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Biology Teachers' Perception of ICT Capacity Building Workshop In Oyo State Secondary Schools, Nigeria

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ABSTRACT
The study examined biology teachers' perception of ICT capacity building workshop in Oyo State secondary schools. The study used descriptive survey. The census of 147 biology teachers from Iseyin and Iwajowa Local Government Area that attended a 3-day ICT capacity building workshop was used for the study. A research question and two hypotheses guided the study. Data were collected with the use of questionnaire on ICT capacity building workshop. The instrument reliability was Cronbach's alpha coefficient. 86 data for answering the research question was analysed using mean and standard deviation while t-test was used in testing the hypotheses at 0.05 level of significance. The results of findings showed that biology teachers' perception of ICT capacity building workshop was low as most biology teachers lacked clear understanding of what significance ICT capacity building workshop may afford them.
The findings also indicated that facilities were grossly inadequate to effectively equip biology teachers with knowledge of ICT capacity workshops. The results also showed that the frequency of the use of ICT capacity building workshop was once in a year event which is inadequate duration for any meaningful utilization of any technologies to enhance ICT knowledge among learners. As regards these findings, recommendation amongs other was that ICT capacity building workshop should be more frequently organized in the state to update biology teachers' knowledge on ICTs for delivery lesson.
Keywords: ICTs, Capacity building workshop, ICTS, perception, biology teachers.

INTRODUCTION

ICT Resources and Application

In order to revise and update educational curricula already existing is to make the curricula to respond to multifaceted changes occurring globally in the scientific world cannot be overemphasized by Etubon and Akpan 2017
ICT is becoming increasingly important in our daily lives and in educational system. ICT has challenged the conventional teaching methods, transformed instructional practices and contributed to emerging new instructional methods (Tezci 2011 Kubiatko, 2009) ICT has become an important component of educational reform and an integral part of school curriculum (Papanastasious & Angeli, 2008). As Stated by World Bank (2007) many governments have invested in ICT to improve its integration into education.
The resources that are used include computers, digital cameras, power point, live video stream, multimedia software applications, internet, television and video affording serious of exchange of information and knowledge, skills and ideals.
The Dakar framework for action (April 2000) identified the use of ICT as one of main strategies for achieving the world declaration of Education for all adopted at Jomtein in 1990 and called on all nations to harness new information and communication technologies to achieve these goals. At the

Hwachong Education conference march 2010, it was recognized that developments in ICT have opened up exciting new possibilities for teaching practices in order to better engage and excite learners. ICT has changed the way people think and learn and has helped activities to run smoothly towards achieving educational objectives. ICT is transforming, how, what and where learn my can take place and the roles teachers and students can play to allow learning experiences flourish and be sustained. Institution individuals and nations are becoming more aware of the important role that teachers play in the utilization of ICT to update classroom instructions. The utilization of resources advances knowledge. Access to internet has improved greatly through cybercafé, but most individuals are not connected and the institution is yet to be well connected as to making internet available for students, use, hence, they result in going to cybercafé for any form of internet use which result in slow learning. The Nigerian policy of education (FRC, 2013) supports the integration of ICT in its curriculum for learner's benefits and describes the National policy on Information Technology (2001) as any equipment used in the acquisition storage, manipulation, management, control, display and transmission of information.

Goals of Biology Teaching

Biology is the branch of science that involves the study of life and living organisms (Soyibo, Ekpunobi, Akinade, Muhammed & Tureta, 2013) Kara (2015) sees biology as the field of science that deals with physiochemical aspects of life. Biology according to Wikipedia 2015 was defined as a science which is concerned with the study of life and living organisms including their growth, structure, functions, distribution, taxonomy and their evolutionary trends. Science education a vital role in the lives of individuals and a nation's sustainability, the ultimate goal in science teaching in secondary school is to improve high quality teachers that prepare students with the knowledge and skills for self –reliance after school and be able to contribute productively in the workplace. Teachers must be adequately prepared for the knowledge, skills and creativity using ICT technologies. Teachers must be good instructors by using ICT tools to purse this goals through generation and dissemination of skills, knowledge and ideas that will enable learners meet the manpower requirement of the country. Egbo (2011) stated that to achieve this goal as well as to stem the tide of teachers' under performance, building teachers' capacity is not only critical to successful teaching and learning, it should also be the starting point for reconstituting the education system. Building teacher quality using ICT tools will go along way in actualizing this goal.

