

Improving Access and Quality in Teachers' Professional Development Using Information and Communication Technology (ICT) in Federal College of Education (Technical), Gombe

**Timothy U. Maigari, Wallace O. Ebinum, Jacob Philip, Adejumo E. Bolanle,
& Mohammed A. Magaji**

Federal College of Education (Technical), Gombe

Abstract

The survey research design was adopted in this study which examined Information and Communication Technology (ICT) competence and how this competence can be used to improve access and quality in teachers' professional development. Five research questions were used to guide the study and a questionnaire was developed, validated and used for data collection from a sample size of 400 academic staff, 300 were returned and analyzed. The collected data were analyzed using descriptive statistics (percentages), and plotted in column chart. The results show that majority of the academic staff have laptops; access to internet was mainly at public cyber café; majority (24.7% and 36%) rated their ICT competence as 'not competent' and 'somewhat competent', that is, fairly competent. Inadequate ICT facilities, excess work load and funding were identified as major challenges to ICT usage among academic staff. Recommendations made include funding of ICT training of academic staff by the management of the institutions and making ICT training mandatory for all academic staff.

Keywords: Information and Communication Technology, Access, Quality, Teacher, Professional Development.

Introduction

Many countries are progressing towards the goals of Education for All, but these countries struggle to achieve 'teacher quality for all', especially the developing countries. Yet teacher quality is one of the key factors determining the participation rates of children in schooling and the quality of their education (Robinson, 2008). There is broad agreement that teacher quality is the single most important school factor influencing student achievement (Darling-Hammond, 2000; Rivkin, Hanushek, & Kain, 2005; UNESCO, 2006). Bernadette (2008) assert that teacher quality is also an important element in advancing social justice in terms of educational quality in developing countries, where teachers tend to be less qualified than their advanced countries peers and less well-resourced and

supported. In recognition of its importance, support for teachers' continuing education is receiving more attention in the discourse of international and national agencies, for example:

In our fast-changing world, teachers must be engaged in life-long learning to be able to meet new challenges. It is a grave political contradiction that so much emphasis is being given to the importance of education while so little is being done to give teachers status, support and reward. . . The professional status of teachers should be recognized as one of the most important in society. . . It is the responsibility of policy-makers and school management to support and empower the teachers in this important role, and to work

toward raising their professional status. (Thomas Hammarberg, Commissioner for Human Rights, Council of Europe, on World Teachers' Day, 5th October 2006) in (Bernadette, 2008:2)

To achieve the above, an enabling environment (i.e., policy, resources, and support) where teachers have access to relevant professional learning opportunities needs to be in place by governments and planners. 'Learning opportunity' here according to Schwille, Dembélé, & Schubert, (2007) refers not just to a training event, but to "an experience with an anticipated or inferred learning outcome. Such an experience may be carefully planned and purposefully arranged, or it may occur naturally and informally". Villegas-Reimers (2003), concludes that a career long approach to it "requires the transformation of processes and policies that support teachers, their education, their work and their growth in the profession".

Literature Review

Professional development in education may be used in reference to a wide variety of specialized training, formal education, or advanced professional learning intended to help administrators, teachers, and other educators improve their professional knowledge, competence, skill, and effectiveness. (edglossary, 2013). Professional development may range from one day conference to a two-week workshop to a multiyear advanced-degree program. Professional development has the potential to support such policy goals, as has been demonstrated in both developing and industrialized industrialised countries (Robinson & Latchem, 2003; Perraton, Robinson & Creed, 2007). Without it, some of the improvements so far achieved in teacher quality would not have been possible, especially in developing countries.

Information and Communication Technology (ICT)

Information and Communication Technology (ICT) is basically an electronic system of information that deals with transmitting, processing and retrieving information. This includes computer software, networking equipment system that allows individuals to access and create information and communicate with one another (Zainab, 2013). Also, ICT as defined by Kanu (2010), is the handling and processing of information which may be in the form of graphs, images, text and instructions for use by means of electronic and communication devices, such as computers, cameras, telephones and electronic devices. From these definitions, one can understand how ICT has a great influence in almost all facets of our human activities, most especially the teaching-learning process.

The growth of Information and Communication Technologies (ICT) has added new options for teachers' professional development (Collis & Jung, 2003; Unwin 2005; Leach, Ahmed, Makalima, & Power, 2006).

Enhancing Teachers Access and Quality through ICT

Teachers play a crucial role in the development, adoption and Implementation of any educational curriculum or innovation. This role becomes even more critical in adoption and integration of information and communication technology (ICT) into the education programme of a country. It has been discovered that knowledge of (ICT) usage improves human capacity in every field of human endeavour, including business transaction, industrial operations, educational programmes and activities and life in general. Radloff (2001) highlights the opportunities that ICT presents for enhancing the quality of teaching and learning to include:

- Providing encouragement for staff and students to reflect on how they teach and learn.

