

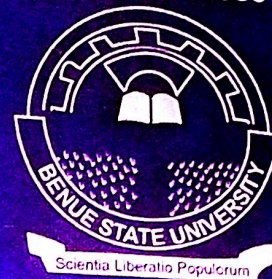
**Benue
State University**
**JOURNAL OF
EDUCATION**

Scientia Liberatio Populorum

**A PUBLICATION OF THE FACULTY OF EDUCATION,
BENUE STATE UNIVERSITY,
MAKURDI**

BSUJE 2016

Vol 16 NO 1 April
ISSN 1117 - 6350



EDITORIAL TEAM

Editor in Chief
Prof. Gbenda Batur-Laha
Dean Faculty of Education
Benue State University, Makurdi

Editorial Manager
Prof. Peter O. Agbo
Benue State University, Makurdi

Language Editors
Prof. Chinwe Muodumogu,
Faculty of Education
Benue State University, Makurdi

Joy Nwokolo-Ojo Ph.D
Benue State University, Makurdi

Secretary
Nyiahule P.M
Faculty of Education
Benue State University, Makurdi

Editorial Consultants
Prof. C.T.O. Akinmade
University of Jos, Jos

Prof. Timothy Oyetunde
University of Jos, Jos

Prof. E.E. Achor
Benue State University, Makurdi

Prof. C.O. Abah
Faculty of Education,
Benue State University, Makurdi

Prof. (Mrs) Elizabeth Y. Gyuse
Faculty of Education,
Benue State University, Makurdi

Prof. Z.C. Njoku
University of Nigeria Nsukka

Prof. Targema Iorvaa
Benue State University, Makurdi

Prof. P.C. Nworu

Benue State University
Journal of Education (BSUJE)

Volume 16. No. 1, August., 2016. ISSN: 1117-6350

EDITORIAL TEAM

Editor-in-Chief

Prof. Gbenda- Batur Laha
Dean, Faculty of Education,
Benue State University,
Makurdi

Editorial Manager

Prof. Peter O. Agogo,
Professor of Science Education
Benue State University
Makurdi

Language Editors'

Prof. Chinwe A. Muodumogu
Benue State University,
Makurdi.

Joy Obiageli Nwokolo-Ojo, PhD
Benue State University,
Makurdi.

Secretary

Polycarp M. Nyiahule
Benue State University,
Makurdi.

Editorial Consultants

Prof. C.T.O. Akinmade
University of Jos, Jos.

Prof E. E. Achor
Benue State University,
Makurdi.

Prof. Timothy Oyetunde
University of Jos, Jos.

Prof. C. O. Abah
Benue State University,
Makurdi.

Prof. (Mrs) Elizabeth Y. Gyuse
Benue State University,
Makurdi

Prof. Z. C. Njoku
University of Nigeria
Nsukka.

Prof. Targema Iorvaa
Benue State University,
Makurdi

Prof B. G. Nworgu
University of Nigeria,
Nsukka.

Benue State University
Journal of Education(BSUJE)
Vol 16, No. 1, August 2016. ISSN:1117-6350
A Publication of the Faculty of Education
Benue State University, Makurdi

CALL FOR PAPERS

1. The Editorial Board of the Benue State University Journal of Education (BSUJE), an annual publication of the Faculty of Education of the University, will consider for publication in the subsequent issues of the Journal in June and September yearly, a variety of high quality manuscripts on issues relating to any field of education. Although theoretical and philosophical papers are welcome, more emphasis will be placed on empirical research work.
2. Two copies of each article intended for publication and accompanied by a processing fee of N3000 in cash or bank draft payable at Makurdi. Articles are received throughout the year.

All correspondence should be addressed to:

The Secretary
Editorial Board BSUJE
Faculty of Education
Benue State University, Makurdi
Nigeria.

