Knowledge and use of Information and Communications Technologies (ICTS) in Teaching and Learning among Teachers and Students of Schools of Nursing and Midwifery in Benue State, Nigeria

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Abstract

The research is a cross-sectional descriptive survey conducted at Schools of Nursing and Midwifery in Benue State on " Knowledge and Use of ICT in Teaching and Learning Among Teachers and Students". The specific objectives were; to assess the availability of ICT facilities in the schools, to assess the knowledge of the teachers and students on the use of ICT facilities in teaching and learning, to ascertain the extent to which the teachers and students make use of the available ICT facilities, to assess the perceived usefulness of the ICT to teachers and students, and to determine factors hindering the availability and use of ICT facilities in the schools for teachers and students use. Stratified sampling technique was used to group the students into homogeneous subsets of classes/levels of study after which convenience sampling technique was used to select samples used for the study disproportionately. Data were collected from the respondents through self-structured and validated questionnaire. Data obtained were analyzed and presented using frequency distribution table while chi-square was used to analyse the stated hypotheses. Based on the findings; there is availability of ICT in the schools, however, not all items needed for smooth running of ICT were available and the existing ones are insufficient, both the teachers and the students have some degree of knowledge about ICT but such knowledge is seriously limited as most of the teachers and students were not computer literate, most teachers and students were not making use of the available ICTs in the school and those who made use of it were inconsistent in their use of the ICT facilities even though most of them believed that ICT use in teaching and learning is very essential for better and quality education. Factors hindering the availability and use of ICT facilities in the schools were multifactorial as shown in the study. The researcher made the following recommendations; management and leadership of the schools should put more effort to ensure provision of adequate ICT facilities for teachers and students use as this will enhance the quality of the teaching and learning in the school, and that the government should make use of ICT facilities in teaching and learning mandatory in all schools even as they assist schools who cannot afford it to secure adequate ICT facilities for teachers and students use.

Keywords: Knowledge, Use, ICT, Teaching, Learning, Teachers, and Students.

Introduction

Information and communications technology or technologies (ICT) is an umbrella term that includes any communication device or application, encompassing; radio, television, cellular phones, computer and network hardware and software, projectors, satellite systems and sour, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries (Margaret, 2016).

ICT have become commonplace entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and governance. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees

of personal contact with learners. The use of ICT in education lends itself to more student centered learning settings (Noor-Ul-Amin, 2014). Information and communications technologies education is basically our society's efforts to teach its current and emerging citizens valuable knowledge and skills around computing and communications devices, software that operates them, applications that run on them and systems that are built with them. According to Education Scotland, (2016), we are living in a constantly evolving digital world. ICT has an impact on nearly every aspect of our lives – from working to socializing, learning to playing. The digital age has transformed the way young people communicate, network, seek help, access information and learn. As technology becomes more and more embedded in our culture, we must provide our learners with relevant and contemporary experience that allow them to successfully engage with technology and prepare them for life even after school. It is widely recognized that learners are motivated and purposefully engaged in the learning process when concepts and skills are underpinned with technology and sound pedagogy.

Statement of the problem

Teachers and students live in a rapidly changing technological world. Information and communications technology including hardware and personal digital devices, software, and systems that manage, store, process, create, produce and communicate information, has become an important part of everyday life. The integration of ICT capabilities in teaching, learning and assessment can lead to enhanced outcomes for both teachers and students and support the interactive process of teaching, learning and assessment in schools. This will also develop the knowledge, skill, understanding, attitudes and behaviours to assist students to live and work successfully in this 21st century. Integration of ICT can support a range of teaching, learning and assessment approaches that;

- Enhance learning opportunities through access to a range of resources, stimulus materials and learning tools.
- Provide increased opportunities for student engagement and motivation.
- Equip students with the necessary knowledge and skills to use ICT to support 21st century learning.
- Support the development of effective student research and evaluation skills.
- Promote critical and creative thinking skills
- Increase teacher and student efficiency
- Develop awareness of the public nature of online activity and related responsibilities.
- Increase opportunities to work collaboratively, locally nationally and globally.

Students and teachers have the opportunity to become competent, discriminating and creative users of ICT as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information. Students and teachers will learn about the ethics of nursing and teaching through technology. Irrespective of all the above perceived gains of using ICT in teaching and learning, many studies have demonstrated very low usage of ICT in institutions of learning where such is being used at all especially in Some developing countries. In schools of nursing and midwifery in Benue State, it was observed that many teachers and students were not making use of ICT in teaching and learning thus hindering their ability to have faster access to recent clinical researches and methods of teaching which in turn is capable of enhancing evidence based practice which is the current clinical acceptable practice. This has prompted the researcher to go into investigation into knowledge and use of ICT in teaching and learning among teacher and students of Schools of Nursing and Midwifery in Benue State.

Objectives of the study

The general Objective of the study was to assess the knowledge and use of ICT in teaching and learning among teachers and students of schools of nursing and midwifery in Benue State. The specific objectives are:

1. To assess the availability of ICT facilities in the schools of nursing and midwifery.
2. To assess the knowledge of the teachers and students on the use of ICT facilities in teaching and learning
3. To ascertain the extent to which the teachers and students make use of the available ICT facilities.
4. To assess the perceived usefulness of the ICT to teachers and students.
5. To determine factors hindering the availability and use of ICT facilities in the schools for teachers and students use.

Hypothesis for the study

The null hypothesis for the study is stated as follows:
1. There is no statistical significant difference between the knowledge of teachers in the use of ICT in teaching and their years of experience.
2. There is no statistical relationship between knowledge of students on the use of ICT facilities in learning and years spent in school.

Literature review

Information and communication technology have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, the rapper to be a misconception that ICTs generally refers to computers and computing related activities (Noor-Ul-Amin, 2014). Pelgrum and Law (2003) stated that "near the end of the 1980s, the term computers was replaced by "IT" (Information technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information. This was followed by the introduction of the term 'ICT' (information and communication technology) around 1992, when e-mail started to become available to the general public". According to a United Nations report (1999) ICTs cover internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services, and other related information and communication activities. According to UNESCO (2002), information and communication technology (ICT) may be regarded as the combination of informatics technology with other related technology, specifically communication technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs etc have been used in education for different purposes (Sharma, 2003, Sanyal, 2001; Bhattacharya and Sharma, 2007; Nguyen, Williams and Nguyen, 2012).

