International Scholars Journals

African Journal of Library and Information Science ISSN 2756-3383 Vol. 7 (1), pp. 001-010, May, 2021.
Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

Research on undergraduate students' perception of the effectiveness of ICT use in improving teaching and learning in Ekiti State University, Ado-Ekiti,Nigeria

Fabunmi, Francis Adesoji

Ekiti State University, Ado-Ekiti, Nigeria. E-mail: fabunmiomolosla@yahoo.com.

Accepted 17 May, 2021

The paper evaluated undergraduate students' perception of the effectiveness of ICT use in improving teaching and learning in Ekiti State University, Nigeria. Four research questions guided the study and the instrument used was the questionnaire, the research method used was survey. The study came out with the results that there is a preference for ICT use in improving teaching and learning, though costlier than the traditional book sources. It was also discovered that students frequently use internet centres as places of accessibility to get information through ICT teaching and learning. It concludes by affirming the need for the development of ICT use in Nigeria universities for the improvement of teaching and learning for the students. This becomes imperative because ICT culture has come to stay globally in all higher institutions. Information and Communication Technology is now the modern means of improving teaching and learning especially in the University system.

Key words: Ekiti State University, information and communication technology (ICT), perception, teaching and learning.

INTRODUCTION

Information and Communication Technology (ICT) plays a vital role in the development of any nation. It has been an instrument for achieving social, economic, educational, scientific and technological development (Adedeji, 2010). ICT has greatly influenced the educational sector especially on teaching, learning and research.

The application of Information Communication Technology (ICT) is not only emphasised in corporative business and the industrial sector, but it is an essential part of education at all levels (Allen, 2011).

ICT, including computers, is generally believed to foster cooperative learning, provide more information and, through simulation, make complex learning experiences easier to understand. Therefore, the use of ICT cannot be ignored either by teachers or by students. This sentiment is stressed by Van der Westhuizen (2004) who points out that, in relation to the use of ICT for learning, technology holds a promise of improved access to information and increased interactivity and communication between teachers and their students.

Information and Communication Technology (ICT) encompasses the effective use of equipment and programs to access, retrieve, convert, store, organize, manipulate and present data and information (Gay and Blads, 2005). E learning, which is described as the use of ICT to enhance or support learning and teaching in education, has become increasingly important in tertiary education (Adedeji, 2010).

Information and Communication Technology (ICT) and information technology (IT) can be used interchangeably. Information can be seen as "idea" conceived in the human mind, while communication is the transfer of that information from the original source to the destination where it is needed with the intention to producing a change in behaviour of the receiver (NCET, 1995; Ekinghwo, 1998; Adekomi, 1999). When information and communication drifts away from the orthodox verbal and print media towards the more recent electronic media then the concept is known as ICT. This is why Badru (2002) defines "ICT" as the science and activity of processing, storing and sending information by using computers. She further defined Communication Technology as the use of hardware and software to

enhance communication. In other words, there is an overlap between the function of Information Technology and Communication Technology. According to her, it is due to this great similarity in the function of "IT" and "CT" that the two became fused into ICT. ICT, therefore, is the means of accessing or receiving, storing, transferring, processing and sending ideas, perception or information through computers and other communication facilities (NCET, 1995).

The teaching-learning process is inevitably involved in information passage from the teacher (sender) to the learner (receiver) and vice versa on a regular basis. This has been done over the years in communication and to the most recent electronic communication. Hackbarth (1996) reported that teachers used manuscripts to teach.

Statement of the problem

It has been discovered in recent years that ICT is being canvassed by several people as being effective in improving teaching and learning. In the present information age, the issue of students' use of ICT is of crucial importance. This is so because the use of ICT by students would enhance competence and confidence in them. However, many students still patronize traditional book materials as a source of information in our universities rather than ICT that is more efficient and reliable; hence, the need for the study.

Objectives and purpose of the study

The major objective of the study was to study the perception of undergraduate students of Ekiti State University on the effectiveness of ICT use in promoting teaching and learning. ICT provides productive teaching and learning in order to increase the learners' creative and intellectual resources in today's information age.

The purpose of this study was to investigate students' perceptions of the possible effect of ICT application on student learning in Ekiti State University in order to determine the ICT skills and learning strategies undergraduate students use to enhance their learning.