- Applying theory and research on learning and principles of good instruction design environments.
- Making teaching (and learning) more visible and public
- Encouraging collaboration and team work among staff (and students).
- Offering greater access to learning for more people.
- Increasing the skills and status of teachers.

Aware of the significance of ICT educational programmes, governments in the world have adopted several measures to facilitate acquisition of ICT education by enhancement of education and training programme, providing an enabling environment for the development of ICT, provision of incentives for computerization and automation and creation of venture capital (Pelgrum and Law, 2003). Carlson and Gadio (2002) in Ijeoma, Joseph and Franca (2010) state that teacher training in the use of ICT is the best starting point in the ICT policy of a country because they are the key to making learning happen. This according to them is so because teachers who succeed in making use of ICT in their work process, do not only contribute to improved learning outcomes in their students, but may also benefit personally from enhanced work productivity, reduced isolation and increased professional satisfaction. But in a study of 26 education systems (Pelgrum and Anderson 1999), lack of ICT knowledge and skills by teachers was perceived to be a major obstacle for attaining the school's ICT related goals, they equally found that there was a serious lack of skills related to pedagogical ICT use, the most challenging being how to make use of ICT to support and extend learning at the tertiary level of education. Developing teachers' ICT skills is then imperative.

Statement of the Problem

ICT literacy among academic staff has been viewed as a prerequisite in adoption

and integration of ICT in the school system. It has however been observed that in FCE(T) Gombe State, ICT access and usage among lecturers in the teaching and learning situation is still very minimal. This informed the researchers' decision to investigate if this prevailing situation is overturned; teachers' quality is guaranteed.

This study aims at:

- 1) Establishing what numbers of academic staffs have personal computers or laptops.
- 2) Determining the main source of access to internet by academic staff.
- 3) Investigating the competency level of academic staff in the use of ICT
- 4) Ascertaining how academic staff rate their ICT competency level, and
- 5) Ascertaining the challenges to academic usage of ICT.

Research Questions

To achieve the stated objectives, the following research questions are posed:

- 1) What numbers of academic staff possess personal computers/ laptops?
- 2) Where do academic staffs have access to internet?
- 3) What is the ICT competence level of academic staff?
- 4) How do academic staffs rate their ICT competency level?
- 5) What are the challenges to ICT usage by academic staff?

Method

The survey research design was utilized for this study, because it is useful in describing the characteristics of a large population, inexpensive, flexible and dependable. While, Federal College of Education (Technical), Gombe served as the area of study because it is the authors'

area of primary assignment and the authors can easily obtain the above benefits in the study area. The target participants were 400 academic staff in the institution. The research instrument (questionnaire) was administered to a total of 400 academic staff; only 300 were successfully completed and returned.

The research instrument the Questionnaire comprised 3 sections. Section A sought demographic information on gender, rank and institution. The section B have questions relating to possession of laptop/computer, place of access to internet, assessment of teachers' ICT access and quality, requiring a 'Not Competent to 'Very Competent' 'response

measured in a 4 point Likert-like scale and finally the Section C on rating of teachers' ICT competence measured in a 4 point Likert-like scale ranging from 'Not Competent to 'Very Competent' as well for the purposes indicated. The collected data were analysed using descriptive statistics (percentages) and further represented graphically on a chart (column chart), this is because chart holds the advantage of presenting quantitative data graphically (pictorially).

Results

For the purpose of better understanding, the results are presented and discussed below:

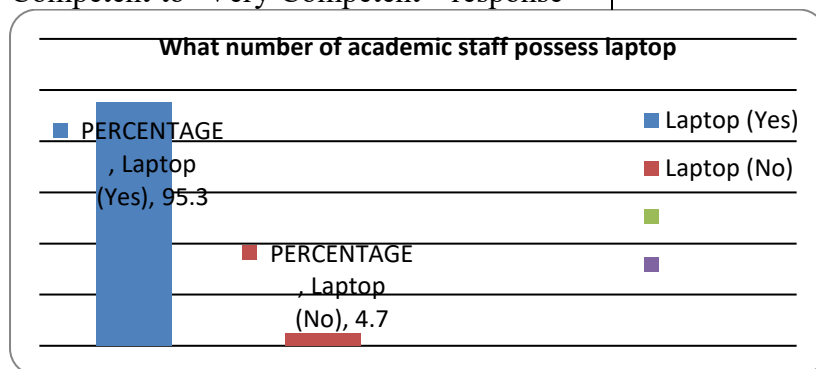


Figure 1: Result showing the number of academic staff with laptops
Source: Field Data (2017)