3. Articles submitted to the Journal should be scholarly and original contributions of authors and should not be under consideration for any other publication at the same time. Articles should not be more than twelve pages A4, double spaced typing on one side of the page only, (including abstract and references). Tables and figures should be kept to the barest minimum and should be included in the text. All tables and figures should be properly captioned and numbered serially throughout the text.
4. Each article should be arranged as follows:
 - i. Title of the article, name of the author(s) and affiliation(s) all on the same page.
 - ii. Title of the articles, and abstract of not more than 150 words followed by the main body of the articles.
5. Quotations of more than fifty words should be indented three spaces typographically double spaced. All shorter quotations should be enclosed in quotation marks.
6. References should follow the latest APA style. Endnotes and footnoting

not allowed.

7. Ideas expressed in the articles are personal to the contributors. As such, the authors are responsible for the views they express. Contributors should obtain written permission to use materials for which they do not have copyright.
8. Articles sent for publications will be subjected to expert peer review and only those found publishable by assessors will be published in the Journal.
9. The Editorial Board will not enter into correspondence with authors whose articles are not found publishable.
10. Contributors should enclose two self addressed stamped envelopes for return post.
11. All payment shall be made in cash in Makurdi or through the bank; User name: Benue State University Journal of Education (BSUJE); Account No: 6160388528. Fidelity Bank, PLC, BSU Branch, Makurdi, Benue State.
12. Articles can also be sent online through e-mail: bsuje@yahoo.com or poagogo2007@gmail.com
13. Thank you for publishing with us.

Benue State University

Journal of Education

Vol 16, No. 1 August 2016. ISSN: 1117-6350

A Publication of the Faculty of Education
Benue State University, Makurdi

Contents

- Influence of school location on students' conception of mathematics concepts in Edo State
F.O. Idehen, PhD 1
- Influence of learning environment on the performance of students in mathematics in Kwande Local Government Area of Benue State
Martha Mimi Chianson, PhD and Donald Aondona Uzege 12
- Impact of Hands-on activity approach on Basic Science students' achievement in Oju Local Government Area of Benue State
Jackson O. Ode and Prof. Peter Ogbu Agogo 27
- Influence of teachers attendance to class and assessment practice on pupils perceived performance in primary science in Makurdi Local Government Area of Benue State
Queen Doofan and Joseph Obida PhD 32
- Management challenges of primary Education in Nigeria
Obiaweluozor Nkechi (Miss) and Abiodun Ibhade Ogeleka, (Mrs.) 38
- Improving students' motivation through textbook illustration with feedback in the learning of Biology in Makurdi Local Government Area.
Anthonia Orokpo, PhD and Prof. Emmanuel E. Achor 45
- Biology Teachers' status and motivation in secondary schools in Bosso Local Government Area of Niger State, Nigeria
Idris Umar Sarki Bauchi, Yusuf Olayinka Sikiru, Babagana Mohammed, Abdulraham Muhammed Alfa and Zippora Pada Gabriel 51
- Effect of textbook illustration with feedback on students' achievement in Biology in Makurdi Local Government Area of Benue State
Anthonia Orokpo, PhD & Prof. R.M.O. Samba 59
- Biology Teachers perception of integrated Science mobile phones as instructional strategy in teaching senior secondary students' in Minna Metropolis, Niger State
Babagana Mohammed, Idris U.S.B, Chado, A.M, Ndagi, M.V. and Jibril, M.N 60

