

Trainee Teachers' Acceptance of Integration of Information Communication Technology in Lesson Delivery in College Of Education, Zuba, Nigeria: Counselling Implications

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Abstract - *This descriptive survey investigated trainee teachers' acceptance of the integration of Information Communication Technology (ICT) in lesson delivery. Federal Capital Territory (FCT) College of Education (COE), Zuba with a population of 4,860 students served as case study. 420 students including males and females were randomly selected from the five schools in the college. A researcher – made questionnaire was the instrument for data collection while the instruments for data analysis were the simple percentage and frequency count. Out of the 420 questionnaires distributed, only 400 were retrieved and used for the study. Some research questions were asked to guide the study. Findings showed that: ICT literacy level of the trainee teachers of FCT COE Zuba was not high, the response of trainee teachers to ICT –driven lessons was reasonably high, lack of ICT-compliant staff and constant power outage/non-availability of alternative sources of power, Poor access to ICT resources which makes it difficult for teachers to use ICT in teaching, high cost of ICT usage and Insufficient time to review and inculcate ICT materials into lessons are factors affecting integration of ICT into lesson delivery, FCT COE Zuba has insufficient technical resources to appropriate ICT into lesson delivery. Appropriate recommendations were proffered and relevant conclusion drawn.*

Key Words: *Acceptance, Integration, Information Communication Technology, Lesson delivery*

INTRODUCTION

Every system of education has as its target a teacher training programme that will churn out well-groomed teachers who can lead societal transformation especially through raising future dynamic drivers of the economy. Half-baked teachers would obviously produce half-baked graduates and consequently half-baked transformers of the economy.

In the present dynamic world, the ability to translate the classroom experience into true life experience is the order of the day and not mere paper qualification. Therefore the future teachers on whose shoulders lies the task of churning out successful drivers of the economy must be good at relating classroom experiences to the real life situation. The need for sound education is clearly stated in the following objectives of teacher education as enumerated in the 2004 National Policy on Education: to produce highly motivated, conscientious and efficient classroom teachers for all levels of our education system; to encourage further the spirit of enquiry and creativity in teachers; to help teachers to fit into the social life of the community and society at

large and to enhance their commitment to national objectives; to provide teachers with intellectual and professional background adequate for their assignment and to make them adequate to any changing situation not only in the life of their country but in the wider world; and to enhance teachers commitment to the teaching profession.

For the teacher training institutes to effectively play the role of churning out dynamic teachers, who will manage the learning process, they must proactively train teachers and must be abreast of current pedagogies such as the inculcation of Information and Communication Technology (ICT) in lesson delivery. Ejedafiru (2010) defines ICT as a technology that transmits, stores, creates, displays shares or exchanges information by electronic means. ICT forms an integral part of most human activities. For instance it comes very handy in communications, banking services, office work, buying and selling and its impact in the educational setting cannot be overemphasized. Chisenga (2006) commented that ICTs encompass a range of rapidly evolving technologies like telecommunication technologies

(telephony cable, satellite, television and radio, computer-mediated conferencing, video conferencing) as well as digital technologies (computers, information networks, internet, World Wide Web, intranets and extranets) and software applications. Sharma (2003) outlined teleconferencing, email, audio conferencing, television lessons, digital camera, radio, broadcasts, interactive radio counselling, interactive voice response system, audio cassettes and CD Rom, etc as ICT products that are relevant to education.

That most life endeavours the world over are ICT-driven, boils down to the fact that trainee teachers must be ICT compliant and in touch with current global happenings. According to Joshi and Chigh (2009) ICT can immensely motivate and engage students in learning. Innovations in technology are capable of improving the quality of the tools for teaching and learning that are already available in the classroom. This will further promote in the teacher training programme the development of ICT-related competencies. In Nigeria however, there is a great need to improve lesson delivery in the teacher training programmes to incorporate ICT, since ICT enhances the control that learners have over their learning environment and also promotes active learning. This entails a repackaging of the curriculum as well as the trainee teachers so as to appropriately fit ICT into lesson delivery. A paradigm shift from the traditional chalk and talk method with some instructional resources that are not so effective to a more sophisticated ICT-driven trend becomes very necessary. In so doing, emphasis must be placed on adopting ICT resources such as computers, multimedia projectors, satellite communications, CD-ROM, I pad, I phone, etc as better teaching deliverables. The techniques of modelling, simulations, use of data bases, guided discovery and closed word exploration, etc should be emphasized. In adopting the modern pedagogies with the inculcation of ICT; elements of the traditional techniques which are good can be retained. Provision of needed resources and production of qualified educators should be targeted. The new trend presupposes that every trainee teacher must be ICT-compliant enough to use it and teach successfully in a way that understanding is enhanced.