The 1990s was the decade of computer communications and information access, particularly with the popularity and accessibility of internet-based services such as electronic mail and the World Wide Web (www). At the same time the CD-ROM became the standard for distributing packaged software (replacing the floppy disk). As a result educators became more focused on the use of the technology to improve it is widely recognized that learners are motivated and purposefully engaged in the learning process when concepts and skills are underpriced with technology and sound pedagogy (Education Scotland, 2016).

Availability of ICT facilities in the schools

Hepp, Hinostroza, Laval and Rehbein (2004) claim in their paper "Technology in schools: Education, ICT and the knowledge society" that ICTs have been utilized in education ever since their inception, but they have not always been massively present. According to Bhattacharya and Sharma (2007) there exist infrastructure, socio-economic, linguistic and physical barriers in India for people who wish to access education. This includes infrastructure, teacher and the process quality. According to Adesote and Fatoki (2013) the

readiness of ICT in the sub-Saharan African is still very low with most countries experiencing strong lags in connectivity because of the insufficient development of ICT infrastructures. While the developed world continues to witness development of ICT, Sub-Sharan Africa is still lacking behind due to poor quality services (Global ICT chart Report: Guardian, Friday April, 2012 p.6 cited by Adesote and Fatoki, 2013). Study by Hamilton-Ekeke and Mbachu (2015) on "the place of information, communication and technology in teaching and learning in Nigeria tertiary institutions" revealed that basic ICT facilities like computers are unavailable, students are unable to afford personal laptop. This has grossly affected e-learning and e-communication channels like email, e-board, internet and organized networking system between staff and students.

Knowledge of teachers and students on the use of ICT in teaching and learning

Study by Tella, Tella, Toyobo, Adika and Adeyinka (2015) on "Assessment of secondary School Teachers uses of ICT's: implication for further development of ICT's use in Nigerian secondary schools" show that teachers generally have access to ICTs in their various except e-mail and internet because their schools are not connected. Technical support are lacking in the schools and teachers lack of expertise in using ICT was indicated as being the prominent factors hindering teachers readiness and confidence of using ICTs during lesson. According to Shyamal (2015) preparation of teachers to face the challenges of an ICT enriched teaching and learning environment is crucial. First, teachers need to be equipped with the fundamentals of ICT tools and sufficient understanding on the integration of these tools in teaching and learning and secondly efforts must be oriented towards changing mindset and developing positive attitudes towards ICT application in teaching and learning. Teachers need knowledge about technology, pedagogy and content in order to successfully support students' learning with ICT. With technological pedagogical content knowledge teachers are able to utilize a range if ICT to support student's learning (Teemu, Kati, Sini, Susanna, and Henriikka, 2012; Sangra and Gonzalez-Sanmamed, 2010).

Teachers need to learn new skills to teach students how to search for and use information from the internet safety issues the study show the need to organize workshops for both staff and students so that they acquire knowledge to effectively use the internet resources that are less used (Nwezeh, 2010; Osakwe, 2010).

Usefulness of ICT to teachers and students

According to Yusuf (2005), the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research. A great deal of research has proven the benefits to the quality of education (Al-Ansari, 2006). ICTs have the potential to innovate, accelerate Erich, 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 (Davis and Tearle, 1999; Lemke and Coughlin, 1998; Cited by Noor Ul-Amin, 2014).

ICT increases the flexibility of delivery of education so that learners can access knowledge every time and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning in concept with geographical flexibility, technology facilitated educational programs also remove many of the temporal constraints that face learners with special needs. Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. One of the most vital contributions of ICT in the field of education is easy access to learning. With the help of ICT, students can now browse through e-books, sample examinations papers; previous year papers etc, and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers all over the world. Wider availability of best practices and best course material in education, which can be shared by means of ICT, can

foster better teaching. ICT also allows the academic institutions to reach disadvantaged groups and new international educational markets.

ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2002). People have to access knowledge via ICT to keep pace with the latest developments (Plamp, Pelgrum and Law, 2007). ICTs also allow for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time (Bhattacharya and Shama, 2007; Cholin 2005). Such facilities allow the networking of academics and researchers and hence sharing of scholarly material. This avoids duplication of work (Cholin, 2005) According to Noor-ul-Amin (2014) ICTs especially computers and internet technologies enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. ICT has an impact not only on what students should learn, but it also plays a major role on how the students should learn. According to Bransford et al (2000) Cited by Khalid (2000) several studies have reviewed the literature on ICT and learning and have concluded that it has great potential to enhance student achievement and teacher learning. According to Grabe and Grabe (2007), technologies can play a role in student skills, motivation, and knowledge, they argue that ICT can be used to present information to students and help them complete learning tasks. ICT can be integrated in the learning process so that learning takes place through the learner's interaction with the facilities (Adesote and Fatoki, 2013). While delivering the class lectures, any innovative teacher needs to draw diagrams, show pictures, animate some objects to explain critical concepts, even play some video clipping of real time operation. All these multimedia applications can assure very productive, interesting, motivating, interactive and quality delivery of classroom instruction. Presentation software like power point can be a good choice for teachers for performing such tasks (Shyamal, 2015). According to EdTech Review (2014), ICT is very useful in that it helps the students to do assignments given to them by their teachers. It also helps to reduce the social disparities between students since they work in teams in order to achieve a given task.

Factors hindering the availability and use of ICT facilities in school for teachers and students use

According to Balanskat, Blamire and Kefala (2006), although educators appear to acknowledge the value of ICT in schools, difficulties continue to be encountered during the processes of adopting these technologies. According to Becta (2003) Cited by Khalid (2009) five factors influence the likelihood that good ICT learning opportunities will develop in schools: ICT resourcing, LCT leadership, ICT teaching school leadership, and general teaching.