Specifically, the study set out to find out how effective is the ICT as a better source to students in the improvement of teaching and learning as compared to the traditional book sources. The following ten instruc-tional characteristics would be tested: cost, availability, convenience of use, convenience for giving the students assignment, coverage of topics, speed of information retrieval, information reliability, coverage of subject areas and stimulation of interest during use.

Research questions

1. Which perceived ICT source(s) cost more in information retrieval in EKSU.
2. What perceived purpose(s) are ICT skills used for as viewed by undergraduate students in Ekiti State University?
3. What perceived frequency of use is ICT use by EKSU students?
4. What is the perceived usefulness of ICT to students of EKSU?

LITERATURE REVIEW

The use of ICT/IT in the teaching-learning process

ICT has really imparted students' lives in Ekiti State University, Ado-Ekiti, Nigeria. This is so because the world is moving at an unimaginable speed in the areas of information dissemination (Okiki, 2011). This is corroborated by Olaniyi (2006) who opined that the use of ICT can be transferred and cross fertilized in real time.

He further observed that it is one of the educational challenges of the modern age about which progressive academic institutions must make bold efforts to excel and compete favourably in the global market where education is a commodity.

The researcher observed that the state of ICT in Ekiti State University, Ado-Ekiti, Nigeria is the same in other universities in Nigeria. This is so because of the arrival of educational technology vis a vis instructional technology whether as a field of education or new terminology to what has been before like teaching, aids or apparatus as it was earlier called (Abimbade, 2002).

Current achievements in the field of computer and information technologies have now offered tremendous opportunities for learning by electronic means (Rozina, 2002). The use of ICT in Ekiti State University is now seen as a means to improve accessibility, efficiency and quality of learning by facilitating access to information resources and services.

According to Abimbade (2005), the world of technology has continued to grow and the world has become a global village.

Kumar and Kaur (2005) state that the current information revolution and increasing impact of information and communication technologies have modernized the process, learning and research in most universities. Several studies provide details about ICT adoption. Ramzan (2004) observes that expert systems, wireless networks, virtual collections, interactive web interfaces, virtual reference services, and personal web portals have brought changes since the start of the new millennium. Ramzan (2004), in his study, observed that librarians in Pakistan were not prepared to embrace the changes brought by information and communication technologies. Most of them were not even sure about ICT applications in their libraries. They were also uncertain about the benefits of these new technologies for their organizations since they have little knowledge of ICT.

Islam and Panda (2007) stated that the application of web-based information retrieval trends of researchers is ever increasing and the electronic material will eventually replace the traditional library and users need not go there to find and collect information they need. Al-Ansari (2006) focused on the internet use by the faculty including purpose of use, impact on teaching and research, internet resources that they use and the problem faced while using the internet. It was discovered that majority of them have been using the computer and internet for more than five years. The internet has helped them save time, find up-to-date information and compare with their colleagues. Almost all of them want to improve their internet use skill through formal training.

Shahriza et al. (2007) found that website is seen as an increasingly important reading source. Genoni et al. (2006), in their study, indicated that the research users are positive regarding the usefulness of the internet for research purposes and for expanding their scholarly community. Kinengyere (2007) stated that availability of information does not necessarily mean actually use. This showed that users are not aware of the availability of such resources or they do not know how to access them or they do not know what they offer. The study suggested that these call for continued information literacy programme. Over the years, the internet has become an all important technological tool in the production, marketing, and use of information worldwide. Bemah (2002) stated that the exponential growth in information and knowledge and the corresponding increase in users' needs have stipulated a greater degree of technological inventions and strategies towards the management, transmission/dissemination, organization and the use of information.

ICT use in teaching and research has become the norm across tertiary institutions where students have been identified as stakeholders in its development and implementation (Ling et al., 2001; Petrova and Sinclair, 2005; Lee and Nguyen, 2005).

Universities have sought methods of developing ICT skills into the curriculum for teaching and learning of students Jerry et al. (2001). Universities and other tertiary institutions have indicated that ICT has a generally positive effect in the quality of teaching and learning, although a few have been able to offer detailed evidence (Goldsman and Syer, 1999; Petrova and Sinclair, 2005; OECD, 2005).

Empirical studies concerning ICT, its importance and usage among students can be noted. For example, Dorup (2004), in a study of undergraduate medical students in Denmark, found that most students have access to computers at home as well as using internet regularly.