In countries like United States of America and China where teachers have gone far in a bid to be abreast of the current ICT trends, reasonable impact has been made in the field of education. Cox, Preston and Cox (1999) in Muntaz (2006) commented that

teachers who use computers do so because computer usage improves the presentation of materials, makes their lessons more interesting, easier, more fun for them and their pupils and more enjoyable. Gambari and Okoli (2007) opined that even if ICT has not revolutionized the classroom, it is changing the learning experience of students by reducing time and space constraints and by providing easier access to information from online journals, e-books, and students' portals, etc, and this cannot be treated with levity. It can therefore be said that in countries that have made progress in inculcating ICT in lesson-delivery, the teachers are already aware of the inherent benefits.

Liver Pool (2001) asserts that while ICT has become very popular in higher institutions in the developed world, its entrance into higher institutions in Africa and Nigeria in particular has been very slow. It is expected that other countries such as Nigeria should emulate the developed countries so that those who are expected to lead the redesigning of teacher training programmes would be equipped with the wherewithal to manage change as well as the needed ICT knowledge.

The need to make lessons more interesting, easier, more exciting, more meaningful, more engaging and more motivating should be at the back of the mind of teacher trainers. The grooming of trainee teachers must emphasize improved presentation of materials, greater access to computer for personal use and professional support through the internet. This can be done by redesigning the curriculum to fully integrate ICT. Trainee teachers should be exposed to how the traditional methods of teaching can be replaced effectively while still covering enough ground in the teaching scheme. Great emphasis should be placed on the use of ICT in teaching and not merely how to service the hardware and use some software.

Trainee teachers on the other hand must respond positively to all proactive efforts by their trainers to ensure better lesson delivery through the use of ICT. Most research studies in the field of ICT in education portray the fact that in spite of efforts made to enrich teacher training programmes, equip schools with ICT resources, and to encourage an ICT-driven curriculum, many teachers are hesitant in employing ICT skills in lesson delivery. Passey and Sammway (1997) in Muntaz (2006) opined that although efforts have been made by schools at instituting training programmes and investing in ICT resources, teachers have not commensurately embraced ICT. Many

teachers still shy away from using ICT in lesson planning and delivery.

Agbam (2004) submitted that basic education teachers find it difficult to deliver the appropriate education and training to their students but the more they can teach using ICT, the better the students grasp the lessons. Adelsberger, Collis and Pawlowski (2002) viewed increasing the level of competency as the best way to encourage teachers to use ICT in the classroom while Smith (2001) opined that the training of prospective teachers to use ICT will enable them transfer the knowledge and the skills to their future classrooms. This calls for redesigning the teacher training curriculum, for better training and retraining of teachers on the nitty gritty of ICT-driven skills for lesson delivery. This will help teachers especially trainee teachers to embrace ICT-driven lesson techniques as against delivering lessons with resources that are almost antiquated. Marshal (2002) opined that various technologies serve different purposes in the classroom and can be used differently to pass on varying contents. Such include word processing and emails which enhance communication skills, data base and spreadsheet programmes which enhance organizational skills, as well as modelling software that improves the understanding of science and mathematical concepts. Hence, Yildrim, Kynigos, Potolea, Dumont and Aufenanger (2003) believed that ICT-related courses like computer literacy, fundamentals of ICT and educational technology are compulsory courses in the teacher education programme curriculum in most countries. Thompson, Bull and Willis (2002) in the same vein identified three principles of ICT in teacher education as infusing it into the entire teacher education programme, introducing it in context and enabling students to experience innovative ICT-supported learning environments.

It is against this backdrop that this research was undertaken to test trainee teachers' acceptance of ICT –driven lessons and to ensure that trainee teachers have the full understanding of lessons and the requisite skills to survive in the twenty first century and consequently cope with a positive societal transformation. The answers to the research questions would be useful in improving the requirements for the professional development of the trainee and in-service teachers.