Classification of the hindering factors: Different categories have been used by researchers and educators to classify hindering factors to the availability and use of ICT for teachers and student use. several studies have divided the hindering factors into two categories: extrinsic and intrinsic factors. however they differ in what they meant by extrinsic and intrinsic factors. Ertmer (1999) cited by Khalid (2009) referred to Extrinsic factors as first-order and cited access, time, support, resources and training and intrinsic factors as second-order and cited attitudes, beliefs, practices and resistance; whereas, Hendren (2000 as cited in Khalid, 2009) saw extrinsic barriers as pertaining to organizations rather than individuals and intrinsic barriers as pertaining to teachers, administrators, and individuals.

Another classification is teacher level barriers versus school-level barriers. Becta (2004) grouped the barriers according to whether they relate to the individual (teacher-level barriers), such as lack of time, lack of confidence, and resistance to change, or to the institution (school-level barrier) such as lack of effective training in solving technical problems and lack of access to resources. Another perspective presents the obstacles as pertaining to two kinds of

conditions: material and non-material. The material conditions may be the insufficient number of computers or copies of software. The non-material obstacles include teachers insufficient ICT Knowledge and skills, the difficulty of integrating ICT in instruction, and insufficient teacher time (Khalid, 2009).

- **Lack of teacher confidence:** Several researchers indicate that one barrier that prevents teachers from using ICT in their teaching is lack of confidence. According to Becta (2004), much of the research proposes that this is a major barrier to the uptake of ICT by teachers in the classroom. Balanskat et al (2006) found that limitations in teacher's ICT knowledge makes them feel anxious about using ICT in the classroom and thus not confident to use it in their teaching study by Becta (2004) showed that many teachers who do not consider themselves to be well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do.

- **Lack of teacher competence:** In Australian research Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were not enthusiastic about the changes and integration of supplementary learning associated with bringing computer into their teaching practices. in Syria, teachers, lack of technological competence has been cited as the main barrier (Albirini, 2006). In Saudi Arabia, a lack of ICT skills as a serious obstacle to the integration of technologies into science education (Al-Alwani, 2005: Almohaissin, out in 27european countries show that teachers who do not use computer in classrooms claim that "lack of skills" are a constraining factor preventing teachers from using ICT for teaching. Another world wide survey conducted by Pelgrum (2001), of nationally representation samples of schools from 26 countries found that teacher" lack of knowledge and skills is a serious obstacle to using ICT in primary and secondary schools.

- **Resistance to change and negative attitudes:** Researches into barriers to the integration of ICT into education found that teacher's attitudes and an inherent resistance to change were a significant factor (Gomes, 2005; Schoepp, 2005). Becta (2004) also identified resistance to change as an important carrier to teacher's use of new technologies in education. Schoepp's study (2005) found that, although teachers felt that there was more than enough technology available, they did not believe that they were being supported, guided, or rewarded in the integration of technology into their teaching. According Becta (2004) one key area of teachers' attitudes towards the use of technologies is their understanding of low these technologies will benefit their teaching and their student's learning.

- **Lack of time:** several studies have shown that many teachers have competence and confidence in using computers in the classrooms, but they still make little use of technologies because they do not have enough time (Schoepp, 2005); Sicilia, 2005). According to Sicilia (2005) most teachers reported lack of time to plan technology lessons, explore the different internet sites, or lack at various aspects of educational software as a common challenge. According to Al-Alwani (2005) lack of time is a barrier affecting the application of ICT in Saudi Arabia because of busy schedules. In another study Gomes (2005) show that one of the main reasons that teachers do not use ICT in the classroom is lack of the time required to accomplish the plans.

- **Lack of effective training:** Studies have shown that lack of effective training is one of the major factors militating against the use of ICT by the teachers (Schoepp,, 2005; Sicilia, 2005; Toprakci, 2006; Ozden, 2007). Researches in Turkey have shown that the main problem with the implementation of new ICT by the teachers was the insufficient amount of in-service training programs for the teachers (Toprakci, 2006; Ozden, 2007). Balanskat et al (2006) found that inappropriate teacher training is not helping teachers to use ICT in their classrooms and in preparing lessons.

- **Lack of accessibility:** Studies have identified lack of access to resources, including Horne access as another complex barrier that discourages teachers from integrating new technologies into education (Chalid, 2009). In a study by Sicilia (2005), teachers complained about how difficult it was to always have access to computers. Korte and Husing (2007) found that in European Schools, there are some infrastructure barriers such as broadband access not yet being available. Research on Syrian schools indicated that insufficient computer resources were one of the greatest impediments to technology integration the classroom (Albirini, 2006). A number of factors are said to have militated against the use of ICT in education in Nigeria these have included such factors as lack of funding to support the purchase of the technology, lack of training of teachers, lack of motivation on the part of teachers to adopt ICTs as teaching tools in the classroom instruction and soon (Adesote and Fatoki, 2013).

According to Fisseha (2011), limitation of ICT use in Education is technology related. The high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attach of software and the computer, interruptions of internet connections, and poor supply electric power are among the technology related limitations of ICT use in education. the integration of ICTs in education systems may face various challenges with respect to policy, planning, infrastructure, learning content and language, capacity building and financing ICT enhanced education requires clearly stated objectives, mobilization of resources and political commitment of the concerned bodies. Study by Mathipa and Mukhari (2014) show that factors influencing the use of ICT in teaching and learning in South African urban schools includes: insufficient number of computers and lack of application programs, teacher generation gap, inadequate teacher training, lack of ICT skill and lack of confidence, teachers beliefs, poor school leadership and lack of public support.

Methodology

Research design

Cross-sectional descriptive survey design was used for the study to assess the knowledge and use of ICT in teaching and learning among teachers and students in schools of nursing and midwifery in Benue State.

