

**TERTIARY STUDENTS' PERCEPTION OF THE UTILIZATION OF ICT FOR
POST-COVID-19 INSTRUCTION IN CALABAR EDUCATION ZONE OF CROSS
RIVER STATE, NIGERIA**

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Abstract

This study examined tertiary student perceptions of the use of ICT in Post-COVID-19 era in tertiary institutions in Calabar Education Zone. It employed survey research design; two research questions were proposed for the study which randomly selected 200 tertiary students. 40 students from the University of Calabar, 40 students from University of Cross River State, 40 students from Authur Jarvis university and 40 students from Cross River State College of Health Technology as the sample. A likert-type questionnaire consisting of 20 items was used for data collection. The reliability coefficient of 0.78 was obtained using Kuder Richardson K-20. Data collected were analysed using descriptive statistics (simple percentage and graphs). It was discovered that students in Calabar Education Zone have positive perception of ICT for instructional purposes. Also, the findings revealed that tertiary students are enthusiastic about the use of ICT for teaching and learning. It was recommended that there is need to provide the students with computers at all levels of education, subsidize the cost of purchasing a laptop for students especially in tertiary institutions where research is a common practice, and for use in teaching-learning activities.

Key Words: Students' Perception, ICT, Covid-19, Teaching, learning.

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Introduction

Before COVID-19, the use of Information and Communication Technology (ICT) for instructional purposes at all levels of education, more so in tertiary institutions, was taken for granted. But during and after the Log Down of 2020 occasioned by the Pandemic, code-named COVID-19, ICT forged itself to the front burner in the education business. Both students and their teachers tend to appreciate its importance within the education sector. But human perception is an important variable in adaptation and adoption, especially of new technologies, such as ICT. Positive perception may easily speed up their adoption and adaptation; negative perception can stifle such efforts, irrespective of the potentials of such technologies. That reason underscores the need for this investigation.

Background

Tertiary students' perceptions of ICT refer to the beliefs, thoughts, and feelings which students hold about ICT with respect to its instructional applications. The concept is concerned with how students regard ICT as an innovation for teaching and learning, otherwise seen as instruction. Views about its uses and appraisal of the benefits accompanying its application in teaching-learning activities (Alturise & Alojaiman 2013) are vital for successful application. Schools make use of diverse sets of ICT tools to communicate, create, disseminate, store, and manage information. Too much extent, ICT has become an integral part of the teaching-learning interaction. Such approaches seem to be gradually replacing chalkboard, with interactive whiteboard, using student's own smartphones, or other devices for teaching/learning during class time and the virtual learning where students watch lectures at home on the computer and used during classroom time for more interactive exercise (Inyang-Abia, 2015; Egbe, 2019).

When students are digitally literate and trained to use ICT, these approaches can lead to higher order thinking skills, provide creative and individualized option for students to express their understanding and leave students better prepared to deal with ongoing technological change in the society. ICT can enhance the quality of education in several ways, first by increasing learners' motivation and engagement, facilitating the acquisition of basic skills. ICTs are also transformational tools which when used well, can promote the shift to a learner-centered environment. ICT especially computers and Internet technology enable new ways of learning rather than simply allowing students to do what they have done before but in a better way. It also plays a great role in what students should learn and how they should learn according to Woreta, Kebed and Zegeye (2013). All these depend upon the perception of the students who are the target of this study.

In support of the above, Duiner (2015) noted that Computer education has been embraced as one of the most potent means to ensuring rapid Socioeconomic progress. The use of ICT and for that matter the knowledge in ICT is very pervasive. In this technological age, almost every facet of human life demands knowledge and skills of ICT. Good knowledge of ICT applications is needed in most human activities ranging from shopping to working, e-commerce, e-voting,

and e-governance, among others. This underscores why, right from basic to tertiary levels of education, learners are exposed to computer education. Both male and female students study ICT as a core subject in Nigeria and those who so desire take it as an elective subject to the levels that their academic ability can take them. In this time and age, students cannot claim to be ignorant of the benefits of ICT competences and knowledge to their prospects. Effective learning of ICT demands positive perception hence the need for intermittent assessment of students' perception of the subject. Studies have established a relationship between perception and learning. Undoubtedly, the study of students' perception of utilization of ICT for instructional purposes is very essential in a developing country like Nigeria where computer education is relatively a recent phenomenon.