Challenges of Introducing ICT

Several challenges militate against the adoption of ICT into lesson delivery especially in the teacher

training institutions. Yildrim (2000) opined that from the inception of information and communication technology (ICT), teacher education programmes have been challenged with the issue of how best to teach in order to enhance human potentials and improve teaching with available technologies. One major challenge is the inability of most educators to adopt ICT after embarking on ICT training, due to insufficient ICT resources in the school or total lack of educational software. Cox etal (1999) pointed to some difficulty experienced by teachers after ICT training with respect to insufficient ICT resources in the school or insufficient time to review the ICTs and plan lessons incorporating their use. Even when the resources are available for use, constant power outage and lack of alternative power sources constitute pressing challenges. It is also noteworthy that after ICT trainings, many lecturers lack sufficient expertise to incorporate ICT in their lesson delivery. They also fail to make out time to review the ICT skills so as to incorporate them into their lesson-planning. The cost-implication of using ICT is also high. In spite of these obvious challenges, the need for incorporating ICT into lesson delivery cannot be over emphasized.

OBJECTIVES OF THE STUDY

The objectives of this study therefore are to: determine the ICT literacy level of trainee teachers of FCT COE Zuba; discover how trainee teachers in FCT COE Zuba respond to ICT?; find out from trainee teachers' the factors they perceive to affect ICT integration into lesson delivery; determine whether the school has sufficient technical resources to appropriate ICT into lesson delivery

METHODS

This descriptive survey used the FCT College of Education as case study. Through a simple random sampling, 420 students of the College were selected as sample. A researcher-made questionnaire was the instrument for data collection. The twenty five item questionnaire sought the opinion of trainee teachers on the integration of ICT in lesson-delivery. The respondents were expected to answer Yes or No to the questionnaire items. Through scrutiny by experts in measurement and evaluation, the face and content validity of the instrument was established. A test retest reliability coefficient of 0.83 for the instrument was obtained after a pilot study with 50 students of similar characteristics with the subjects of this research. After the distribution of the questionnaires, only 400 out of

the 420 questionnaires were retrieved and used for the study. The instruments for data analysis were simple percentages and frequency count used to answer the research questions.

RESULTS

The data analysis in table 1 above shows that although all the 400 (100%) students have done a basic computer course, majority of them are not proficient in ICT usage in the sense that 400 (100%) of them felt that the basic computer course was not practical-oriented, 180 (45%) of them felt that the course has impacted them positively as against 250 (55%) who said that it has not impacted meaningfully on them. Also, only 37% of them could use Microsoft office word, 12.5% could do power point presentation, only 5% could use Microsoft excel, desktop publishing and database, respectively while only 2.5% could use games and simulations and none knew about video conferencing. However, 62% could use email while 50% could browse the internet. Only 5%

of the respondents owned personal computers to enable them practise simple computer tasks.

From the analysis done in table 2 above, the response of trainee teachers to ICT –driven lessons was reasonably high. 300 (75%) out of the 400 respondents agreed that inculcating ICT into lessons makes for easier understanding, 280 (70%) agree that ICT-driven lessons are interesting, 320 (80%) found ICT acceptable, 300 (75%) agreed that it improves the presentation of materials for learning, while 300 (75%) believed it makes lessons less boring. 270 (72.5%) of the respondents agreed that it enhances performance, 300 (77.5%) agreed that it boosts the confidence of both teachers and students. On the other hand, 190 (47.5%) believed that inculcating ICT into lesson delivery makes it not easy to cover the scheme of work, 110 (27.5%) believed that it makes lessons more difficult and 180 (45%) believed it makes lesson-delivery slow.

Table 1. ICT Literacy level of trainee teachers in FCT COE Zuba

ICT Literacy level of trainee teachers	Yes	%	No	%
1. I have done a basic computer course.	400	100	0	0
2. The course was practical-oriented	0	0	400	100
3. The knowledge I derived from this course has impacted me meaningfully.	180	45	220	55
4. I can comfortably use the following computer packages/programmes: i.		37.5		62.5
Microsoft office word	150		250	
ii. Power point presentation	50	12.5	350	87.5
iii. Microsoft Excel	20	5	380	95
iv. Desk top publishing	20	5	380	95
vi. Data bases	20	5	380	95
vii. Simulations and games	10	2.5	390	97.5
vii. email	250	62.5	150	37.5
viii. Video conferencing	0	0	400	100
ix. Browse the internet	200	50	200	50
5. I have a personal computer with which I carry out basic ICT tasks.	20	5	380	95

