

PROBLEMS AFFECTING THE USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR QUALITY INSTRUCTIONAL DELIVERY IN SENIOR SECONDARY SCHOOLS IN EBONYI STATE

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Abstract

The study examined the problems affecting the usage of ICT and suggested strategies that could be adopted to improve the provision and utilization of ICT equipment in senior secondary schools in Ebonyi State. The entire 222 Senior Secondary Schools in the state formed the sample for the study. The descriptive survey design was adopted for the study and the instrument for data collection was a structured 4-point scale questionnaire. Data collected were analyzed using frequency distribution and means. The impediments/problems to the provision and utilization of ICT facilities were found to include lack of computers and other ICT tools, lack of government support, non-availability of alternative power supply and lack of fund to maintain the existing ICT facilities. It was recommended that government and wealthy individuals should provide ICT equipment and generating sets, workshops and seminars should be organized for teachers, and school heads intensifying their internally revenue base to maintain existing ICT equipment.

The importance of Information and Communication Technology (ICT) in schools and instructional delivery has long been recognized. Ezugwu (2009) identified ICT as a key factor that blends both teaching and learning. As a powerful tool, ICT can improve knowledge and bring about reform in the education sector. If the teacher is to function effectively in the 21st century and school administrators administer schools well, the teacher education process must make adequate provision for individualized computer training for the would-be teachers and

in-service training for the serving ones. In the age of ICT, the teacher and the student are required to be computer literate.

ICT in its broad sense is a technological tool and resource used to communicate, create, organize, disseminate, store, retrieve and manage instruction (Obi, 2002, Nwachukwu, 2004, Edefiogbo, 2005 and Chaka, 2008). In this study, ICT not only mean computers but are technological tools including the internet, radio and television among others.

Many researchers have shown that the quality of learning can be significantly enhanced when ICT is utilized as intellectual multi-tools (Davis and Desforjes, 1997, Poilway and Pietton 1993 in Onu, 2005). The Federal Republic of Nigeria acknowledges the importance of ICT as a powerful tool in improving knowledge and thus states in the National Policy on Education (FRN, 2004:34) that 'Government shall provide necessary infrastructure and training for the integration of ICT in advancing knowledge and skill in the modern world'. It is expected that if government policy has been implemented, teachers and administrators in our school system must have acquired ICT skills which will help them for effective instructional delivery as well as facilitating teaching and learning.

The use of modern ICT has brought a lot of changes to the classroom through the use of computer, internet, e-mail, video conferencing and the electronic whiteboard analysis. The computer, internet and related devices (Osadolor, 2008) assist in delivering instructions directly to learners by allowing the students to interact with

the designed lesson that has been programmed into the system. ICT as pointed out by Wadi and Sona, (2003) has the potential to enhance educational quality by increasing motivation, facilitating acquisition of basic skill, promoting enquiry and exploration and preparing the individual for the technology driven world.

ICT also plays an important role in school administration. The association of African Universities (AAU) ICT report (2005) posited that competency in ICT would facilitate administrators ingenuity in personal/human resources management, students administration, finance, assets and maintenance, communication, office automation and supporting Management Information System. (MIS) (Okorji, Ezeugbo and Nwogbo 2008). A worrisome situation as pointed out by Obi (2003) is that many school administrators still cling firmly to manual method of operation in management activities because secretaries/typists still type with obsolete typewriters. This, Ololube (2006) pointed out was because principals are not adequately trained in using ICT to improve aspects of their work. In the same vein, teachers also find themselves in the same predicament when it comes to using ICT tools for instructional delivery.

Literature is replete with studies on problems/challenges in the use of ICT in schools. In the case of universities, Yusuf (2005) identified the issues of lack of modern ICT facilities and power supply as major inhibitors to the adoption of ICT. Study conducted by Global Information Technology (2005) revealed that Nigeria was ranked 90th out of 115 countries surveyed for preparedness to participate and benefit from ICT development.

The situation in our respective schools is not different from the national situation. In a study on the challenges of the application of ICT by administrators in secondary schools in Anambra State, Okeke and Modebelu (2011) identified many ICT tools as not being available.