Generally, perceptual studies have gained prominence in education due to its major role in predicting behaviour. A study by Yushua (2006) supports this claim. Consequently, investigation into students' perception of ICT has been a substantial feature of the work of ICT instructors and educationists in general. The need for gender studies in ICT also arises from the fact that although some aspects of behaviour in both gender groups are similar, other aspects might be different. The gender issues are likely to have some implications for ICT utilization. Those issues have the propensity to predispose students towards ICT. It is imperative, therefore, to understand how male and female tertiary students' approach or avoid the use of ICT for teaching and learning in countries and localities that have just developed interest in the subject.

Abedalaziz, Jamaluddin, and Chin (2013) investigated students' perception toward the internet and computer use. The respondents were 289 students from the Faculty of Education, University of Malaya. The findings showed that students have positive attitudes toward computer and Internet usage. No significant differences were found between participants' perception toward the Internet and computer related to gender, field of study, and ethnicity. Teo (2008) conducted a survey on pre-service for student teachers' perception towards computer use in Singapore context. A total of 139 pre-service for students' teachers were assessed for their perception towards computers using a questionnaire with four constructs: affect (liking), perceived usefulness, perceived control, and behavioural intention to use computers. Teo found that the teachers and students were more positive about their perceptions of the usefulness of computers and their control of the computers than their attitude towards computers and intention to use computers. Perception plays an important role in determining people's reactions to situations (Al-Zaidiyeen, Lai Mei, & Fook, 2010). In support of these, Inyang-Abia (2021) emphasizes the strategic role of digital gadgets for instructional purposes at all levels of education of the present-day learners and teachers.

According to Oblinger and Oblinger, (2005) the current young people who are also students at tertiary institutions and the academic world are challenged on how to be best educated. These students are believed to be so different from the preceding generations. It is asserted that they learn better from discovery and experiments, prefer work in teams, favour audio-visual sources,

Tertiary Students' Perception Of The Utilization Of Ict For Post-Covid-19 Instruction

Ikpeme, Nyenime Daniel, Okri, John Arikpo & Ugboma, Giftie Emmanuel

are capable of multi-tasking, depend on ICT use and are always connected with others through ICT. All these are in support of Prensky in Inyang-Abia (2014) who see them as *Digital Natives*.

Thus, availability of ICT devices is paramount to academic success but Duiner (2015) after stressing the usefulness of ICT to students on research, posited that “adopting advance ICT in academic institution can be influenced by the perceptions of students, researchers, and the faculty towards it. He noted that the application of ICT in research has caused significant transformation in the modern world not only because it helps to save time and money used during and after research, but it also reduces the difficulties in working with big data or information resources which were impossible in the past”. Duiren’s emphasis borders on research, as he went further stating that, ICT in research has dramatically reduced the barriers and obstacles in research attributed to distance using social networks, web portals, multimedia, and hypermedia. All these are not giving adequate attention to a key variable capable of affecting the utilization of ICT for instruction.

Anandarajan (2010), also supports that ICT has developed research process by making it more effective, efficient, and collaborative. ICT provides members and institutes with support strategies through collaboration, resource sharing, webinars, and custom consultations (Clement & Duinen, 2015). In the light of the above, students at tertiary institutions the world over are expected to possess ICT gadgets which supports their learning especially mobile phones and computers to make this ICT realization possible. But their attitude towards its use for teaching and learning still needs some investigation, especially in different parts of Nigeria.

Rodulfo and Joseph (2015) supported that millions of mobile phones are now accessible in the market nowadays. Indeed, innovative mobile devices such as smart phones and personal digital assistants have become ubiquitously available and have changed the ways people establish relationships. Thus, learners, whether young children, teenagers, or university students, are accustomed to seeing and using camera phones and handheld games devices. Obviously, this should make education for this generation of students much realistic as students now move along with their ICT gadgets to anywhere and can learn from these devices anytime anywhere. Their attitude to their use for instruction needs scientific investigation, rather than mere speculation.