It has been observed that the traditional method of lesson delivery and educational services can no longer meet the demand for education especially in Africa World Bank (2001). This is premised on the fact that the volume of information generated by the human race and the need to survive through the sharing of knowledge and ideas is simply too much for the classroom environment to cope with. Ene (2001) opines that IT (ICT) makes communication between persons, establishments and so on to be more convenient, faster and precise. Ene (1998) had earlier shown that this present age is an information-driven age which is an era of sophisticated inter-connectivity of information through the net. It is this revolution that gave birth to satellite beam of instructional radio and television to remove villages and urban classroom, video recordings of teaching sessions, the marriage of compact disc and computer technologies which enables us to have an entire library at our fingertips and to "walk" or "fly" in simulated "virtual" "reality" environments, the joining of computer networks worldwide via internet and the focus on electronic wizadry linked by information superhighways to bring knowledge in all its splendor within the reach of everyone (Hackbarth, 1996).

Keatinge (1896) alluded to Comenius John Amos (1592 to 1670) who promoted this aspect of communication. This he described in his Great Didactic (1896) where he opined that a worthy classroom should be flooded with pictures, map and charts. He also designed an illustrated picture book for children, "The World in Pictures" having each page containing drawings accompanied by stories in Latin and vernacular which had been trsanslated to English in the book by Keatinge. However, over two decades ago, according to Hackbarth (1996) (that is, three decades from the present publication), the Carnegie Commission reported that education now faces the first great technological revolution in five centuries in the potential impact of the new electronics.

Research findings have shown that ICT has helped students to learn better and has enhanced performance. Hills (1990) opined that the computers will enable primary school pupils to be better organized and to have enhanced performance. Watson (1993) showed that students spend longer time in the learning task when they use ICT. Boolian (1994) discovered that students who use ICT develop new strategies for problem-solving, and also develop higher order thinking skills (Carthart, 1990). These findings are all reported by Aremu (2001).

Afolabi (2009) observed that a random sampling of ICT in the universities in Nigeria shows that the prospects of ICT and the ideal situation of educational research in our ICT driven campus is still a mirage.

Auwal (2009), in his own view, opined that there are some unique attributes offered by ICT such as for reducing isolation, facilitating dialogue, participation and fostering interactive networks. He went further to observe that those using ICT can be producers of their own information, and not just being passive recipients.

Uzo (2006) sees Information and Communication Technology as major factor in shaping the new global economy and producing rapid changes in the society.

Table 1. Demographic profile of the sample.

Gender	Number	Percentage (%)
Male	150	75
Female	50	25
Total	200	100

Table 2. Age of the respondents.

Age	NO	Percentage (%)
15 – 20 years	25	12.5
21 – 26 years	145	72.5
More than 26 years	30	15
Total	200	100

Table 3. Enrolment status of the respondents.

Status	NO	Percentage (%)
Full Time	200	100
Part – Time	-	-
Total	200	100

Table 4. Level of the respondents.

Level	NO	Percentage (%)
100	80	40
200	100	50
300 and above	20	10
Total	200	100

Gender consideration continues to feature in research finding for quite a long time. Each time it comes up in research; the result has always been inconclusive. This is why questions like "Is there any gender gap in computer attitudes use?" will continue to re-echo as it was raised by Luchetta (2000). Ordinarily, the females will be portrayed as more likely than males to be plagued with computer anxiety. Some literature review by Luchetta showed that the gender gap in closing up and that significant differences exist where gender is considered alongside other variables like age, experience, exposure and so on. For example, no gender differences were found in an introductory computer course in a university setting, despite the author's expectation to the contrary (Barrier and Margivio, 1993).

Afolabi et al. (2005) analyzed gender as a variable associated with the use of and attitudes about asynchronous learning networks (ALN) in a university setting. The authors found that both males and females made similar use of ALN, had similar (positive) attitudes about their computer experience, and shared a common desire to take more courses using computers.

METHODOLOGY

Instrument used

The instrument used in this research was a two-section questionnaire known as the Questionnaire on Students of Ekiti State University, Ado- Ekiti, Nigeria, Evaluation of ICT sources for Teaching and Learning designed by the researcher. Section B sought to know the perception of undergraduate students on the effectiveness of ICT in improving teaching and learning in terms of (1) cost of retrieving information (2) in depth coverage of academic topics (3) ease of getting information (4) speed of getting information (5) convenience (6) availability (7) reliability (8) coverage of numbers of subjects (9) ease in giving students assignment (10) being interesting to consult. Each of these was used in formulating a research question asked in the study. Section A required respondents' personal information like (1) gender (2) age (3) level of student and (4) Faculty of Students.