The issue of non-availability of ICT materials was also supported by related/similar study by Adeogun (2002) and Adejumo (2000). Even the available ones are grossly under-utilized. This low usage was collaborated by Akinole (2005) in Okeke and Modebelu (2011), Seidon (2000) and Uhaegbu (2001). In addition, Etuk (2005) identified lack of ICT skills by administrators, lack of ICT experts to man the programme, unsteady power supply and absence of ICT materials as some of the challenges in the use of ICT in schools.

In Ebonyi State, the state government is not relenting in its effort to ensure that civil servants and teachers are ICT literate.

The Executive Governor, Chief Martin Elechi recently issued a directive that ICT knowledge and operation of computer will form the basis for 2013 promotion. To this effect, the state government has commenced ICT training for her workers. The first batch of the training was declared open by the Executive Governor of Ebonyi, Chief Martin Elechi on 15th May, 2012 at Staff Development Centre, Abakaliki. Before this, some schools were being used as pilot schools for ICT. These schools were supplied ICT tools including internet services. Also some wealthy individuals and philanthropists have been donating ICT equipment to schools. An example is Community Secondary School Agbaja that received about 100 computers and accessories. In addition, selected computer teachers from these schools were trained in a workshop to improve their capacity in understanding and usage of hardware and application of software for assessing information and in teaching. Although this is a step in the right direction, the percentage is still negligible.

Statement of the Problem

Despite the importance of ICT as instructional tool and as a support in curriculum implementation, it does appear that many secondary schools (senior secondary) in Ebonyi

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State are yet to have access to and adopt modern ICT tools for teaching, learning and management as a result of many constraints. One wonders whether in the face of the present predicament on ICT, schools will be able to access the vast amount of information which can be used for accessing new curricular and introducing innovative teaching methods. In the light of the foregoing, this study sought to find out the challenges/problems in the use of ICT equipment in schools with a view to identifying strategies for improving the provision and utilization of ICT also with a view to using ICT properly in schools for better instructional delivery.

Research Questions

The following research questions guided the study:

1. What ICT equipment/tools are available in senior secondary schools?
2. What are the impediments/problems militating against the provision and utilization of ICT equipment?
3. What strategies could be adopted to improve the provision and utilization of equipment in schools?

Methodology

The descriptive survey research design was adopted for the study. The study covered all the two hundred and twenty-two (222) state senior secondary schools in the three education zones of the state. The principals constituted the population of the study and all the principals in all the schools were studied as no sample was drawn. The data collection instrument was a researcher-made 41 item questionnaire which was designed and administered on the respondents. The instrument consisted of three (3) sections-A-C. The three sections sought information on:

- a. The ICT equipment available in senior secondary schools

- b. Problems affecting the provision and utilization of the ICT equipment.
- c. Strategies for improving the provision and utilization of ICT equipment.

The instrument was validated by two experts in education from University of Nigeria Nsukka. These experts were requested to examine the structuring of the language, content and appropriateness of the items. The suggestions/corrections by the experts were accordingly effected in the final copy of the instrument. Reliability of the instrument was determined using twenty (20) principals from private secondary schools in Ebonyi State. Pearson's Product Moment Correlation Coefficient was used to determine the reliability coefficient. The reliability coefficient values of 0.80, 0.82 and 0.79 respectively were obtained for sections A-C. Out of the 222 copies of the questionnaires administered to the 222 principals, 205 copies were duly completed, returned and used for computation.

The three research questions were answered using frequency distribution and means. Items with mean score of 2.50 and above were regarded as positive/agree responses while scores less than 2.50 were regarded as negative/disagree.