Setting for the study

The study was conducted at the schools of nursing and midwifery in Benue State. Benue State has two schools of nursing and two school of Midwifery. One of the schools of nursing and one of the schools of midwifery is owned and is being managed by Nongo U Kristu U I Ser U Sha Tar (NKST), a local church and an offspring of the Sudan United Mission Christian Reformed church. The schools are located along Gboko Mkar-Katsina-Ala road. The schools has about 600 students in both arms (nursing and Midwifery). The other schools of nursing and midwifery located within the heart and metropolitan city of Makurdi, the capital of Benue State belong to the state government. The schools have about 450 students.

Study population

The target population consists of all the students at all levels of the schools and teachers in both schools of nursing and midwifery in Benue State, Nigeria. The total number of students in both schools is about 1050 students while the number of teachers in both schools is about 100 teachers handling different courses in the schools.

Sample and sampling techniques

A total of 50 teachers and 340 students were conveniently and disproportionately selected from the target population upon their willingness to participate in the study following detailed explanation of the rationale of the study to them after using stratifies sampling technique to group the students into homogenous subsets of classes/ levels of study. The researcher ensured that students from all the schools and at all levels participated in the study.

Method of data collection

Data for the study was collected through administered self-structured and validated questionnaire which was made up of different sections that were constructed with the aim of eliciting needed information capable of answering the research questions. The questionnaire was made up of both closed and open ended questions. A trained research assistant also assisted in the administration and collection of the questionnaire.

Method of data analysis

Data was analyzed after collection by the researcher using deceptive frequency distribution table which shows responses of the respondents and analyzed in percentage. Chi-Square was used in the analysis of the stated hypotheses.

Ethical consideration

Information obtained from subjects was for the research purpose only and was treated as strictly confidential; hence, study participants were not required to provide their names on the questionnaire. Participation in the study was voluntary after explaining the rationale and procedure of the study to the participants.

Results

Table 1. Socio-demographic characteristics of respondents (students)

S/NO	Variables	Frequency N 340	Percentage (%)
1.	**Age (years)**		
	18-23	46	13.5
	24-28	248	72.9
	29-33	28	8.3
	39 and above	18	5.3
2.	**Educational qualification**		
	SSCE	312	91.8
	OND	12	3.5
	HND	10	2.9
	BSC	6	1.8
3.	**Level of studies**		
	100 level	180	52.9
	200 level	84	24.7
	300 level	76	22.4

Table one above shows that 72.9% of the student respondents were between the ages of 24 and 28, 13.5% were between the ages of 18 and 23, 8.3% were between the ages of 29 and 33, while 5.3% were at the age of 39 and above. On their educational qualification, the table show that 91.8% had SSCE, 3.5% had OND, 2.9% of them had HND, while 1.8% had BSc. On the levels of study of the students respondents,59.9% were in 100 level, 24.7% were in 200 level and 22.4% were in 300 level.

Table 2. Socio-demographic characteristics of respondents (teachers)

S/NO	Variables	Frequency N=50	Percentage (%)
1.	**Age (years)**		
	20-25	4	8
	26-30	9	18
	31-35	13	26
	36-40	24	48
	41 and above	4	8
2.	**Educational qualification**		

	RN only	6	12
	RM only	6	12
	RN and RM	12	24
	Bsc/BNsc	20	40
	Masters	6	12
3.	**Teaching experience (years)**		
	1-3	4	8
	4-6	6	12
	7-9	7	14
	10-13	11	22
	14 and above	22	44

From table 2 above, 48% of the respondent teachers were between the ages of 41 and above, 26% between the ages of 36 and 40, 18% were between 31 and 35 years while 8% were between 26 and 30 years. The table also shows that 40% of the respondent teachers had BSc/BNSc, 24% had RN and RM, 12% had RM certificate only, and another 12% had masters degree while another 12% had RN certificate only. About the teaching experience, the table shows that 44% of the respondent teachers had 14 years and above teaching experience, 22% had experience of 10 to 13 years, 14% had experience of 7to 9 years, 12% had experience of 4 to 6 years while 8% had experience of 1 to 3 years.

Table 3. Availability of ICT facilities in the schools

S/NO	Variables	Frequency N = 390	Percentage (%)
1.	**Do your school have ICT facilities?**		
	Yes	390	100
	No	0	0
2.	**If yes, what are the available facilities?**		
	ICT centre with computers connected to the internet	80	20.5
	ICT centre with computers not connected to the internet	180	46.2
	Data projectors	140	35.9
	Digital cameras	0	0
	Scanner	30	7.7
	Video equipment	0	0
	Computer/laptops in the library	80	20.5

Table 3 above shows that 100% of the respondent said their schools have ICT facilities. Of this 100% who said the school have ICT facilities n=390, 46.2% said there school have ICT centre with computers not connected to the internet, 35.9% said the school have data projectors, 20.5% of the respondents said the school have ICT centre with computers connected to the internet and another 20.5% said the school have computers/laptops in the library while 7.7% said the school have scanner.

Table 4. Knowledge of students on the use of ICT facilities in learning

S/NO	Variables	Frequency N = 340	Percentage (%)
1.	**Have you heard of ICT before?**		
	Yes	270	79.4
	No	70	20.6
2.	**If yes through what source?**		
	At School	266	98.5
	Through Radio	0	0
	Through newspaper	0	0

	Through friends/colleagues	4	1.5
3.	**Are you computer literate?**		
	Yes	60	17.6
	No	280	82.4
4.	**If yes, for how long have you being using computer?**		
	1-2 years	18	30
	3-4 years	34	56.7
	5-6 years	6	10
	7 years and above	2	3.3
5.	**What do you understand by ICT use in teaching & learning?**		
	Using computers in browsing the internet	260	76.5
	Using data projectors in teaching	195	57.4
	Using cell phones in browsing the internet	220	64.7
	Making video conferencing	180	52.9
	Using computers in teaching	260	79.4

Table 4 above shows that 79.4% of the students respondent n=340 said they have heard of ICT before while 20.6% said they have not heard of ICT before. Of those who said they have heard of ICT before, n=270, 98.5% said they heard of it at school, while 1.5% said it was through friends/colleagues. The table also shows that 82.4% of the respondents said they were not computer literate while 17.6% said they were computer literate. Of those who said they were computer literate n=60, 56.7% said they have used computer for 3to 4 years, 30% said they have used computer for 1 to 2 years, 10% said they have used it for 5 to 6 years while 3.3% said they have used computers for 7 years and above. Assessing what they understand by ICT use in teaching and learning, n=340, 79.4% said it is using computers in teaching, 76.5% said it is using computers in browsing the internet, 64.7% said it is using cell phones in browsing the internet, 57.4% said it is using data projectors in teaching while 52.9% said it is making video conferencing.