The Role of Assessment, Evaluation and Monitoring in the Transformation of Nigeria Education to the global level. Emmanuel Edung Egbeji, PhD, Tyoakaa Lazarus Mvendaga and Mrs. Osuji Celestine PhD	162
Emerging issues in Vocational and Business Education Development in Nigeria in the 21 st Century Joy Obiageli Nwokolo-Ojo, PhD and Solomon K. Agishi, PhD	169
Customers' perception of service performance at the federal medical centre, Makurdi: The management implications Dr. Mathias Oyigeya and Dr. Asor Adyorough	179
Availability of facilities for effective teaching and learning of motor vehicle mechanic work in Technical Colleges in Benue State F.O. Jika	189
E-Education: Internet cyber café and the promotion of Teaching in Nigerian Universities Audu Godwin Ankeli PhD and Rev. Fr. Anthony I. Bature, PhD	198
Entrepreneurship Education and National Development: The Role of Government Innocent Arome Ocholi and Ruth Ejembi	205
Effects of Group-oriented instructional methods on Technical College Auto Electricity students Raymond Emmanuel and Abutu Francis	212
Field Education as an integral component of social work Education: students' perception of the learning process Mrs. Tracy Beauty Evbayiro Omorogiuwa MSW	221
Hausa cultural practices and Gender as a factor of students' achievement in Biology in Hadejia Education zone of Jigawa State Abdullahi Dogo Abubakar, PhD, Prof. Joel Obo Eriba and Prof. Peter Ogbu Agogo	229
Impact of wood industries on the Economic status of Niger State Residents W.B. Kareem, R.O. Okwori, B.M. Mohammed and Hamman Usman	236
Instructional media and effective classroom management practices Anthony Aniah PhD and Adamu Zubairu Evuti, PhD	244
Enhancing Universal Basic Education in Nigeria: Scientifically literate teachers as a key factor to goals actualization. Bello Muhammed Rabiu, Wasagu Mamman Audu and Wushichi Dentani Idris	251

Impact of HIV/AIDS knowledge on young people's sexual risk behaviour in Makurdi Local Government Area of Benue State Akpenna Demenongu Donald, Gabriel Ekpeme Obi and Eje Victor Inyila	75
Combating Ebola Virus Disease (EVD) in Nigeria Hanior Timothy Tavershima	84
Visual acuities and immunization statues among pupils of Universal Basic Education in Edo State, Nigeria Fidelis Uchendi Okafor, PhD and Agharase Effe-Aigbove	89
Administrative issues militating against the teaching of fine and applied Arts Education in Nigerian Schools. John Faeren Anyam and Juliet Denen	98
The use of Aesthetic principles in enhancing learning in Nigeria secondary schools Ike P. Aghaosa, PhD	105
Repositioning Polytechnic Education for sustainable National Development: The challenges of Vision 20:2020 Peter A. Agu, PhD and Dennis B. Kaduhur, PhD	111
The inclusion of Entrepreneurship Education in social studies Education to promote skill Development among students Augustine Tyohule Shamija, PhD, Michael Tsebee and John Onah Idikwu, PhD	118
Relevance of Fieldtrip in the teaching and learning of social studies Hanior Timothy Tavershima	126
Constraints to effective planning and implementation of Higher Education programmes in Delta State Rowell Erhieyovwe Ubogu, PhD	131
Assessment of male and female Administrators' involvement in Examination misconduct in certificate Examination in Benin-City Metropolis: The counselling implications Mrs. V.E.I. Audu, PhD and Mrs. H.J. Osarumwense, PhD	138
Assessment of Counselling services in the reduction of Youths involvement in violent activities in Nigeria. Andrew A. Adubale, PhD	146
Ethical issues in the conduct of Educational Research and Evaluation. Joy Obiageli Nwokolo-Ojo, PhD, Gabriel Akume, PhD and Maashin Amenger	156

Effects of computer Assisted concept mapping and Analogical Instructional Practices on Niger State Secondary School Students' Retention in Biology
Koroka M.U.S, Prof. (Mrs.) V.I. Ezenwa, Wushishi D.I. and Omalu, L.C.J

261

Resistance to change, perceived values, self-Efficacy and Attitude towards the use of information technology for teaching among primary school teachers in Illorin, Nigeria

Shittu Ahmed Tajudeen, PhD, Gambari Amosalshiaka, PhD and Obie Lodan, O.O., PhD

270

Effect of computer Animation on students' Achievement and interest on Technical Drawing in Technical Colleges in Niger State