Method of data collection and analysis

The research method used for this study is the survey. The main data collection technique was the questionnaire to undergraduate students of Ekiti State University to obtain qualitative data on undergraduate students' perception of the effectiveness of ICT use in improving learning.

In analyzing the data, the researcher used the manual method with the aid of electronic calculator; the tables of analysis were compiled on the variables of interest. This type of descriptive statistics involves the use of tables. Percentages of the observed data for the variable of interest were also calculated.

200 copies of the questionnaire were distributed by the researcher. They were distributed in the university library and faculties in the university. Some of the questionnaires were collected immediately after completion while others were collected later. After the collection, the responses were calculated and analyzed using percentages. The results are shown below.

Twenty-five respondents were taken from each of the eight faculties in Ekiti State University making a grand total of 200. All the questionnaires were filled and returned. This makes a response rate of 100%.

The first part of the questionnaire sought demographic information such as age, gender, course of study and level in the university.

Table 1 shows the demographic profile of the respondents in the sample, Table 2 shows age of the respondents, Table 3 shows enrolment status of the Respondents, Table 4 shows level of the respondents. Table 5 shows No. of respondents spread according to their faculties.

In the 10 items questions in Table 6, ICT usage was rated higher than books by the students in improving teaching and learning. This shows the preference of ICT by students as a source of information for teaching and learning, though ICT was found costlier than books to get information. This finding is supported by the fact that high cost of computer and related ICT information bearing sources are costly in Nigeria and oversea countries. In Table 7, majority of the respondents rated internet centers highest as the place where they access information through ICT for teaching and learning. This shows that the respondents frequent internet centers mostly to get information.

In Table 8, 90% of the respondents ticked the most preferred cost place for the accessibility of ICT as not costly. This shows that internet centres are not costly for respondents to access information for teaching and learning purposes.

Table 5. No. of respondents spread according to their faculties.

Faculty	NO	Percentage (%)
Agriculture	25	12.5
Education	25	12.5
Engineering	25	12.5
Law	25	12.5
Management Sciences	25	12.5
Medicine	25	12.5
Sciences	25	12.5
Social sciences	25	12.5
Total	200	100

Table 6. Comparism of students' perception of books and ICT as a source for teaching and learning.

Statements	Textbooks	%	ICT	%
Which of the two sources do you find costlier to get information?	100	50	190	95
Which one has in depth of coverage to topics?	91	46	180	90
Which one is easier to get information?	110	55	190	95
Which of the sources is quicker to get information?	100	50	180	90
Which one is more convenient to get information?	120	60	100	50
Which of the sources is more available to get information?	150	75	100	50
Which one is more reliable?	100	50	150	75
Which one provides information on more subjects?	100	50	150	75
Which of the sources is easier for students to get assignment?	150	75	100	50
Which one do you enjoy consulting more?	100	50	150	75

Table 7. Places of accessibility to get information through ICT for teaching and learning.

Place of accessibility	No. of respondents	Percentage (%)
Lectures	80	40
Lecturers offices	70	35
University libraries	100	50
Homes	80	40
Internet centers	190	95
Others specify	20	10

Table 8. Cost implications in the most preferred place(s) of accessibility of ICT for teaching and learning.

Cost	No. of respondents	Percentage (%)
Very costly	50	25
Costly	60	30
Little bit costly	70	35
Not costly	190	90

Table 9 shows the frequency of use of ICT by students; those that signified that they use telephone as a form of ICT occasionally were the highest with a total of 85% which shows that students use ICT daily. Table 10 shows the use of the sources while searching for information. Telephone as a source of ICT came first with 90%. This shows that students use telephone with ICT facilities mostly in Ekiti State University, Ado – Ekiti.

The same result is for the ICT resources that the students use (Table 11). It was similarly indicated that they use the telephone mostly with a percentage of 90% in the university.

Table 9. Frequency of use of ICT by students.