Although efforts have been made to ensure that ICTs are available and used in Nigerian secondary schools, the level of uptake is still low. It has been observed by Gushit (2006) that most schools, both private and government do not offer ICT training programmes. Use of ICT by teachers could be for the purposes of enhancing teaching and learning such as communicating, playing, games, doing homework, searching for information, practice and drilling such as foreign language learning and mathematics (OECD, 2014). The European Commission (2013) 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.

The Nigerian federal government has commissioned a mobile internet unit (MIU) operated by the Nigerian National information technology Development Agency (NITDA). The mill is locally- made bus that has been converted into a mobile training and cyber centre. Its interior has ten work stations all networked and connected to the internet.

Changing Trends of ICTs

ICTs is becoming increasingly available to schools, and many homes capable of affording one for themselves and children. The biology teachers of nowadays need large amount of information to perform maximally. This means that teachers have to learn to navigate information, analyse the information, make decisions and acquire new knowledge to accomplish tasks. The teachers will structure their lessons to include the use of ICT in the classroom and would adopt a more student-centred approach to delivery, actively engaging students in the construction of knowledge (caty-Ann 2011) capacity building is a form of training needed to improve teacher quality. Training equips and familiarizes a teacher with skills and experiences to perform better on his job. Training and retraining of teachers is very important because the training teachers will be highly motivated, competent and productive (Obunadike & Nwankwo 2012). The teachers been trained will be more evident as the

teacher face the challenges of learning new skills which will help them to maintain proficiency and prepare for future technology needs and advancement. So capacity building workshop should be used as instrument or tool for training.

Capacity Building of Biology Teachers

Capacity building is the training that aims at imparting knowledge to improve performance and attain a require level of skill. Egbo (2011) defined capacity building as training needed by workers to enhance professional skills and improve behaviours and attitudes to student on the job capacity workshops are to develop the potential of teacher skills and knowledge in order to reinforce already acquired ideas and to update on emerging ones. In this century teachers are to be equipped with skills for problem-solving, self-sustenance and career progression pursuits in the workplace and for students' nurturing. In order to achieve this, teachers require extensive, ongoing exposure on capacity building in ICT environments to be able to assess and select the most appropriate resources/facilities that will help their classroom instructions. This will enhance the method of teaching in ways that influence teachers' perspective to biology teaching and improve student' learning outcomes But unfortunately. In Oyo State, many biology teachers are not computer literate and do not have the skill and knowledge to transform the way teaching is done using ICTS, the future of biology education in Nigeria may be bleak due to numerous benefits biology as a subject has in the growth of any developing nation. To meet these new standards, biology teachers will have to learn new teaching methods/techniques and experience (Gulamhussen, 2013). This as to do with the way teachers perceive capacity building workshops by the use of ICTs.

Teachers' Perception of ICT for Capacity Building

Teachers' perception on the use of ICTs is diverse and varied and affects the way biology teachers teach. Knowledge gap is wide among many biology teachers regarding capacity building workshop, many biology teachers have never attended any capacity building workshop. Many or some biology teachers are yet to come to terms with the scope, content and duration of capacity building workshops. Some view it as elitist education for those who want to change from teaching to an administrative career. Other biology teachers believe that the organizers invite well known teachers to the workshop because of the allowance that may be attached to it. Others believe that the same set of teachers used to attend the workshop each time it is organized, so that only few teachers benefit at the end of the day. These misconceptions largely account for biology teachers' lack of interest in attending capacity building workshops.

Etiubon (2011) and Nneji and Otaru (2016) asserted that capacity building workshops cannot yield the desired result because it is scorned for the following reasons:

d. It is believed that science teachers especially biology teachers can teach without the need for ICT facilities.
e. It is believed that science concepts like biology are concrete and hands on-activities help teachers better than using ICT tools.
f. It is also believed that physical activities present vivid conceptualization than ICT concept presentations. It is easier to manipulate what is seen than what is presented using ICT tools. It is difficult to change from what has been in use to a new idea.

The major objective of capacity building is to expose the teachers to function more effectively and to open them to the latest concept, information and techniques, such as the use of capacity building workshops and developing in them knowledge and skills required in their fields (FRN, 2013). The digital age teacher is expected to be a global teacher functioning effectively in any part of the world Samba (2015). Teachers need the knowledge of ICT to collect, process, storage, transmit any information.