Table 2. Response of Trainee Teachers to ICT-driven lessons

Questionnaire items	Yes	%	No(%)	%
1. Inculcating ICT into lesson delivery makes for easier understanding	300	75	100	25
2. ICT-driven lessons are very interesting	280	70	120	30
3. Inculcating ICT into every lesson delivery is acceptable to me?	320	80	80	20
4. ICT helps to improve the presentation of materials for learning.	300	75	100	25
5. ICT makes lessons less boring	300	75	100	25
6. ICT-driven lessons enhance students' performance	290	72.5	110	27.5
7. ICT boosts confidence of teachers and learners	310	77.5	90	22.5
8. It is not easy to cover the scheme of work when ICT is inculcated in lesson delivery.	190	47.5	210	52.5
9. It makes lessons more difficult	110	27.5	290	72.5
10. ICT makes lesson delivery slow	180	45	220	55

Table 3. Factors that affect ICT integration into lesson delivery

Questionnaire items	Yes	%	No	%
1. High cost of ICT usage	350	87.5	50	12.5
2. Poor access to ICT resources which makes it difficult for teachers to use ICT in teaching	370	92.5	30	7.5
3. Lack of ICT-compliant staff	400	100	0	0
4. Insufficient time to review and inculcate ICT materials into lessons	250	62.5	150	37.5
5. Constant power outage and non-availability of alternative sources of power	400	100	0	0

Table 4. School sufficiency of technical resources to appropriate ICT into lesson delivery

Questionnaire	Yes	%	No	%
1. In your school, the number of desk top computers to appropriate ICT into lesson delivery is quite reasonable.	50	12.5	350	87.5
2. In your school, the number of lap top computers to appropriate ICT into lesson delivery is quite reasonable.	60	15	340	85
3. ICT resources are readily available in your school for handling word processing, Database spread sheets, Desk top publishing and email	60	15	340	85
4. The virtual section of the school library is sufficiently stocked with functional computers.	0	0	400	100
5. There are enough staff to provide technical expertise in ICT in your school	50	12.5	350	87.5

From the analysis done in table 3 above, the factors enlisted by the respondents to affect integration of ICT into lesson delivery in the increasing order of magnitude were lack of ICT-compliant staff and constant power outage/non-availability of alternative sources of power, Poor access to ICT resources which makes it difficult for teachers to use ICT in teaching, high cost of ICT usage and Insufficient time to review and inculcate ICT materials into lessons.

On whether the school has sufficient technical resources to appropriate ICT into lesson delivery, the analysis in table 4 above showed that only 50 (12%) agreed that the number of desk top computers to appropriate ICT into lesson delivery is quite reasonable, while 60 (15%) agreed that the number of lap top computers to appropriate ICT into lesson delivery is reasonable. Also, 60 (15%) agreed that ICT resources are readily available in their school for handling word processing, Database spread sheets, Desk top publishing and email while 400(100%) disagreed with the fact that the virtual section of the school library is sufficiently stocked with functional computers. Also, only 50 (12.5%) agreed that there are enough staff to provide technical expertise in ICT in their school.

DISCUSSION

The result of the analysis of data in table one with respect to research question 1 is that the ICT literacy

level of the trainee teachers of FCT College of Education Zuba is not high enough. Although all the respondents had embarked on the basic computer literacy course, a good number of them cannot display the basic ICT skills. The students have done the basic computer course but many cannot perform simple tasks on the computer because according to them the course was not practical-oriented and so did not have meaningful impact on them. This is in line with the finding by Passey and Samway (1997) as cited by Muntaz (2006) that in spite of efforts made by schools at instituting ICT training programmes and investing in ICT resources, teachers have not commensurately embraced ICT. Another reason for this could be the assertion by Okwo (2000) that current education programmes in Nigerian universities do not provide enough computer training for the teachers to be able to use computer confidently in teaching their subjects. This is also in line with the view by Kalu and Ekwueme (2010) that the extent to which teachers are aware and knowledgeable of educational applications of ICT is low. The finding is also supported by the observation by Markauskaite (2007) of a growing concern over graduating trainee teachers' insufficient level of ICT literacy. Therefore the answer to research question 1 is that the ICT literacy level of the trainee teachers of FCT COE Zuba is not high.

With respect to research question 2, the analysis done in table two showed that the response of trainee teachers in FCT COE Zuba to ICT-driven lessons is

reasonably high. In spite of the fact that they are not highly proficient in ICT, a great majority of them believe that inculcating ICT into lessons makes for easier understanding, ICT-driven lessons are interesting, ICT is acceptable and improves the presentation of materials for learning, ICT makes lessons less boring, enhances performance, and boosts the confidence of both teachers and students. This is in line with the findings of Cox, Preston and Cox (1999) in Muntaz (2006) that teachers who use computers do so because computer usage improves the presentation of materials, makes their lessons more interesting, easier, more fun for them and their pupils and more enjoyable. Therefore the answer to research question 2 is that the trainee teachers respond highly to ICT-driven lessons.