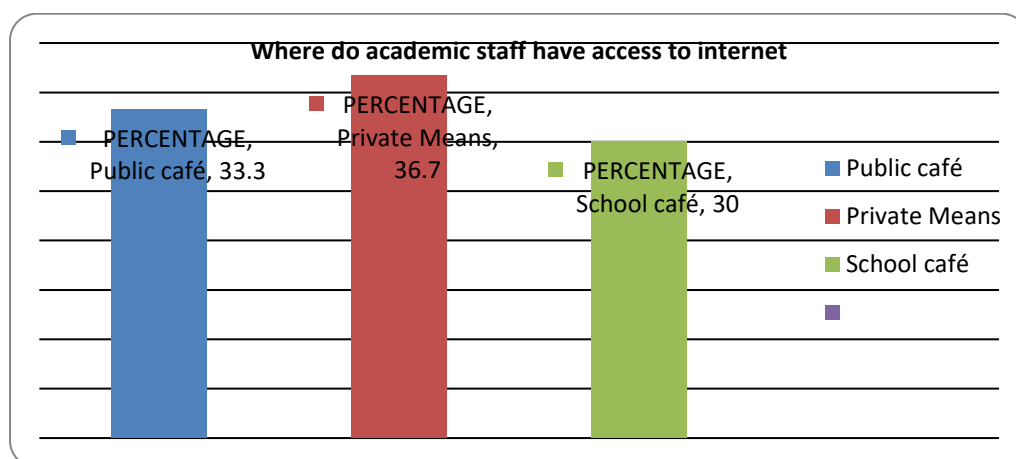


Figure 2: Result showing where academic staff access the internet
Source: Field Data (2017)

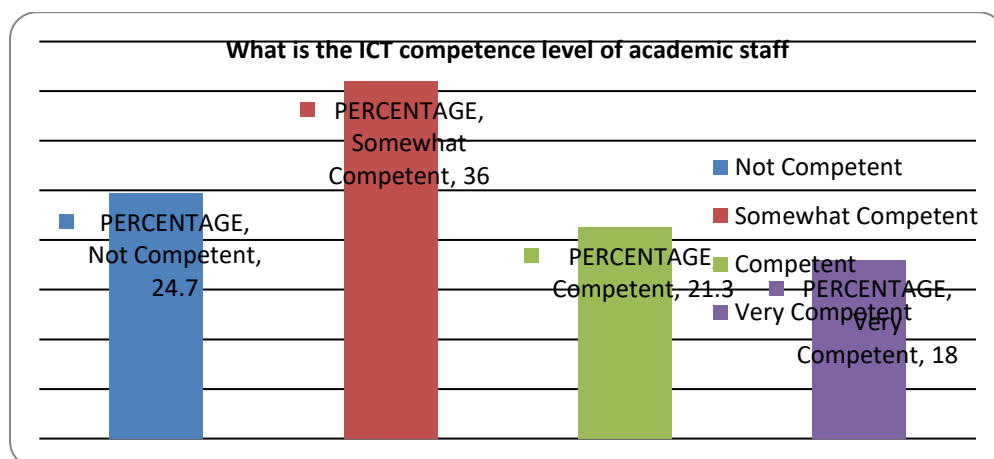


Figure 3: Result showing the ICT competence level of academic staff
Source: Field Data (2017)

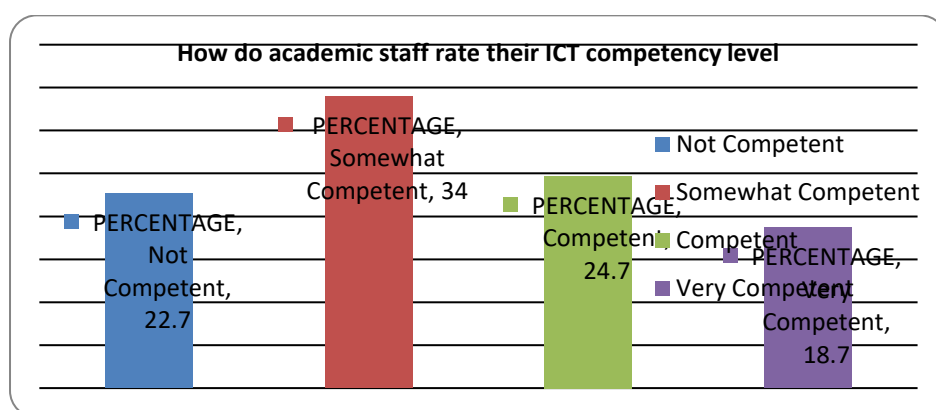


Figure 4: Result showing how academic staff rate their ICT competency level.