Results

Table 1: Mean Ratings on the Availability of ICT Equipment in Schools.

| S/N | ICT Equipment Available | \bar{X} | Decision |
|-----|-----------------------------|-----------|----------|
| 1. | Radio Cassette Recorder | 2.60 | Positive |
| 2. | Television | 2.75 | Positive |
| 3. | Telephone | 4.00 | Positive |
| 4. | Cable satellite | 2.00 | Negative |
| 5. | Computer | 2.40 | Negative |
| 6. | Internet | 2.30 | Negative |
| 7. | Fax | 1.00 | Negative |
| 8. | e-mail | 2.00 | Negative |
| 9. | Opaque | 2.30 | Negative |
| 10. | Overhead projector | 2.20 | Negative |
| 11. | Video conferencing computer | 1.00 | Negative |
| 12. | CR-ROM | 2.26 | Negative |

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| 13. | Screen | 2.25 | Negative |
| 14. | Shade projector | 2.43 | Negative |
| 15. | Typewriter | 3.00 | Positive |
| 16. | Video CD | 2.55 | Positive |
| 17. | Video Projector | 2.00 | Negative |
| 18. | Printers | 1.86 | Negative |
| 19. | Computerized Digital library | 1.00 | Negative |
| Grand Total | | = 41.90 | |
| Grand Mean | | = 2.21 | |

From the data presented in table 1, the result indicates that almost all the ICT equipment are not available/are available in very low quantity. This can be seen from the grand total of 41.90 from which the grand mean of 2.21 is worked out. Since the acceptance level is 2.50, the grand mean of 2.21 indicate that less equipment (five) are available in schools as opposed to the fourteen that are not available. Item by item analysis show that fax, (1.00), video conferencing computer,(1.00) and computerized digital library (1.00) received the lowest rating. The highest rated equipment was typewriter (3.00), followed by television (2.75) and radio cassette recorder, (2.60).

Table 2: Mean Ratings on the Problems/Impediments to the Use of ICT Equipment

| S/N | Impediments to the use of ICT Equipment | \bar{X} | Decision |
|-----|--|-----------|----------|
| 1. | Many teachers lack knowledge in the use of ICT equipment | 3.00 | Agree |
| 2. | Lack of Computer and other ICT equipment | 3.35 | Agree |
| 3. | Unavailability of specialized instructors to man the ICT equipment | 3.45 | Agree |
| 4. | Students lack knowledge in the use of ICT equipment | 2.20 | Disagree |
| 5. | Lack of government support for the adoption of ICT equipment | 3.15 | Agree |
| 6. | School management reluctance to adopt ICT | 2.00 | Disagree |
| 7. | Non availability of alternative power supply | 3.35 | Agrees |
| 8. | Lack of students interest in computer/internet aided | 2.00 | Disagree |

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| 9. | instruction Most of the gadgets are health hazards | 2.15 | Disagree |
| 10. | Teachers are comfortable with the old manual system. | 2.55 | Agree |
| 11. | Lack of infrastructural security | 3.00 | Agree |
| 12. | Poor maintenance culture of the available ICT equipment by the school management | 2.85 | Agree |
| 13. | Lack of fund to maintain existing ICT Equipment | 2.90 | Agree |
| Grand Total | | 35.95 | |
| Grand Mean | | 2.77 | |

Data on table 2 shows that out of the 13 impediments listed, 4 were rejected as not constituting hindrance to the use of ICT in schools. The least is lack of student interest in computer which is 2.00 and students lacking knowledge in the use of ICT which is 2.20. On the whole, the grand total is 35.95 while the grand mean is 2.77.

Table 3: Mean Ratings on the Strategies for improving the Provision and Utilization of ICT Equipment

| S/ N | Strategies for Improving the Provision and Utilization of ICT Equipment | \bar{X} | Decision |
|------|--|-----------|----------|
| 1. | Budgetary provision for the supply of ICT equipment in schools by the state government | 3.55 | Agree |
| 2. | Imposition of ICT equipment levy on all taxable adults in the host community of the schools | 2.30 | Agree |
| 3. | Payment of PTA levy for ICT equipment | 2.75 | Agree |
| 4. | Support by wealthy individuals, old boys/girls and voluntary organizations through donation of ICT material | 4.22 | Agree |
| 5. | Compulsory computer and ICT education for all serving teachers in the system as requisite for job retention and promotion. | 3.85 | Agree |
| 6. | Providing functional generating sets for the ICT equipment. | 3.25 | Agree |
| 7. | Intensive mobilization and sensitization of parents on the relevance of computer/ICT education for students in the state schools | 2.65 | Agree |

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| 8. | Communities organizing vigilante groups to safeguard ICT equipment in their community schools | 3.15 | Agree |
| 9. | School administrators intensifying their internally generated revenue base to help maintain the existing ICT equipment. | 4.00 | Agree |
| 10. | School administrators embracing maintenance culture for the existing ICT equipment. | 3.20 | Agree |
| Grand Total | | 32.95 | |
| Grand Mean | | 3.30 | |

Data in Table 3 shows that imposition of ICT on all taxable adult in the host community (2.30) was considered as a negative strategy. The other strategies were rated as positive.