The mastery of basic skills and concepts in a capacity building workshop are taught to assist teachers' learning and bring awareness, familiarity and ability to use new technologies. Ajayi, Yohanna & Uche (2014) posited that effective use of communication technologies require peculiar demands which teachers must be aware of and adequately perceive to put to effective use.

The ICT teachers need to work with learners to boost computer knowledge because the use of ICT make the traditional educators to become facilitators and making them to be strengthens educators repertoire of skills and opens up a wider array of learning resources for learners to be a access. Teachers must changes their perception towards ICT capacity building workshops and advance knowledge to make progress in all areas of instructional activities, capacity building workshops for

biology teachers must be effective to accommodate a wide range of knowledge and skills to bring into reality the objectives of biology instruction.

Availability of ICTs Resources / Tools

There is need for the availability of major ICT tools in capacity building workshops for biology teachers to facilitate the objectives of biology education. Among the needs is to have personal computers access to internet facilities and services sharing of information, integrating ICT into the classroom environment use of technology to evaluate learning performance and achievement. Due to the availability of ICT tools like videos, phones, computers and laptops teachers can actively engage in acquisition of scientific knowledge to improve their thinking and solve problems with ease most biology teachers are not even aware of the different types of ICT tools that are available for lesson instruction as the institutions where these biology teachers graduated from do not have these facilities. The following ICT tool are grossly inadequate in the institutions e.g computers, interactive white board, broadband internet, projectors, VCD-Rom, multimedia, hardware and software computers. For instance, pieces of equipment are borrowed from private firms and private institutions to execute capacity building workshops.

This incapacitates adequate functioning of biology teachers after the programme as they no longer come in contact with the tools used for the workshop after training. Huk (2013) observed that most biology teachers are not familiar with ICT tools and devices that simplify instructions and as such could not practice independently. This is not palatable for teachers need to update themselves with new methods and strategies of teaching.

Frequency of Use of ICT

Capacity building workshop builds teacher's confidence and affects the way lesson is conducted students' have interest in searching for information online, this is useful tool to develop their critiquing skills as they search from variety of reliable sources (Rolfe, 2007) and so must be the biology teacher. The frequency of expose of biology teacher to ICT capacity building will make the teacher highly competent to evaluate his / her academic progress. The traditional teacher training workshops have not been seen as effective in helping teachers to feel comfortable using ICTs, let alone in integrating it successfully into their teaching. The duration of exposure of a biology teacher to ICT capacity training workshop greatly influences lesson output. This is crucial for connecting students to the wider global community.

Okonkwo (2014) posited that teachers are not fully utilizing technologies advances through frequent exposure to ICT workshops, questioning whether they will meet the needs of shifting-knowledge based societies and increasing diverse student populations, in the same vein, Agommuoh and Ndirika (2016) reported that although the importance of measuring the training that teachers receive to engage with ICT cannot be overemphasized, training programmes do not ensure that ICTs are used in the classroom regarding their potential. Teachers need frequent exposure on ICT capacity training to broaden their knowledge using support opportunities like training workshops.

Gender and ICT

There are differences in opinions regarding gender involvement with technologies. Researches showed that male students utilize internet services more than their female counterparts. Nwebaze (2011) pointed out that male and females researchers are not equally likely to be trained to use ICTs in classrooms environment, whereas male teachers are more likely to be trained to teach basic computer skills and computing. Gender barriers have been identified to hinder females in science and technology Onwugbuna that this may still persist to this present era of information superhighway.

Statement of the Problem

Biology teachers' perception to the use of ICTs is diverse with low computer use, awareness, willingness to change and inability to invest in knowledge and skills. Some of the biology teachers do not see the need to engage in the learning of ICTs as they do not own personal computers and the schools they work do not have ICT facilities. Therefore, they do not see the need to attend ICTs capacity building workshops to equip them for skills and knowledge. This is not good at all, as ICT technologies are daily emerging and changing the ways people think, act and do things. Thus the study sought to investigate biology teachers' perception of ICT capacity building workshops in secondary schools in Oyo State.