Discussion of Results

For the purpose of clear understanding, the results presented above are discussed below following the sequence of the research questions.

Ownership of computers (desktop/laptop)

Results in Figure 1 show that 95.3% of the respondents have personal computers/laptop, while 4.7% did not. The high percentage of academic staff computers/laptops can be attributed to the fact that Federal college of Education (Technical) Gombe encouraged staff interest in ICT by allowing staff buy computers (desktop/laptop) and pay by

installment over a period of time mostly form cooperative societies. Besides, some academic staff are beginning to see the need to own a personal computer.

Access to internet

With respect to access to internet the results show that 33.3% of the respondents' access internet at public cyber café. This is followed by those that have private means 36.7%, while those that access internet at the school are the least 30%. The non-functionality of the cyber café in Federal College of Education (Technical) Gombe is the reason for the high patronage of public cyber café. It is

however encouraging to note that some academic staff are meeting up with the challenge by buying modem and data from internet service providers. The above observation is similar to what was observed by Ijeoma, Joseph and Franca (2010).

Rating of ICT competence

The result in Figure 3 shows that only 18% of the academic staff in this study rated their ICT competency level as “very competent”. Those with just “competent” level were 21.3%, while the majority (24.7% and 36%) rated their ICT competency level as “somewhat competent” and “not competent”. This result is not encouraging as the combination of staff that rated their competency level as “competent” and “very competent” (39.3%) is still lower than those that were “somewhat competent” and “not competent” ICT competency level. This result is line with the findings of Ijeoma, Joseph and Franca (2010). With this result, the possibility of many academic staff utilizing ICT in teaching and learning situation is small.

Level of ICT competence

The findings in Figure 4 show that the combination of staff that indicated that they were either competent or very competent in utilization of ICT in all the indices measured was below fifty percent (50%). The highest areas of competence indicated by academic staff were in usage of ICT for purposes of preparing documents (word processing), spreadsheet skills, browsing the internet to get information, using computer to save, open, move and/or copy files on computer and arrange them. It is discouraging to note that in this era of technology, academic staff are still not competent in utilizing ICT for common purposes such as database management, knowledge of computer network, using computer to produce multimedia materials, analyzing

research data using data analysis software, making online payments for journals, conferences and so on. Given this result, it can be said that the competency level of academic staff in utilizing ICT is still very low. With the lecturers rating low in utilizing ICT, how can we expect teachers to deliver our best in the teaching/learning process? In line with this, Carlson and Gadio (2002) suggested that teacher training in the use of ICT is the best starting point in ICT policy of a country.

The results show that the desired quality to make teachers productive is not at the optimum level. Therefore, to improve teachers’ access to information and quality in this era of information age, their ICT skills need to be improved. This findings bring to bear the position of (Pelgrum and Anderson 1999), that lack of ICT knowledge and skills by teachers was perceived to be a major obstacle for attaining the school’s ICT related goals, (Pelgrum and Anderson, 1999) equally found that there was a serious lack of skills related to pedagogical ICT use, the most challenging being how to make use of ICT to support and extend learning at the tertiary level of education. Developing teachers’ ICT skills is then imperative.

Conclusion

From the findings of this study, it was concluded that training from the institution towards staff ICT development was very minimal. The study equally revealed that relatively high percentage of academic staff have personal computer, indicating their interest in acquisition of ICT skills. Again, access to internet by academic staff was mainly at public cyber café and by private means compared to school, indicating inadequacy of such facilities on campus. Majority of the academic staff in this study rated their ICT competence as “somewhat competent” “competent”, and “not very competent”. In terms of quality in ICT usage, the highest areas of competence were in word processing, research (browsing the internet to get

information) and e-mail management skills, while their competences in the other vital areas studied were low as seen in the results above. Finally, it was also concluded that the major challenges to access and quality in ICT usage among academic staff were related to training and facilities.

Recommendations

Based on the findings and conclusions drawn in this research, and for a successful implementation of ICT programme in schools, the researchers recommend the following:

- Provision of training on baseline ICT skills for teachers.
- Provision of good technology infrastructure including computer access and network connectivity for teachers.
- Challenging teacher education institutions to integrate ICT into their teacher education programmes.
- Establishment of centres for learning technology in teacher education institutions to support the systematic integration of ICT for education purpose.
- Engage higher institution research centres in research integrated programmes on the use of ICT in education.

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