A.M. Hassan, G.A. Usman, A.M. Idris and B.U. Musa

281

Biology Teachers' Perception of Integrating Mobile
Phones as Instructional Strategy in Teaching Senior
Secondary School Students in Minna Metropolis, Nigeria

Babagana, M.¹

Idris, U. S. B.²

Chado, A. M.³

Ndagi, M.⁴

Jibril, M. N.⁵

^{1,2,&3}Department of Science Education, Federal University of
Technology, Minna, Nigeria.

^{4&5}Niger State Secondary School Education Board, Minna, Nigeria.

Abstract

This study examined Biology teachers' perception of integrating mobile phone as an instructional strategy in teaching and learning of Biology in senior secondary schools in Minna Metropolis, Niger State. A total of 50 Biology teachers was sampled. In carrying out the research, two research questions and two hypotheses were formulated. The data collected were analyzed using mean, standard deviation and t-test, using Statistical Package for Social Science (SPSS) application version 20. The results indicated that Biology teachers negatively perceived the application of technology into teaching and learning activities in schools, use of mobile phones for teaching and learning of Biology. There was no gender difference in Biology teachers' perception of application of technology in to teaching of Biology;;No gender difference in the Biology teachers' perception of integrating mobile phone as instructional strategies in teaching Biology in senior secondary schools in Minna Metropolis. Based on these findings, it was recommended that government should educate, encourage and provide mobile phones to schools to enhance teaching Biology.

Key Words: Mobile phones, Technology, perception, Biology teachers

Introduction

Information and communication technology (ICT) occupies a predominant position in the contemporary world today. In fact, modern ICT have brought revolution in the field of education, industry, service organization, and telecommunication and various other fields affecting our day-to-day activities (Mangal, 2013). Adegbija and Falode (2014) pointed out that the use of (ICT) has tremendous growth in the recent past because of its significant impact on all areas of human endeavors. The field of education is not left out as technology has positively affected teaching, learning and research in many ways, Adegbija (2014) further observed that ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change for the better in the knowledge-base society and in the global world.

ICT encompasses all that enable the handling of information and facilitate different forms of communication. These include all communication devices or applications such as radio, television, mobile phones, computers network, hardware, software, satellite system as well as various service and application associated with them like video conferencing, teleconferencing and mobile learning (Anasi, 2005).

Mobile learning is the exploitation of ubiquitous handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning. Similarly, mobile learning according to Trawler (2007) is any sort of learning that happens when the learner is not at a fixed, predetermined location or learning happen when the learner takes advantage of the learning opportunities offered by mobile technologies such as laptop, tablet and mobile

phone etc.

M-learning has two primary delivery strategies. The use of mobile device to delivery performance support services and the use of mobile device to teach through communication. wireless m-learning performance support systems (PSS) are similar to traditional performance support service (Wenger & Snyder, 2000). Mobile device such as mobile phones are used for teaching and learning. Mobile phones connect students with teachers and other students and help them to deal with class attendance issues, rearrange meetings, retrieve schedule and assignment date, discuss assignment, coordinate study groups, and seek help with academic and life problems (Kazt, 2011). Teachers across the developed world are already using mobile phones for teaching. Teachers give oral quizzes through cell phone. Teachers take video of their teaching presentation and upload this so that students who were unable to attend the lecture can use it for revision (Kolb, 2008).

In Nigeria, the use of mobile phones by teachers for teaching is not encouraging. They have the modern mobile phones in their hands, they use them to make and receive calls, send text messages, listen to music and some do browse the internet but they don't use it for teaching and learning. Similarly, secondary school students are busy using mobile phones to listen to music, watch movies, and send text messages to friends and relatives. However, some use it negatively, for instance, for browsing pornography, cheating in examinations and class test committing different types of crimes within and outside the school environment, instead of using the devices for learning.