ICT Facilities	Once a week	Twice a week	Daily	Occasionally
CD – ROM	(70) 35%	(80) 40%	(90) 5%	140 (70%)
Computers	(70) 35%	(80) 40%	(90) 45%	145 (75%)
Facsimile	(90) 45%	(85) 43%	(80) 40%	(140) 75%
Internet	(100) 50%	(80) 40%	(90) 45%	(180) 90%
Printer	(80) 40%	(85) 43%	(120) 60%	(140) 75%
Digital Camera	(70) 35%	(80) 40%	(85) 43%	(150) 75%
Scanner	(60) 30%	(65) 33%	(80) 40%	(140) 75%
Projector Multimedia	(70) 35%	(75) 38%	(85) 43%	(150) 75%
Telephone	(90) 45%	(100) 50%	(170) 85%	(120) 60%

Table 10. How do you use the following sources while searching for information?

Sources of information	Number of respondents	Percentage (%)
CD – ROM	100	50
Computers	150	75
Facsimile	140	70
Internet	180	90
Printer	120	60
Digital camera	100	50
Scanner	90	45
Projector multimedia	80	40
Telephone	180	90

Table 11. Which of the following ICT resources do you use?

Use of ICT resources by students	Number of respondents	Percentage (%)
CD – ROM	100	50
Computers	150	75
Facsimile	140	70
Internet	180	90
Printer	120	60
Digital Camera	100	50
Scanner	90	45
Projector multimedia	80	40
Telephone	180	90

DISCUSSION

The findings have revealed the perception of undergraduate students of Ekiti State University on the effectiveness of ICT use in improving teaching and learning. Majority of the respondents see the usefulness of ICT use though costlier than the traditional book. It was discovered from the findings that internet sources were the most preferred place for the accessibility of information by the students and it is not costly.

CONCLUSION

With the results stated above, it can be concluded that students find the internet very useful and accessible. The implication is that ICT culture has come to stay globally and in all higher institutions. This is so because Information and Communication Technology is now the modern means of improving teaching and learning especially in the university system. This study found that Ekiti State University students were generally favorable

to ICT in an academic setting.

The use of Information and Communication Technology (ICT), no doubt, is gaining momentum in Nigerian universities. Once students embrace the use of ICT, the teaching, learning and research activities in the universities will be made easier in the university community. ICT usage will facilitate development since there will be free flow of information.

RECOMMENDATIONS

Based on the aforementioned findings, it is recommended that administrators pay more attention to the use of ICT for teaching and learning in the universities. They should maintain the high levels of ICT usage among students though continuous education and promotion of the benefits attached to ICT resources. This would involve the use of seminars and training programmes as well as encouraging students to embrace ICT and its resources. This finding is also important in that it serves to inform educators about the usage of ICT in an academic environment. This is important in that the students will need to use of ICT in the workplace after graduation and prior to preparation is a necessity.

University management especially in Nigeria should as a matter of urgency make basic investment to acquire modern technologies with a clear vision. A lot needs to be done in order for universities in the country to join the rest of the developed and modern universities in the world in the area of ICT use in improving teaching and learning. There is therefore need for universities in Nigeria to develop a clear policy that will guide the development and integration of ICT use in the improvement of teaching and learning of the students.

Government should improve infrastructural facilities like electricity to make ICT work in universities in order to improve teaching and learning.

Curriculum designers must take ICT to consideration when designing the syllabus for tertiary institutions. Stakeholders must place ICT in a centre place of activities in all universities.

Internet access by students should be encouraged and made more accessible at very affordable prices.

REFERENCES

Abimbade A (2002). Perspectives of Technology Integration and Effectiveness of Computer Assisted Instruction (CAI) in primary mathematics Classroom. Uniqua Res. Chronicle 4(2):88-107.

Abimbade A (2005). A welcome address at the opening ceremony of e-learning 2005 conference organized by e-learning Network of Nigeria (ELNN).

Adedeji OA (2010). The Development of Modern Information and Communications technology in Ibadan: Creative Educational Publications Ltd. p. 58.

Adekomi AA (1999). A Handbook of Educational Communication and Technology. 2nd Edition. (Lagos) Complete Computer Services.

Afolabi AO, Adedayo YA, Adeyanju OL (2005). Why College Teachers Do Not Use ICT Facilities in Teaching. J. E-Learn. 1(1):25-38.

Afolabi AO (2009). Clogs in the wheel of ICTs for Higher Education Research in African: The way forward. J. Res. Educ. 6(1,2):190-203.

Al-Ansari H (2006). The Internet use by Faculty Members of Kuiat University. Electronic Library 21(5):487-495.

Allen MC (2011). Third-Year Students' Perceptions of the Use of ICT at a Teacher Training College in Namibia. Unpublished M. Phil Theses submitted to the Department of Curriculum Studies, Stellenbosch University, Namibia.