Table 5. Knowledge of teachers on the use of ICT facilities in teaching and learning

S/NO	Variables	Frequency N = 50	Percentage (%)
1.	**Have you heard of ICT before**		
	Yes	50	100
	No	0	0
2.	**If yes through what source?**		
	At school	18	36
	Through radio	0	0
	Through workshop	7	14
	Through personal reading	25	50
	Through friends and colleagues	0	0
	Through newspaper	0	0
3.	**Are you computer literate?**		
	Yes	22	44
	No	28	56
4.	**If yes, for how long have you being using computers?**		
	1-2 years	6	27.3
	3-4 years	12	54.5
	5-6 years	4	18.2
	7 years and above	0	0
5.	**What do you understand by ICT use in teaching and learning?**		
	Using computer in browsing the internet	50	100
	Using data projectors in teaching	50	100
	Using cell phones in browsing the internet	32	64

	Making video conferencing	24	48
	Using computers in teaching	50	100
	Using computer in browsing the internet	50	100

Above table 5 shows knowledge of teachers on the use of ICT in teaching and learning as follows: n=50, 100% of the respondents said they have heard of ICT before. Of those who have heard it before, 50% said it was through personal reading, 36% said it was at school, while 14% said it was through workshop. The table also show that 56% of the teacher respondent said they are not computer literate while 44% said they are computer literate. Of those who said they are computer literate n=44, 54.5% said they have being using computers for 3 to 4 years, 27.3% said they have being using computers for 1 to 2 years, while 18.2% of the respondents said they have being using computers for 5 to 6 years. Assessing what the respondent teachers understand by use of ICT in teaching and learning, the table shows n=50, 100% of the respondent said it is using computers to browse the internet, using data projectors in teaching, and using the computers in teaching, 645 said it is using cell phones to browse the internet, while 48% said it is making video conferencing.

Table 6. Extent of use of ICT facilities by the teachers and students

S/NO	Variables	Frequency N = 390	Percentage (%)
1.	**Are students and teachers allowed to use ICT facilities in the school?**		
	Yes	140	35.9
	No	250	64.1
	No, only teachers	260	66.7
	No, only students	0	0
2.	**If no, what are some reasons?**		
	Computers are not connected to the internet	242	96.8
	Computers are very few	250	100
	Students are not taught how to use them	198	79.2
	Inadequate time to make use of the ICT facilities	140	56
3.	**If yes, how often do you make use of the ICT facilities**		
	Daily	3	2.1
	Once in few days	8	5.7
	Once a week	5	3.6
	Once in a month	4	2.9
	Not at all	120	85.7
4.	**What are your reasons for using ICT facilities**		
	Charting with friends	120	30.8
	Browsing the internet, sourcing for information	150	38.5
	Sending e-mail	94	24.1
	To make video calls	120	30.8
5.	**Apart from the school ICT do you make use of your cell phones to browse the internet? (Students only)**		
	Yes	320	94.1
	No	20	5.9
6.	**If yes, for what reasons do you normally browse the internet?**		
	Do your assignments	316	98.8
	Personal reasons	320	100
	Source for further information on what you were taught	310	96.9

Table 6 above shows 66.7% of the respondents said only teachers are allowed to use ICT facilities in the school, 64.1% said both teachers and students are allowed to use ICT facilities in school while 35.9% said both teachers and students are allowed to use ICT facilities in school. Of those who said both teachers and students are not allowed to use the ICT facilities in school, n=250, 100% said is due to computers been few, 96.8% said it is because computers are not connected to the internet, 79.2% said it is because students are not taught how to use the ICT facilities while 56% said inadequate time to make use of the ICT facilities is the problem. Of those who said both teachers and students are allowed to use the ICT facilities in school n=140, 85.7% said they never made use of the facilities, 5.7% said they use it once in few days, 3.6% said they use it once in a week, 2.9% said they use it once in a month while 2.1% said they use it daily. Of those who uses the ICT facilities, 38.5% said their reason for use is to browse the internet and source for information, 30.8% said their reason for use is to chat with friends and to make video calls, while 24.1% said their reason for use is to send mails. The table also shows n=340, 94.1% of the respondents (students) said apart from school ICT facilities they made use of their cell phones to browse the internet while 5.9% said they do not use their cell phones to browse the net. Of those who uses their cell phones to browse the internet, 100% said it was for personal reasons, 98.8% said it was for them to do their assignment while 96.9% said it was to source for further information on what they were taught.

Table 7. Perceived usefulness of ICT by teachers and students

S/NO	Variables	Frequency N = 390	Percentage (%)
1.	**Do you think ICT is important in teaching and learning**		
	Yes	382	97.9
	NO	8	2.1
2.	**If yes, what are some benefits of ICT in teaching and learning?**		
	Motivates and engages students to learn	382	100
	Provides easy access for students to learn	370	96.9
	Fosters better quality education and teaching	368	96.3
	It helps to overcome distance barrier in aching and learning.	220	57.6
	Helps both teachers and students to keep path with latest developments	380	99.5
	It helps to prevent duplication of work	220	57.6
	It enables new ways of teaching and learning	282	100
	It enhances students achievements	280	99.3
	It enables the students to complete their assignments faster and easily	382	100

Table 7 above shows n=390, 97.9% of the respondents said they believe ICT is important in teaching and learning, while 2.1 said they do not believe ICT is important in teaching and learning. Of those who said ICT is important in teaching and learning, n=382, 100% said it motivates and engages students to learn; it enables new ways of teaching and learning; it enables the students to complete their assignments faster and easily, 99.3% said it enhances students achievements, 99.5% said it helps both teachers and students to keep pace with latest developments, 96.9% said it provides easy access for students to learn, 96.3% said it fosters better quality education and teaching, while 57.6 said it will help to overcome distance barrier in teaching and learning, and that it helps to prevent duplication of work.