Learning with mobile phones which is one of the student-centered approaches has not been used for teaching and learning in Nigerian classrooms despite its numerous advantages over the traditional lesson method of instruction. These

include portability, interactivity, mobility, low cost to mention but a few (Nikou & Economides, 2013). Teacher's perception will be examined based on the influence of gender and their mean response towards readiness and acceptance in the use of mobile technology in the classroom.

Gender has been identified as one of the factors influencing teachers' perception. It is also one of the variables for conducting this study. In order to ensure good communication between teachers and students, it is vital to have good understanding of how different groups may approach the use of ICT / mobile phones. Some studies have shown very significant differences in the use of ICT facilities with regard to gender. Ogunlade (2009) submitted that females are under-represented in school computer course, computer clubs and in computer science based careers and do not spend as much time at home using computers as males do. Hou, Huang and Lin (2006) also stated that females treat computer as devices. Thus, the study indicates that males use technology for fun; while female tend to use it as a means of communication. Males generally achieve better in computer and hold more positives attitude towards computer than their female counterparts. Chukwuemeka (2010) reported that female teachers have inadequate proficiency skills in using internet for teaching and learning process. As for a mobile phone, the gender difference in conventional telephone use seems to have extended to the technology.

Statement of the Problem

The objective of the National Policy on Education (FRN, 2004) is to help students to become intellectual and effective teachers with good mastery of content and method for effective teaching of Biology in senior secondary schools. However, the Chief examiners' report of 2000 to 2007 revealed that only 20% to 30% of the students pass Biology annually. This underachievement in Biology has been attributed to student related factors, teacher

related factors and physical factors of the learning environment. Of these groups of factors, the teacher plays a very important role in creating conducive learning environment that can enhance students' cognitive and affective outcomes. This situation calls for intervention in methods employed by teachers. This has necessitated the need to employ strategies for improved teaching in our schools. The strategy considered in this study for improvement is integration of mobile phones. IMP may be more effective in achieving better learning outcomes and sustain students' achievement in Biology. It is on the above premise that the researchers deemed it necessary to carry out this study to determine the teachers perception on integrating mobile phone as instructional strategy for teaching Biology in secondary schools in Minna, Niger State.

Research Question

The following research questions were raised to guide the study:

1. What is perception of Biology teachers on the significance of application of technology into teaching in secondary schools?
2. What is the Biology teachers' perception of integrating mobile phones as instructional strategy for teaching Biology in secondary schools?
3. Is there any significant difference between male and female Biology teachers' perception of application of technology in to teaching of Biology in secondary schools?
4. Is there any significant difference between male and female Biology teachers' perception of integrating mobile phone as instructional strategy for teaching Biology in secondary schools?

Research Hypotheses

The following null hypotheses were formulated to guide the study:

H₀₁: There is no significant difference between

male and female Biology teachers' perception of application of technology in to teaching of Biology in secondary schools.

Ho₂: There is no significant difference between male and female Biology teachers' perception of integrating mobile phones as instructional strategy for teaching Biology in secondary schools.

Methodology

The research design adopted for this study was a survey research in which questionnaire was an instrument developed by the researchers to obtain factual information from Biology teachers. This work investigated Biology teachers' Perception of integrating mobile phone as instructional strategy for teaching and learning of Biology in senior secondary schools in Minna Metropolis. The population used for the study comprised 80 Biology teachers in 25 senior secondary schools in Minna Metropolis. Due to inadequate population, 50 Biology teachers were randomly selected through simple random technique from the population. Eventually, 25 Male and 25 Female Biology teachers were randomly selected for the study. The instrument used for data collection was carefully constructed questionnaire which was developed by the researcher which was

validated by two experts from Science Education Department, F.U.T. Minna. The questionnaire was titled Biology Teachers Perception of Mobile Phone Questionnaire (BTPMPQ) was prepared for the Biology teachers to air their views concerning the integration of mobile phone as instructional strategies for teaching and learning biology in senior secondary schools in Minna Metropolis. The questionnaire designed for the teachers was divided into two sections, section A deals with demography (personal information) while section B deals with sentenced questions (items 1-28). The questionnaire adopted a Likert-scale method in which the respondents responded to a question by ticking any of the five options (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree). The data were analyzed using mean and standard deviation. 3.00 was used as the criterion for interpretation of the perception. 3.00 and above means positive perception while 2.99 and below means negative perception.

