachers' productivity in technical colleges**

Teacher productivity parameter	N	X	Remarks
Teacher is competent in the use of computers	80	2.56	Rejected
The technical teachers use the computers to know more about their subject matter	80	2.38	Rejected
The teacher is well informed and competent when he/she uses the computer to teach.	80	4.00	Accepted
The teacher presents better information using ICT facilities.	80	4.40	Accepted
Special software program is designed to help the teachers to have better skills.	80	4.400	Accepted
Application of software development helps teachers to acquire knowledge without further education	80	3.20	Accepted
AUTO CAD, Smart Draw and Arch CAD enhance lessons.	80	3.20	Accepted
Teaching student using ICT is easier and faster than the traditional lecture method.	80	4.50	Accepted
Using ICT is more practical than theory.	80	4.40	Accepted
Latest technology can be accessed by teachers using ICT.	80	4.60	Accepted
With ICT teachers can give functional education than theoretical education	80	4.40	Accepted

**Research question 4:** what are the strategies that can be adapted to enhance technology utilization for improving wood and building teachers' productivity in technical colleges?

The results in Table 4 explains that compulsory computer education to both teachers and technical students, provision of adequate computer,

provision of adequate and stable power supply; maximum attention be given to the usage of technology in teaching wood and building, funds should be made available for technical schools; psychological acceptance of the use of computer by the wood and building teachers; and provision of internet facilities have Mean scores of 3.00, 4.20, 5.00, 3.10, 4.60, 3.70, and 3.40 respectively.

**Table 4: Strategies that can be Adapted to Enhance Technology Utilization to Improve Wood and Building Teachers' Productivity in Technical Colleges**

Strategies that can improve technology utilization in teacher productivity	N	X	Remarks
Compulsory computer education is important to both technical teachers and students.	80	3.00	Accepted
Provision of adequate computers.	80	4.20	Accepted
Provision adequate and stable power supply.	80	5.00	Accepted
Attention is given to the utilization of technology in teaching wood and building.	80	3.10	Accepted
Fund should be made available for the technology in the technical schools.	80	4.60	Accepted
Psychological acceptance of the use of computer.	80	3.70	Accepted
Provision of internet facilities.	80	3.40	Accepted

#### Discussion of Findings

The result indicates that computers, printers, projectors electronic board and fax machines required for application of ICT in teacher productivity in technical schools have Mean score of 4.20. Internet facilities such as cafe, receivers and decoders showed a Mean score of 3.60. Other supporting infrastructure required for application of

ICT accounted for a Mean score of 4.40 and 5.00 respectively. This result agrees with the findings of Ngwu (2010), who stated that facilities required for technology usage in education includes computers, cafes, internet specialist, and satellite dishes among others.

The result of the study shows that high cost of ICT facilities such as computers, printers and project

pose a challenge to the use of ICT in wood and building technology. This shows a Mean score of 3.60, while other challenges revealed by the investigation accounted for a Mean score of 4.00. Inadequate technical know-how to operate ICT facilities by wood and building technology teachers' shows 4.00 and virus attack on the ICT facilities with a Mean of 3.8 respectively. However, the results of the study demonstrate that it is not true that building teachers are not interested in using ICT to improve their knowledge. This is explained by a Mean score of less than 2.20. The study also demonstrates that the use of ICT improves productivity in teaching. The productivity parameters had mean score of greater than 3.0. Strategies that can improve technology usage for wood and building teacher productivity as revealed by the study indicates a Mean scores of greater than 3.0.

### **Conclusion**

Based on the findings of the study, conclusions were drawn that the use of technology (ICT) improves the productivity of wood and building teachers in teaching building technology.

High cost of technology facilities such as computers and unstable power supply as well as low technical know-how of software operation pose a great challenge and problems to the use of technology facilities in improving teacher productivity. One of the strategies that can help to improve teacher productivity includes compulsory computer education.

### **Recommendations**

Based on the findings of the study, the following recommendations were made:-

1. Technical Colleges should collaborate with the Ministry of Education to provide computers and internet facilities in technical colleges.
2. The use of ICT should be made compulsory to teachers that are teaching technology subjects in technical colleges.
3. The cost of technology facilities such as computer should be subsidized to enable woodwork technology and building technology teachers acquire them.

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