Aremu A (2001). Information Communication Technologies and the Development of Scientific Knowledge and Skills in Primary Schools. A paper presented at National Conference of NAEMT Sept. p. 10-15.

Auwal A (2009). Information and Communication Technology ICT and Agricultural Extension Teaching. Inter. J. Res. Educ. 6(1,2):149-157.

Badru FM (2002). Using Information and Communication Technology to Pursue the Goals of Primary Education. A paper presented at the National Conference of Nigeria Association for Educational Media and Technology (NAEMT) from November 20-23, 2002, Ibadan.

Barrier TB, Magavio TM (1993). Pretest – Post-test Measures of Introductory Computer Students' Attitude Towards Computers. J. Informational Systems Education 5(3) available at http://gise.org/jise/vol.5/pretest.htm

Bemah GB (2002). Internet Information, A Resources usage among Undergraduate at the University of Ibadan, Unpublished Thesis, University of Ibadan, Nigeria.

Boolian R (1994). Interpreting the World with Numbers. An Introduction to Quantitative Modelling. In Momellar, R. Boohan, J. Ogborn and C. Tompselt (Eds) Learning with Artificial Words: Computer Based Modelling in the Curriculum. London: The Falmer Press.

Carthart WG (1990). Effects of Logo Instruction on Cognitive Style. J. Educ. Comp. Res. 6(2):231-242.

Dorup J (2004). Experience and attitudes towards information technology among first year medical students in Denmark. Longitudinal questionnaire survey "J. Med. Internet Res. 6(1) Retrieved August 15 2012 from http//www.org/2004/i/e10/

Ekinghwo PO (1998). "An Overview of Information Technology for Institutional Management". Niger. J. Comp. Lit. 2(1):29-38.

Ene IO (1998). Reading in Multimedia Communication Age. The Place of the Publisher. Paper presented at the 1998 Pick-s Brain Week, Fees Okere.

Ene IO (2001). Information Technology in Teacher Education. Paper presented at the National Conference of HDEMT Sept. 9-15, 2001.

Gay G, Blads R (2005). Information Technology for CXC CSEC, Oxford University Press, UK.

Genoni P, Merrick H W, Michele A (2006). The Scholarly Communities, e – research Literacy and Academic Librarian. Electronic Library 24(6):737–746.

Goldsman SCK, Syer C (1999). The Technology Dilemma " Paper presented at the secretary's conference on Educational Technology. Retrieved August 15 2012 from http//www.gov/technology/techconf/1999/white paper 4html.

Hackbarth S (1996). The Educational Technology Handbook: A Comprehensive Guide. New Jersey: Educational Technology Publications.

Hills J (1990). Children in Control: Attempts of Fostering Auanistonomous Attitude Towards the Computer Works in the Classroom. Developing Pupils' Autonomy in Learning with Computers. Teachers Voices, 2 Coventry. National Council for Educational Technology.

Islam A, Panda KC (2007). Web Information Retrival Trend of Researchers: A Case Study of Sambalpur University, India. Electronic Library 25(6):725-765.

Jerry P, Dee AW, Niki D, Jerry W (2001). Reflections on the Impact of ICT on Teacher Education Proceedings of Society for Information Technology and Teacher Education Conference. Pp. 947-952, Chesapeake: VA: ACCE. Retrived from http: //www.editlib.org/pp/16847 on 5th September, 2012.

Keatinge MW (1896). The Great didactic of John Comenius with introductions, biographical and historical: London, Adam and Charles Black. 490 pp.

Kinengyere AA (2007). The Effect of Information Literacy on the Utilization of Electronic Information and Resources in selected

Academic and Research Institutions in Uganda. Electronic Library 25(3):328–341.

Kumar R, Kaur A (2005). Internet and its use in the Engineering Colleges of Punjab India. A case study. Webology 2(4):1–22.

Lee YL, Nguyen H (2005). "So are you online yet? Distance and online education today, managing modern organizations with Information Technology, pp. 1035-1036.

Ling P, Arger G, Smallwood H, Toomey R, Kirkpatrick D, Barnard I (2001). The Effectiveness of Models of Flexible Provision of Higher Educations. Department of Education, Training and Youth Affairs, Common Wealth of Australia.

Luchetta T (2000). Gender and Computing. Toolbox or Toystore. Paper presented at the Sprint 2000 Wisconsin Association of Academic Librarians Conference. April 12, 2000.