Results and Data Analysis

Research Question one

1. What is perception of Biology teachers on the significance of application of technology in to teaching in secondary schools?

Table 1: Biology Teachers' Perception of Application of Technology in Teaching

S/N	ITEMS	MEAN	SD	REMARK
1.	I'm willing to apply new method of teaching in my school	2.70	1.71	Disagree
2.	Technology helps to facilitate teaching and learning in schools	1.63	0.60	Disagree
3.	Educational technology saves time, energy and money when used	1.92	0.91	Disagree
4.	Educational technology eliminates boredom among students in the class	1.81	0.93	Disagree
5.	Educational technology stimulates students' interest in the classroom	2.33	0.70	Disagree
6.	Educational technology influences holistic learning of concepts	1.52	1.12	Disagree
7.	Incorporating educational technology influences curriculum implementation	2.02	0.80	Disagree
8.	Incorporating educational technology improves teachers knowledge and skills in teaching	1.84	2.00	Disagree
9.	Incorporating educational technology improves teachers performance	1.98	0.94	Disagree
10.	Going for a training on the use use of educational technology will definitely increase my productiyity	2.40	0.93	Disagree
11.	Im ever ready to share knowledge of using educational technology with my colleagues	2.36	0.91	Disagree
12.	I'm confident that my performance will improve after learning how to use educational technology in teaching	2.01	0.80	Disagree
	AVERAGE MEAN	2.04	1.78	Disagree

Table 1 reports Biology teachers' responses on the application and significance of technology in teaching. From the results, the mean response was 2.04 with standard deviation of 0.78. This is below 3.00 criterion, indicating that the teachers are having negative perception on the use of technology in teaching.

Research Question Two

What is the Biology Teachers perception of integrating mobile phones as instructional strategy for teaching Biology in secondary schools?

Table 2: Biology Teachers' Perception of Integrating Mobile Phone in Teaching

S/N	ITEM	MEAN	SD	REMARK
13	I use my mobile phone for my daily communication.	3.25	1.02	Agreed
14	Mobile phones can be used in teaching activities in schools.	2.40	0.94	Disagree
15	Mobile phones influence teacher-students interaction in the class.	2.33	0.80	Disagree
16	Mobile phones stimulate learning.	2.11	1.50	Disagree
17	Mobile phones improve students' skills in research.	1.98	0.75	Disagree
18	Mobile phones simplify teaching when used in the class.	2.23	0.88	Disagree
19	Mobile phones enable teachers to achieve teaching and learning objectives.	1.80	1.02	Disagree
20	Mobile phones improve students' performance when used in teaching and learning.	2.35	0.60	Disagree
	Average mean	2.31	0.94	Disagree

Table 2 reports perception of Biology teachers on integrating mobile phones in teaching activities in schools. From their responses, it is clear that the teachers perceived usefulness of mobile phones as they possess it, but negatively perceived its use in teaching and learning activities in schools with mean average of 2.31,

and standard deviation 0.94. This is below the set criterion of 3.00 mean score.

H_0 : There is no significant difference between male and female Biology teachers' perception of application of technology into teaching of Biology in secondary schools.