Purpose of the Study

The study investigated biology teachers' perception of ICT capacity building workshops in secondary schools in Oyo State. Specifically; the study sought to

3. Investigate the level of perception of biology teachers on ICT capacity building workshop
4. Examine the availability of facilities for ICT capacity building workshops for Biology teacher's instructional delivery.
5. Investigate the frequency of use of ICT capacity building workshop for biology teachers

Research Question

What ICT Facilities are available for biology teachers ICT capacity workshop for biology instructional delivery

Research Hypotheses

(1) Male and female biology teachers do not differ significantly in their perception of ICT capacity building workshop for biology instructional delivery

(2) There is no significant difference in the frequency of use ICT capacity building workshop for male and female biology teachers instructional delivery

RESEARCH METHODOLOGY

This study adopted a survey design. The population consisted of all 78 biology teachers in all the secondary school in Iseyin Local Government Area and Kajola. The sample size was the 78 biology teacher who attended a 3-day training workshop for ICT capacity building.

The instrument for data collection was a questionnaire on ICT capacity building workshop for biology teachers. Instrument had 20 items: A 4-point mean rating scale of Strong Agreed (SA=4) Agreed (A=3) Disagreed (D=2) and Strongly Disagreed (DS=1) elicited information on biology teachers' responses on ICT capacity building workshop. The research question and two hypotheses were tested at 0.05 level of significance guided the study. Two experience secondary school biology teachers and a lecturer in educational technology of the Ladoke Akintola University of Technology Ogbomosho Oyo State validated the instrument Cronbach alpha was used for reliability testing which gave 0.86. The rating scale elicited information on teachers' responses on ICT capacity building workshop. All copies of instrument administered during the capacity building workshop were filled, completed and collected during the workshop.

The analysis of data collected was done using mean (x) and Standard Deviation (SD) to answer the research question and t-test statistics to test the hypotheses. Item with response means above 1.00 were accepted while those below 1.00 rejected.

Table 1: Mean ratings of teachers' awareness on availability of facilities for ICT capacity building for biology teachers

S/N	Availability of facilities for ICT capacity Building workshop	X	SD	Remarks
1.	Computers for searching information	0.53	0.18	Rejected
2.	Digital cameras	0.43	0.15	Rejected
3.	Internet for browsing	0.54	0.14	Rejected
4.	TV/videos	0.44	0.15	Rejected
5.	Laptops /ipad / virtual labs	0.61	0.13	Rejected
6.	Light supply source	1.03	0.19	Rejected
7.	App store for information storage	0.59	0.06	Rejected
8.	Browsing phones	0.63	0.04	Rejected
9.	Electric white board	0.39	0.11	Rejected
10.	Printed materials	1.07	0.15	Accepted
11.	CD/VCD Roms	0.63	0.11	Rejected
12.	Head lights	0.64	0.08	Rejected
13.	Projectors	0.89	0.19	Rejected

Results in table 1 showed that all items that had mean responses below 1.00. The result means that the availability of facilities for ICT capacity building workshop was perceived low by the participants.
Hypothesis 1: Male and female biology teachers do not differ significantly in their perception of ICT capacity building workshop for biology instructional delivery.

Table 2: t-test analysis of differences in the perception of ICT capacity building workshop for male and female biology teachers

S/N	Teacher perception of male ICT capacity building workshop	Male	Female	T value	P value	Decision
1.	New ICTs applications are scary	1.04	0.89	0.73	0.01	Accepted
2.	Capacity building workshop is waste time	0.99	0.78	0.11	0.24	Rejected
3.	It is difficult operating ICT technologies	1.06	0.98	0.43	0.07	Rejected
4.	There are problems using ICT softwares for capacity building	1.11	1.02	0.68	0.02	Accepted
5.	I cannot deliver instructions with ICTs	1.04	0.00	0.00	0.33	Rejected
6.	Few biology teachers attend capacity building workshops	1.08	0.97	0.43	0.06	Rejected
7.	Time is consuming downloading lesson notes	1.03	0.75	0.27	0.02	Rejected
8.	No interest in learning new technologies	1.06	0.82	0.93	0.00	Accepted
9.	Difficulty searching different environment to upload information	1.07	0.90	0.88	0.00	Accepted
10.	Can use ICT tools with minimal effort	1.05	0.97	0.54	0.00	Rejected

Results in table 2 presented the mean, calculated and critical t-values and p-values of male and female biology teachers on level of perception of capacity building for biology teaching. The results showed that the mean (x) of the males are greater than the mean of their female counterparts. The result also showed that the p-value of items 2,3,5,6,7 and 10 are not significant while items 1,4,8 and 9 are significant. The hypothesis 1 is accepted for items 2,3,5,6,7 and 10 and rejected for items 1,4,8 and 9. There is therefore, a no significant difference in the level of perception of capacity building workshop of male biology teachers and their female counterparts for items 2,3,5,6,7 and 10 while there is a significant difference capacity building workshop of male biology teachers and their female counterparts for items 1,4,8 and 9.