NCET (1995). Approaches to I.T. Capability Keystages 1 and 2. Conventry. National Council of Education Technology.

OECD (2005). "E-learning in tertiary education: where do we stand?" Educ. Skills 4(1):1293.

Okiki CO (2011). Information Communication Technology support for E-Learning environment at University of Lagos Library Philosophy and Practice. http//www.webpages.uidaho.edu/-mbolin/okiki 3 html.

Olaniyi SS (2006). E-learning Technology: The Nigerian Experience. P.2.A paper presented at the shape the change xxiii F16 Congress Munich Germany, October 8-13. 2006.

Petrova K, Sinclair R (2005). "Business Undergraduate Learning Online: A one Semester Snapshot," Inter. J. Educ. Develop. Info. Commun. Tech. Vol. 1(4):6988.

Ramzan M (2004). Does level of knowledge impact Librarians' Attitude towards Information Technology (IT) Applications? 2nd International CALIBER. 2004, Dew Dell: 11–13 February.

Rozina I (2002). Theory and practice of computer assisted communication in Russia. Present.

Shahriza K, Nor A, Hasan A (2007). Reading Habits and Attitude in Digital Age: Analyses of Gender and Academic Program differences in Malaysia. Electronic Library 25(3):285–297.

Uzo B (2006). Management of Information Communication Technology and Vocational Education in Imo State. Inter. J. Res. Educ. 3(1):150-156.

Van der Westhuizen D (2004). The design and the development of a web-based learning environment, in S. Gravett & H. Geyser (Eds.). Teaching and learning in higher education. Pretoria: Van Schaik.

Watson OM (Ed) (1993). The Impact Report of Evaluation of the Impact of Information Technology on Children's Achievement in Primary and Secondary Schools. London: Kings College.

World Bank (2001). The role of ICT in Governing Rural Development. Retrieved from www.org/innovation/presentation/ict.pdf on 5th September, 2012.

APPENDIX

Questionnaire

Perception of undergraduate students of Ekiti State University, Nigeria on the effectiveness of ICT use in improving teaching and learning

GENERAL INSTRUCTION

Please tick the appropriate answers and write as much as possible as you wish in the empty spaces provided where applicable.

Section A

Background information

1. Sex:
   Male [ ] Female [ ]
2. Course of Study .....
3. Level .....
   (Please state level i.e. 100, 200 e.t.c)
4. Age:
   15 – 20 years [ ]
   21 – 26 years [ ]
   More than 26 years [ ]

Section B

1. Perception of UNAD students of effectiveness of ICT use in improving teaching and learning as compared to books

S/N	Question	Textbook			ICT	
1.	Which of the two sources do you find costlier to get information?					
2.	Which one has indepth of coverage to topics?					
3.	Which one is easier to get information?					
4.	Which of the sources is quicker to get information?					
5.	Which one is more convenient to get information?					
6.	Which of the sources is more available to get information?					
7.	Which one is more reliable?					
8.	Which one provides information on more subjects?					
9.	Which of the sources is easier for students to get assignment?					
10.	Which one do you enjoy consulting more?					

2. Where do you think is most accessible to get information through ICT for teaching and learning

a. Lectures .....
b. Lecturers Offices .....
c. University Libraries .....
d. Homes .....
e. Internet Centres .....
f. Others specify .....

3. How would you rate the cost implication in the most preferred place(s) of accessibility of ICT for teaching and learning.

a. Very costly .....
b. Costly .....
c. Little bit costly .....
d. Not costly .....

4 Give other information you think may be of relevance to this research work

---

---

5. How often do you use ICT?

Frequency of use of ICT by students

ICT facilities	Once a week	Twice a week	Daily	Occasionally
CD – ROM				
Computers				
Facsimile				
Internet				
Printer				
Digital camera				
Scanner				
Projector multimedia				
Telephone				

6. How do you use the following sources while searching for information?

Sources of information	Number of respondents	Percentage (%)
CD – ROM		
Computers		
Facsimile		
Internet		
Printer		
Digital camera		
Scanner		
Projector multimedia		
Telephone		

7. Which of the following ICT Resources do you use?

Use of ICT resources by students	Number of respondentsPe	centage (%)
CD – ROM		
Computers		
Facsimile		
Internet		
Printer		
Digital Camera		
Scanner		
Projector Multimedia		
Telephone		