Table 3: t-test Analysis of the Mean Difference between Male and Female Biology Teachers on the Application of Technology in to Teaching in Secondary Schools

Variable	N	df	Mean	SD	t-cal	P-value
Male	25	48	1.01	0.79	1.106	0.117
Female	25		1.03	0.99		

*=Significant at P= 0.05

Table 3 above displays the t-test results of the mean difference in the perception of Biology teachers on application of technology in to teaching. The result shows that $t(48)=1.106$, $P>0.05$. Hence the null hypothesis was retained. Which means no significant difference between the perception of male and female teachers on the significance of application of technology in

teaching Biology in secondary schools in Minna metropolis.

H₀: There is no significant difference between male and female Biology teachers' perception of integrating mobile phone as instructional strategy for teaching Biology in secondary school in Minna Metropolis.

Table 4: t-Test Analysis Of The Mean Difference Between Male And Female Biology Teachers On Integrating Mobile In Teaching.

Variable	N	df	Mean	SD	t-value	P-value
Male	25	48	1.20	0.58	1.166	0.149
Female	25		1.11	0.36		

*=Significant at $P=0.05$

From Table 4 above, the result present the t-test result between male and female Biology teachers' perception of integrating mobile phones in teaching Biology. The result indicated that $t(48) = 1.166$, $p > 0.05$. Therefore, the null hypothesis was accepted, as there was no significant difference between male and female Biology teachers; perception of integrating mobile phone in to teaching of Biology in secondary schools in Minna metropolis.

Discussion of Findings

The purpose of this study was to investigate Biology teachers' perception of integrating mobile phone as instructional strategies in teaching Biology in senior secondary schools in Minna Metropolis.

The first research question stimulated responses on the significance of application of technology in to teaching of Biology as a science in secondary schools in Minna. Table 1 provided the results which indicated that Biology teachers have negative perception on the application, with mean response of 2.04. This reveals lack of awareness of the efficacy of ICT in education amongst teachers as partly hinted by MacCallum, Jeffery and Kinshuk (2014). It also indicates deviance from the current trend in education as reported by MacCallum (2014).

stated that modern ICT have brought revolution in the field of education, industry, service organization, and telecommunication and various other fields affecting our day-to-day activities. It also shows decline from the assertion of Adegbija and falode (2014) who pointed out that the use of (ICT) has tremendous growth in the recent past because of its significant impact on all areas of human endeavors. The field of education is not left out as technology has positively affected teaching, learning and research in many ways,

The second research question was on the use of mobile phone for teaching and learning. The result indicated negative perception (mean=2.31, SD=0.94) on the use of mobile phones in teaching Biology in secondary schools. The finding was in agreement with MacCallum, Jeffery and Kinshuk (2014) they stated that a large number of lecturers still resist the integration of technology (Mobile phone) into the classroom. Perhaps, the thinking of teachers could have been directed towards the cost and social vices attributed to mobile phones usage nowadays.

The first hypothesis sought to find out the difference between male and female Biology

teaching. The result in table 3 indicated no significant difference in the perception of male and female teachers on the application of technology in to teaching and learning in schools $t(48)=1.106, P> 0.05$. The second hypothesis sought to find out if there was any significant difference between male and female Biology teachers' perception of integrating mobile phone as instructional strategy for teaching Biology. Table 4 revealed that there is no gender difference, $t(48) = 1.166, p> 0.05$, in Biology teachers' perception of integrating mobile phone as instructional strategies in teaching Biology in senior secondary schools in Minna Metropolis. This result is in agreement with the finding of Nixon (2013) who reported that mobile learning perceptions and mobile learning levels of the prospective teachers showed no significant gender difference. It is how ever in contrary with the findings of McKinney, Dyck and Luber (2009), Wang, Wu and Wang (2009), Al Fahad (2009), Çavuş and Biçen (2009), state that male teachers have more positive mobile learning perception than female teachers.

Conclusion

From the result of the research it was found that Biology teachers perceived the use of mobile phone for teaching and learning as encouraging but are not ready to implement it in their teaching. It was also found that gender is not a factor in the perception of biology teachers in the integration of mobile phone as instructional strategies in the teaching of biology in senior secondary schools in Minna Metropolis.