Table 8. Factors hindering the availability and use of ICT in the schools

S/NO	Variables	Frequency N = 390	Percentage (%)
1.	**What are some factors hindering the availability of ICT in your school**		
	Lack of funding for purchase of ICT facilities	335	85.9
	High cost of maintaining ICT facilities.	215	55.1
	Frequent interruptions of internet connections	38	9.7
	Poor electricity supply	360	92.3
	Virus attack of the software's	42	10.8
	Anti-ICT policy being put in place	72	18.5
	Lack of infrastructure for ICT facilities	298	76.4
	Poor school leadership	310	79.5
2.	**What are factors militating against the use of the existing ICT facilities?**		
	Teachers unwillingness to change their old idea	298	76.4
	Inadequate training of teachers	210	53.8
	Lack of ICT skills	380	97.4
	Lack of time	170	43.6
	Lack of teachers' confidence and competence	367	94.1
	Generation gap on the part of teachers	326	83.6
	Insufficient number of computers	390	100
	Lack of motivation of teachers to adopt ICTs as teaching tool.	89	22.8
	Poor/frequent fluctuation of internet	68	17.4

Table 8 above shows factors hindering the availability of ICT in the school as follows n=390, 92.3% said is poor electricity supply, 85.9% said it is lack of funding for purchase of ICT facilities, 79.5% said it was poor school leadership, 76.4% said it was lack of infrastructure for ICT facilities, 55.1% said high cost of maintaining ICT facilities is to blame, 18.5% said ant-policy been put in place is the problem, 10.8% said virus attack of the software is the factor while 9.7% said frequent interruptions of internet connections is to blame. The table also shows that factors militating against the use of the existing facilities as follows: 100% said poor use of the existing facilities is due to insufficient number of computers, 97.4% said it is due to lack of ICT skills, 94.1% said it is lack of teachers confidence and competence, 83.6% said it is due to generation gap on the part of teachers, 76.4% said teachers unwillingness to change their old ideas is to blame, 53.8% said inadequate training of teachers is the problem, 43.6% said their inability to use the existing ICT facilities is due to lack of time, 22.8% said it is lack of motivation of teachers to adopt ICT as teaching tool while 17.4% said poor/frequent fluctuation of internet is the problem.

Test of Hypotheses

Table 9. Knowledge of students on the use of ICT facilities in learning

No.	Item	SA	A	D	SD	Mean
1.	Most students have heard about ICT	213	57	59	13	3.39
2.	The students have heard about ICT in School	241	67	29	3	3.61
3	Most students are computer literate	4	56	83	197	1.61
4.	Most students have only used computer in their school from 100 to 300 level	211	86	32	11	3.46

5.	Students take ICT as using computer in teaching	251	43	41	5	3.59
Cluster Mean						**3.92**

Table 10. Chi-Square test of students' knowledge on use of ICT facilities

O	E	(O-E)	(O-E)^2	$\frac{(O-E)^2}{E} = \chi^2$
213	184.0	29	841.00	4.60
57	61.8	4.8	23.04	0.37
59	48.8	10.2	104.04	2.13
11	45.4	34.4	1183.36	26.07
241	184.0	57.0	3249.00	17.66
67	61.8	5.2	27.04	0.44
29	48.8	19.8	392.04	8.03
3	45.4	42.4	1797.76	39.60
4	184.0	-180.0	32400.00	180.00
56	61.8	-5.8	33.64	0.54
83	48.8	34.2	1169.64	23.97
197	45.4	151.6	22982.56	506.22
211	184.0	27.0	729.00	3.96
86	61.8	24.2	585.64	9.48
32	48.8	-16.8	282.24	5.78
11	45.4	-34.4	1183.36	26.07
251	184.0	67	4489.00	24.40
43	61.8	-18.8	353.44	5.72
41	48.8	-7.8	60.84	1.25
5	45.4	-40.4	1632.16	35.95
Total				**922.24**

The calculated chi-square (X^2) = 922.24
Tabulated = 16.92

Since the Chi-square test (calculated) =922.24 is greater than the tabulated value =16.92. There is therefore no statistical evidence to reject the null hypothesis (Ho). This means that there is no relationship between students' level of study and knowledge in the use of ICT.

Table 11. Knowledge of teachers on the use of ICT facilities in teaching and learning

No.	Item	SA	A	D	SD	Mean
1.	Most teachers have heard about ICT	29	17	3	1	3.48
2.	Most teachers have heard about ICT in the school they teach	25	18	5	2	3.32
3	Most teachers are computer literate	4	7	15	24	1.82
4.	Most teachers have been using ICT just about four years back	23	14	9	4	3.12
5.	ICT is the use of computer and for browsing the internet for teaching and learning	31	11	6	2	3.42
Cluster Mean						**3.79**

Table 12. Chi-Square test of teachers' knowledge on the use of ICT facilities

O	E	(O-E)	(O-E)^2	$\frac{(O-E)^2}{E} = \chi^2$
29	22.4	6.6	43.56	1.94
17	13.4	3.6	12.96	0.97
3	7.6	-4.6	21.16	2.78
1	6.6	-5.6	31.36	4.75
25	22.4	2.6	6.76	0.30
18	13.4	4.6	21.16	1.58
5	7.6	-2.6	6.76	0.89
2	6.6	-4.6	21.16	3.21
4	24.4	-18.4	338.56	15.11
7	13.4	-6.4	40.96	3.06
15	7.6	7.4	54.76	7.21
24	6.6	17.4	302.76	45.87
23	24.4	0.6	0.36	0.02
14	13.4	0.6	0.36	0.03
9	7.6	1.4	1.96	0.26
4	6.6	-2.6	6.76	1.02
31	24.4	8.6	73.96	3.30
11	13.4	-2.4	5.76	0.43
6	736	-1.6	2.56	0.54
2	6.6	-4.6	21.16	3.21
Total				**96.28**

∴ **Chi-Square value (X^2) = 96.28**
Tabulated value = 16.92

Since the Chi-square test (calculated) =96.28 is greater than the tabulated value =16.92. There is therefore no statistical evidence to reject the null hypothesis (Ho). This means that there is no relationship between years of teaching experience and knowledge in the use of ICT.