Discussion

Findings in table 1 revealed that many of the ICT equipment needed for instructional delivery are not available. Out of the nineteen ICT equipments, the school principals agreed on the availability of five tools listed. This finding is in agreement with that of Okeke and Modebelu (2011) in which five out of the twelve listed equipment were found not available. Also Adeogun (2002) found in his study that communication facilities are deficient in most secondary schools in the South West. Chaka (2008) maintained that the deployment of ICT facilities to education is painfully slow in Nigeria. The effect of this finding is that the near absence of this ICT equipment will definitely result in the products of the senior secondary school system trailing behind others in the contemporary society.

With regards to the impediments on the provision and utilization of ICT equipment, the findings of the study in table 2, identified nine problems that affect the provision and utilization of ICT in schools. Some of them include absence of computer and other ICT equipment, lack of knowledge on the use of ICT equipment by teacher (3.00), lack of specialized instructors to man the ICT equipment, (3.45) non-availability of alternative power supply (3.35) and lack of

fund to maintain the existing ICT equipment (2.90). This is in consonance with Etuk (2005) who observed absence of ICT equipment, lack of experts to man the programme and irregular power supply as some of the impediments to the use of ICT in schools. In addition, Ezegbe (2010) identified lack of manpower in the area of ICT. If the teachers are to be able to handle ICT equipment, Iwiyi (2007) advised that teacher education process must make adequate provision for individualized computer training for teachers. The findings of the study which also revealed that school management reluctance (2.00) and lack of students interest in the use of ICT in aiding instructions (2.00) are not impediments shows that there is hope in the system in the use of ICT if they are available.

In order to facilitate the use of ICT for instructional delivery in schools, ten strategies were stated in table 3. It is glad to note that only one, imposition of ICT equipment levy on all taxable adults in the host community, (2.30) was not considered as a strategy. Support by wealthy individuals and old boys/girls as well as voluntary organizations was rated highest (4.00) as a strategy that could help boost ICT base of schools. This was followed by intensifying internally generated revenue base of schools (4.00). This is in agreement with authors like Odoemenam (2004), Ezeocha (1990) and Egbo (1992) who stressed the impact of contributions and donations from organizations, old boys as well as the impact felt in raising local resources in providing needed facilities in schools.

Conclusion

It has been established in this study that many of the ICT equipment are not available in senior secondary schools. The factors responsible for the situation and identified as impediments include lack of ICT equipment, lack of manpower to man the ICT equipment, non availability of alternative power supply and

insufficient fund to maintain the existing ICT equipment.

Recommendations

Based on the findings the following recommendations are made:

1. Provisions should be made by state governments in their budgetary allocations for the provision of ICT equipment in schools.
2. The acquisition of computer literacy should be made compulsory for all teachers in the public and private schools.
3. Federal government should ensure that her policy statement regarding the provision of necessary infrastructure and training for the integration of ICT in schools is implemented. This she can do through setting aside certain percentage of her annual budget for the development of ICT in schools.
4. Computer and internet facilities should be made available in schools through the collaboration of different computer outfits, individual organizations as well as communities especially wealthy individuals among the Parents Teachers Association (PTA) in different schools.
5. Institutional heads should intensify, diversify and mobilize additional means of generating resources to be able to maintain the existing ICT equipment in their school to avoid decay.
6. The state government should endeavour to provide functional generating sets as an alternative source of power supply for schools with ICT facilities.
7. The school heads in collaboration with host communities should provide security for the ICT equipment. This can be done with the help of local vigilante groups.
8. There should be training and retraining programmes through seminars, workshops on regular basis for computer science

teachers in the schools as well as for other teachers to enable them to be able to use the modern ICT gadgets.

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