Hypothesis 2: There is no significant difference on frequency of use of ICT capacity building workshops by male and female biology teachers.

Table 3: t-test analysis of differences of frequency of use of ICT capacity building workshop for biology teachers

S/N	Frequency of use ICT capacity building workshop for biology teacher	Male Mean (x)	Female Mean (x)	T - value	P - value	Decision
1.	B1 monthly mentorship	1.13	0.76	1.83	0.00	Accepted
2.	Monthly focused group discussion	1.03	0.73	1.39	0.00	Accepted
3.	Three month period	1.14	0.83	1.56	0.00	Accepted
4.	Once –in – a year gathering event	0.93	0.87	0.29	0.12	Rejected
5.	Too short duration of 3days	0.99	0.96	0.13	0.16	Rejected
6.	Short courses for 6 long weekends	1.10	1.09	0.07	0.24	Rejected
7.	One day symposium	1.01	0.90	0.63	0.02	Rejected
8.	Regular ICT training workshop	1.03	0.90	0.75	0.01	Accepted
9.	Two week duration	1.07	0.79	1.20	0.00	Accepted
10.	A week long outing	1.06	0.98	0.23	0.03	Rejected

Results in table 3 showed that the mean (x) of the male are greater than the mean (x) of their female counterparts. The result also showed that the p-value of 4,5,6,7 and 10 are not significant while those on item 1,2,3,8 and 9 are significant. The hypothesis 2 is therefore accepted for items 4,5,6,7 and 10 and rejected for items 1,2,3,8 and 9. There is therefore, a no significant difference on frequency of use of ICTs capacity building workshop received by male and that received by their female counterparts for items 4,5,6, 7 and 10. On the other hand, there is a significant difference in the frequency of ICTs capacity building workshop training received by male biology teachers and that received by their female counterparts for items 1,2,3,8 and 9.

DISCUSSION OF FINDINGS

Results of findings in table 1 revealed that capacity building workshop mounted for biology teachers lacked adequate facilities as few available ones. It was also observed that most biology teachers lack awareness on tools available to enhance teacher student online discussions. This does not help in adequate preparation of teachers for integration of ICTs in lesson delivery this finding agrees with HUK (2013) that most teachers were not familiar with ICT tools and devices that simplify instructions and as such could not practice independently. Students' uptake of ICTs is growing and science teachers need to upgrade themselves with emerging technologies. Results in table 2 revealed that biology teachers' perception of ICT capacity building workshop was low as most biology teachers do not have clear understanding of ICT capacity building workshop that can enhance their knowledge and skills using required ICTs. This may be due to biology teachers' lack of basic ICT literacy skills as well as use of ICTs as tools for teaching and learning. This finding agrees with Gibbons (2004) that experiments and laboratory simulations can be accomplished through the use of ICTs as this enhances teacher preparation of instructional delivery. Biology teacher's willingness to avail themselves of ICT capacity building workshop will go a long way to equip their skills on ICTs.

Result in table 3 indicated that the frequency of use of ICT building capacity building workshop is too short and is mostly a-once-in-a-year event. This does not help biology teachers to acquire the needed skills and knowledge to equip them face the future with constantly changing ICTs. This finding is in agreement with Okonkwo (2014) that teachers are not fully utilizing technologies advances, through frequent exposure to ICT workshops, questioning whether they will meet the needs of shifting – knowledge based societies and increasingly diverse student populations with students interest on the

use of ICTs, teachers need constant exposure to ICT capacity building workshops to come into mainstream and maximize the benefits that ICTs offer.

CONCLUSION

The usage and adoption of new technologies is providing opportunities to improve teachers and also students' performances and they are to be embraced. The biology teachers must acquire ICT knowledge for relevance. Adequate facilities and regular capacity building is required for biology teachers must be in place.

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