Discussion of findings

The age of the student respondents was between the age of 18 to 39 and above with the majority (72.9%) been between the ages of 24-28. 91.8% of the students respondents had SSCE as their highest qualification as shown in table 1. Same table shows that 52.9% of the student respondents were in 100 level, 24.7% in 200 level and 22.4% in 300 level. This shows that majority of the students had at least basic formal education and are within their youthful age. On the other hand, 48% of the respondent teachers were between the ages of 41 and above, 26% between the ages of 36 and 40. Also as shown in table 2, 40% of the teacher respondents had BSc/BNSc, 24% had RN and RM only. 44% of the respondents as shown in the table 2 had 14 years and above of teaching experience, while 22% had experience of 10to 13 years and 14% had teaching experience of 7 to 9 years. This shows that majority of the teachers are in their late adulthood with good percentage of the teachers having had years of teaching experience.

Availability of ICT facilities in the schools

As shown in table 3, all the schools have ICT facilities as 100% of the respondents said they have ICT facilities in their schools. The table also show 46.2% of the respondents said they have ICT centre with computers not connected to the internet, 20.5% said they have their computers connected to the internet as well as have computers/ laptops in the library, and 35.9% said they have data projectors while only 7.7% said they have scanner in their school.

This shows that there is availability of ICT facilities in the schools even though not all items needed for proper ICT operation was available. Also the inability of the school to have their computers connected to the internet is a thing of concern.

This finding is in line with that of Hepp et al (2014) whose study showed that ICTs have been utilized in education ever since their inception but they have not always been massively present. The finding is also supported by that of Adesote and Fatoki (2013) whose study revealed that the readiness of ICT in the sub-Saharan Africa is still very low with most countries experiencing strong lags in connectivity because of the insufficient development of ICT infrastructures. The finding on the other hand slightly differ with that of Hamilton-Ekeke and Mbachu (2015) whose study on " the place of information, communication and technology in teaching and learning in Nigeria tertiary Institutions" revealed that basic ICT facilities such as computers were unavailable. The observed difference could be based on the institutions studied as ICT being in place has become one of the major requirements for re-accreditation of schools of Nursing and Midwifery in Nigeria.

Knowledge of teachers and students on the use of ICT in teaching and learning.

On the part of the students respondents n=340, 79.4% said they have heard of ICT before while 20.6 said they have not heard of ICT before. Of those who have heard it before n=270, 98.5% said school was the source through which they heard it as shown in table 4. The table also show 82.4% of the respondents said they are not computer literate while only 17.6% said they are computer literate. Of those who said they are computer literate n=60, 56.7% said they have been using computers for 3-4 years, 30% said they have been using for 1-2 years and 10% said they have used it for 5-6 years. Same table 4 show good percentage of the respondents agree with all items that tested what they understand by ICT use in teaching and learning: using computers in teaching (79.4%), using computers in browsing the internet (76.5%), using cell phones in browsing the internet (64.7%), using data projectors in teaching (57.4%) and making video conferencing (52.9%).

This shows that the student respondents have some degree of knowledge on what is use of ICT in teaching and learning as majority of them said they have heard of ICT and correctly identified items that are involved in the use of ICT in teaching and learning, however, such knowledge is highly limited as most of the respondents are not computer literate. This finding is supported by Nwezeh (2014) and Osakwe (2010) whose studies showed the need for teachers to learn new skills to teach students how to search for and use information from the internet safety issues. The study also showed the need to organize workshops for both staff and students so that they acquire knowledge to effectively use the internet resources that are less used. This finding is also supported by study by Teemu et al (2012) which shows the need for the teachers to have the knowledge about technology, pedagogy and content in order to successfully support students' learning with ICT. With technological pedagogical content knowledge, teachers are able to utilize a range of ICT to support students learning.

On the part of the teachers respondents, n=50, table 5 show 100% of the respondent said they have heard of ICT before out of which 50% said it was through personal reading, 36% said it was at school and 14% said it was through workshop. The table also show 56% of the respondent teachers said they are not computer literate while 44% said they are computer literate. Of those who said they are computer literate, 54.5% said they have used computers for 3 to 4 years, 27.3% said they have used it for 1 to 2 years while 18.2% said they have used it for 5 to 6 years. The respondents agree with all items testing their knowledge on the use of ICT in teaching and learning: using computers to browse the internet (100%), using data projectors in teaching (100%), using cell phones in browsing (64%) and making video conferencing (48%). This shows that the teachers even thogh they have heard of ICT and correctly identified items involved in the use of ICT in teaching and learning, they do not have an indepth knowledge of ICT use because majority of them were not computer literate. This finding is supported by Tella et al (2015) whose study on "assessment of secondary school teachers uses of ICTs: Implication for further development of ICTs use in Nigeria

secondary schools" show that technical support are lacking in the schools and teachers lack if expertise in using ICT was indicated as being the prominent factors hindering teachers readiness and confidence of using ICT during lesson". This finding is supported by Shyamal (2015) that "first, teachers need to be equipped with the fundamentals of ICT tools and sufficient understanding on the integration of these tools in teaching and learning, and secondly, efforts must be oriented towards changing mindset and developing positive attitudes towards ICT application in teaching and learning.