The analysis in table 3 in answer to research question 3 suggested lack of ICT-compliant staff and constant power outage/non-availability of alternative sources of power, Poor access to ICT resources which makes it difficult for teachers to use ICT in teaching, high cost of ICT usage and Insufficient time to review and inculcate ICT materials into lessons as factors that affect integration of ICT into lesson delivery in the increasing order of magnitude. This is in agreement with the assertion of Osakwe (2010) that the challenges of the application of ICTs in the teacher training institutions and educational system in general will include limited ICT infrastructure, lack of information literacy in teachers and teacher trainers, poor or non-existent internet connectivity, inadequate learning resources, lack of independent learning skills among trainee teachers and teacher trainers, high cost of maintenance of ICT equipment and technical support and problem of power supply. This finding is also supported by Ololube (2006) who discovered that some of the barriers to the teacher education programme include the slow access to basic ICT equipment, low internet connectivity and computers and the inadequacies of the use of Audio Visual materials and equipment, information retrieval systems and instructional television.

The data analysis in table 4 with respect to research question four shows that the school has insufficient technical resources to appropriate ICT into lesson delivery. Only very few of the students agreed that the number of desk top and laptop computers to appropriate ICT into lesson delivery is reasonable. Very few also agreed that ICT resources are readily available in their school for handling word processing, Database spread sheets, Desk top

publishing and email while all the respondents disagreed with the fact that the virtual section of the school library is sufficiently stocked with functional computers. According to them there is not enough staff to provide technical expertise in ICT in the school. This is supported by the findings of Cox et al (1999) that teachers who have had computer training often have the difficulty of using ICT because of insufficiency of ICT resources in their institution and the finding of Ejidafiru (2010) that libraries in Nigeria have trouble meeting their users' needs due to poor economy and lack of ICT infrastructure. It is also supported by the finding of Ololube, Ubogu and Egbezor (2007) that ICT infrastructure and facilities are not available for instructional delivery in the tertiary institutions in Nigeria.

Counselling Implications

It has been substantiated that there are benefits accruing to teachers' adoption of teaching pedagogies that embrace the application of ICTs. Some of these benefits include increase in students' motivation to learn, enhanced ability to recall previous learning, provision of new instructional stimuli, activating the learner's response, providing systematic and steady feedback, and so on. This implies that through counselling trainee teachers should be sensitized to embrace the use of ICT in lesson preparation and presentation so as to kindle in the hearts of the learners a favourable disposition towards ICT tools in their everyday life. Counsellors should bear in mind the point raised by Wheelers (2001) that ICT will not only enhance learning but also prepare the next generation for future lives and careers and then advocate for proper integration of ICT into teacher training programmes. Through Counselling all stakeholders of education should be made to recognize the fact that ICT promotes learner-centred lesson delivery above teacher-centred lesson delivery and consequently improve the quality of learning, while better equipping the learners for lifelong learning. Serving teachers should also be counselled on the need to boost their ICT skills and use them appropriately for improved lesson delivery.

CONCLUSION

There is need to embrace the best practices of using ICTs in lesson delivery so as to reinforce existing teaching methodologies. By so doing, lessons become more learner-centred, more engaging and more effective. Inappropriate use of ICTs is capable of

causing more harm than good. On the other hand ICTs when appropriately employed makes the delivery of lessons more flexible and enables learners to have access to knowledge wherever they are and at anytime. The teacher training programmes if fully enriched through employing Information Communication Technology will enhance the quality of trainee teachers being churned out and who eventually will train the future generation of learners.

RECOMMENDATIONS

The findings of this research call for an in-depth look into how teacher training programme can be reorganized for better performance.

Government should reorganize teacher training programme to ensure inculcation of ICT across the Curriculum. Even after teacher training there should be a follow-up with continuous professional development.

Efforts to help trainee teachers imbibe ICT skills should stress the fact that teachers' ICT skills should buttress traditional skills of lesson planning, preparation and execution.

Adequate funding by Government is very essential for the management of ICTs.

Government should ensure constant power supply. Government should ensure refresher courses in form of workshops, conferences and seminars for teacher trainers and trainees on the operation and usage of ICT.

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