Recommendations

The findings of this study have great implications for teaching and learning of Biology, and the following recommendations were put forward by the researcher:

- (i) Teachers should be enlightened on the significance of the use of mobile phones teaching and learning purposes in schools

- (ii) Government should provide teachers with affordable phones on loan, if not free for effective utilization in teaching activities
- (iii) The schools should provide and encourage the use of necessary instructional materials and equipment's needed to carry out biology instructions in the school e.g. Audio visuals
- (iv) The school should provide more opportunities for the biology teachers to attend seminars, workshops in-service training and Biology conference to broaden and update their knowledge on application of ICT and educational technologies in to teaching in secondary schools

References

- Adegbija, M. V. & Falode C. O (2014). Effects of animation-base camstudio physics instruction on secondary school student's performance in Minna. *European Scientific Journal*, 10(13), 25-31.
- Al-Fahad, F.N. (2009). Students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud University, Saudi Arabia. *The Turkish Online Journal of Educational Technology (TOJET)*, 8(2), 111-119.
- Anasi, S.N.I. (2005) Multi-dimensional Interventions of Information and Communication Technologies for women Empowerment in Nigeria. *Lagos Journal of Library and Information Science*. 3(1), 56-66
- Callum, K.M., and Kinshuk. (2006), Mobile Technology in Facilitating Learning Goals. In *mLearning*, 2006. Banff, Canada.
- Çavus, N., & Bicen, H. (2009). The most preferred free e-mail service used by students. Paper presented at the 9th International Educational Technology Conference, May 6-8, Ankara, Turkey.
- Chukwuemeka, O.A.(2010) Evaluation of the united nations children's education fund

child friendly school initiative programme in Enugu state. Unpublished master project from University of Nigeria NSUKKA.

Federal Republic of Nigeria (2004). National Policy on Education Revised Edition. Lagos: NERDC Press.

Gambari, A. I., (2015). Effectiveness of computer-assisted instructional package in cooperative settings on senior school students' performance in physics, in Minna, Nigeria (PhD Thesis). Ilorin: University of Ilorin.

GSMWORLD (2004). Mobile applications. Available: <http://www.showlater?Mggld>

Katz, J. E., (2011). Mobile phones in educational settings. Retrieved from <http://cmcs.rutgers.edu/publications/articles/mobile%20phones%20in%20educational%20setting.pdf>

Nikou, S.A., & Economides, A.A. (2013) Student achievement in paper, computer/web and mobile based assessment. Retrieved 10th January, 2016 from www.universityofmacedoniaegnatia.edu.com

Kolb, L. (2008). Adventures with cell phones. *Educational Leadership*, 68(5), 39-43.

Mangal, S. K. & Mangal, U. (2013). *Essentials*

of educational technology. Asoke Ghosh
PHI Learning Private Limited

McKinney, D., Dyck, L. J., & Lubet, S. E. (2009). Tunes university and classroom: Can pod casts replace professors?. *Computers and Education* 52, 617-623.

Nixon, T.S. (2013). Mobile device and the teacher perceived barriers impacting effective integration in the K-5 classroom. Unpublished dissertation from University of Phoenix.

Pyramid Research Report (2010). The Impact of mobile services in Nigeria. [Online] Available: www.pyramidresearch.com (August 23, 2013).

Tan, Q., Zhang, X., Kinshuk & Mc-Greal, R. (2011). The 5R Adaptation Framework for location based mobile learning http://mlearn.bnu.edu.cn/source/ten_outstanding_papers (August 26, 2013).

Wang, Y. S., Wu, C. M., & Wang, Y. H. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40, 92-118.

Wenger, E., & Snyder, W. (2009). Communities of practice: The organizational frontier. *Harvard Business Review*, 78(1), 139-145.