Extent of use of ICT facilities by the teachers and students

As shown in table 6, 66.7% of the respondents n=390 said that only teachers were allowed to use the ICT facilities in the school, 64.1% said that both teachers and students were not allowed to use the facilities while 35.9% said both students and teachers were allowed to use ICT facilities in the school. Of those who said students and teachers are allowed to use the ICT facilities in the school, n=140, 85.7% said they do not use it at all, 5.7% said they use it once in few days, 3.6% used the facilities once a week, 2.9% use it once in a month while 2.1% use it on daily basis. The table also show respondents reasons for using ICT facilities as follows: 38.5% said is to browse the internet, sourcing for information, 30.8% said is to chat with friends and to make video calls while 24.1% said is to send e-mails. However, the table 6 also show that apart from school ICT facilities, 94.1% of the students respondents use their cell phones to browse the internet.

This shows that most of the teachers and students do not make use of ICT facilities even though some opportunity were there for them, and the very few who made use of the ICT were not consistent and regular in their use of the ICT facilities. This finding is in line with that of Adesote and Fatoki (2013) whose study show that the readiness of ICT in the sub-saharan Africa is still very low with most countries experiencing strong lags in connectivity because of the insufficient development of ICT infrastructures. The study is also supported by Nwezeh (2014) and Osakwe (2010) whose studies showed the need for teachers to learn new skills to teach students how to search for and use information from the internet safety issues. The study also showed the need to organize workshops for both staff and students so that they acquire knowledge to effectively use the internet resources that are less used.

Perceived usefulness of ICT by teachers and students

97.9% of the respondents n=390 said they believe that ICT is important in teaching and learning as shown in table7. The table also show respondents agree with all items that measures some benefits of ICT in teaching and learning as follows: motivates and engages students to learn (100%), it enables new ways of teaching and learning (100%), it enables the students to complete their assignments faster and easily (100%), helps both teachers and students to keep pace with latest developments (99.5%), it enhances students achievements (99.3%), provides easy access for students to learn (96.9%), fosters better quality education and teaching (96.3%), it helps to overcome distance barrier in teaching and learning (57.6%), and it helps to prevent duplication of work (57.6%). This shows that most of the respondents believe that with the application of ICT in teaching and learning, the general quality of teaching and learning will improve both for teachers and students.

This finding agrees with Bransford et al (2000) Cited by Khalid (2000) "several studies have reviewed the literature on ICT and learning and have concluded that it has great potential to enhance student achievement and teacher learning". This finding also agrees with Grabe and Grabe (2007), who stated that "technologies can play a role in student skills, motivation, and knowledge; they argue that ICT can be used to present information to students and help them complete learning tasks". The finding is also supported by Adesote and Fatoki (2013), that ICT can be integrated in the learning process so that learning takes place through the learner's interaction with the facilities. The finding is further in agreement with EdTech Review (2014), "ICT is very useful in that it helps the students to do assignments given to them by their teachers". According to Noor-Ul-Amin (2014) ICTs

especially computers and internet technologies enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. This is in line with finding of the study.

Factors hindering the availability and use of ICT in the schools

As shown in table 8, good percentages of the respondents n=390 agree with most of the items that suggested hindering factors to the availability and use of ICT in the school. 92.3% said is poor electricity, 85.9% said is lack of funding for purchase of ICT facilities, 79.5% said is poor leadership, 76.4% said is lack of infrastructures for ICT facilities and 55.1% said high cost of maintaining ICT facilities is the factors. The table also show factors militating against the use of ICT facilities as follows: 100% said is insufficient number of computers, 97.4% said is lack of ICT skills, 94.1% said is lack of teachers' confidence and competence, 83.6% said generation gap on the part of the teachers is the problem, 76.4% said is due to teachers' unwillingness to change their old ideas, 53.8% said inadequate training of teachers is the factor, and 43.6% said lack of time is the militating factor. This finding shows that hindering factors to the availability and use of ICT in the schools is multifactorial and much is needed to be done to ensure effective use of ICT facilities in the schools. This finding is supported by Adesote and Fatoki, (2013) whose study showed a number of factors which are said to have militated against the use of ICT in education in Nigeria as; lack of funding to support the purchase of the technology, lack of training of teachers, lack of motivation on the part of teachers to adopt ICTs as teaching tools in the classroom instruction and so on. This finding is also in line with Sicilia (2005), whose study found teachers complained about how difficult it was to always have access to computers. The finding is also supported by that of Albirini, (2006) whose study on Syrian schools indicated that insufficient computer resources were one of the greatest impediments to technology integration in the classroom. Study by Mathipa and Mukhari (2014) also supported the finding of this study. Their finding show that factors influencing the use of ICT in teaching and learning in South African urban schools includes: insufficient number of computers and lack of application programs, teacher generation gap, inadequate teacher training, lack of ICT skill and lack of confidence, teachers beliefs, poor school leadership and lack of public support.

Conclusion

Based on the findings of the study and statistical analysis, the following conclusion were reached: there is availability of ICT in the schools, however, not all items needed for smooth running of ICT were available and the existing ones are insufficient. The study also show that both the teachers and the students have some degree of knowledge about ICT but such knowledge is seriously limited as most of the teachers and students were not computer literate which is one of the major criteria for one to effectively make use of ICT facilities. It was found that most teachers and students were not making use of the available ICTs in the school and those who made use of it were inconsistent in their use of the ICT facilities even though most of them believed that ICT use in teaching and learning is very essential for better and quality education. Factors hindering the availability and use of ICT facilities in the schools were multifactorial as shown in the study. This findings show the serious need for the leadership of the schools to ensure adequate provision of ICT facilities as well as ensure that both teachers and students are trained and retrained on the use of the ICT facilities to enhance the quality of teaching and learning in the schools.

Recommendations

Following the findings of the study, the researcher hereby recommends the following:
1. Management and leadership of the schools should put more effort to ensure provision of adequate ICT facilities for teachers and students' use as this will enhance the quality of the teaching and learning in the school.

2. Government should make use of ICT facilities in teaching and learning mandatory in all schools even as they assist schools who cannot afford it to secure adequate ICT facilities for teachers and students use.

Suggestion for further studies

The researcher suggests further studies on the following topics:
1. The use of ICT in Nigerian tertiary institutions: challenges and prospects
2. Use of ICT in teaching and learning as it affects the performance of student nurses and midwives.

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