Kubiatko (2010) conducted a study on perception and attitudes towards ICT used in science education among Czech university students and found that an effective use of ICT could have the additional benefit of improving perception and computers skills, which in turn could improve the effectiveness of ICT, thus creating a positive feedback spiral. Edmunds, Thorpe, and Conole, (2012) studied student perception and use of ICT in course study, work and social activities which results suggested that usefulness and ease of use as key dimensions of students' attitudes towards technology in all three contexts. ICT was perceived as most positive in the context of work and technology use at work. It is an important driver for technology use in

other areas too (Inyang-Abia (2015). Babaheidari and Svensson (2014) in another study had a different conclusion that the impact of ICT on learning outcomes was not clear. Lin, Huang, and Chen (2014) pointed out that there is no evidence of any strong impact of the application of ICT in education. One may then wonder the role of perception in such conflicting results. To determine tertiary students' perception of the utilization of ICT for instructional purposes is the focus of this paper.

Research objectives

The general objective of this study was to assess the perception of students on ICT utilization in tertiary institutions in Calabar Education Zone. Specifically, the study intended to:

- i. find out the perception of students towards ICT utilization for instructional purposes in tertiary institutions in Calabar Education Zone; and
- ii. Ascertain the extent of students' perception toward virtual learning in tertiary institutions in Calabar Education Zone.

Research questions

The following questions guided the study:

- i. What is the tertiary students' perception of the use of ICT for teaching and learning in tertiary institutions in Calabar Education Zone?
- ii. To what extent does students' perception affect virtual learning in tertiary institutions in Calabar Education Zone?

Methodology

This study adopted a survey research design. The area of the study was Calabar Education Zone with focus on four out of the seven local government areas: Calabar South, Calabar Municipality, Akamkpa and Akpabuyo where tertiary institutions are located. The population consisted of all third year students of University of Calabar (UNICAL), Cross River State College of Health Technology (COHT), College of Education, Akamkpa (COEA), University of Cross River State (UNICROSS) and Arthur Jarvis University making a total of 13,459 students which comprises of 7,333 female students and 6,126 male students as shown in Table 1 .

Tertiary Students' Perception Of The Utilization Of Ict For Post-Covid-19 Instruction

Ikpeme, Nyenime Daniel, Okri, John Arikpo & Ugboma, Giftie Emmanuel

Table1: Number of third year students in the selected schools

S/N	Tertiary Institution	Male	Female	Total
1	University of Calabar	3,192	4,008	7,200
2	Cross River State College of Health Technology	112	280	392
3	College of Education	240	264	504
4	University of Cross River State	2100	2400	4500
5	Arthur Jarvis University	482	381	863
	Total	6,126	7,333	13,459

Source: Institutions Bursary Department

The study randomly selected 186 students comprising of 83 male and 103 female drawn from the population of the study using Yamane;s formula. The sample distribution is presented in Table 2.

Table 2: Sample Distribution by institution

S/N	Tertiary Institution	Local Government Area	Sample		Total
			Male	Female	
1	University of Calabar	Calabar	20	30	50
2	Cross River State College of Health Technology	Calabar Municipality	10	20	30
3	College of Education	Akamkpa	15	15	30
4	University of Cross River State	Calabar South	20	26	46
5	Arthur Jarvis University	Akpabuyo	18	12	30
			83	103	186

A 20-item Tertiary Students Perception of ICT for Instruction Questionnaire (TSPIQ) was constructed, validated, and used for data collection. The reliability coefficient of 0.78 was obtained using Cronbach Alpha. The 20-item Likert-type instrument was based on a five-point rating scale ranging from Strongly Agreed, Agreed, Not Sure, Disagreed and Strongly

Disagreed. Descriptive statistics (frequency counts and simple percentages) were used to answer the research questions. The results obtained are as presented below.

Results

Research Question 1:

What is the tertiary students’ perception towards the use of ICT for teaching and learning in tertiary institutions in Calabar Education Zone?

Data for answering this research question were derived from responses to items 1 to 10 of Section B of the instrument. Simple percentages were used to present the results as shown on Table 3.

Table 3: Tertiary students’ perception toward utilization of ICT

S/N	Items	Strongly Agree (SA)	Agree (A)	Not Sure (NS)	Disagree (D)	Strongly Disagreed (SD)
1	I don’t have phobia for ICT equipment	127(63.5)	56(28)	2(1.0)	10(5)	5(2.5)
2	ICT enhances students’ learning.	114(57)	71(35.5)	15(7.5)	0(00)	0(00)
3	ICT provides better learning and research experiences.	143(71.5)	51(25.5)	6(3)	0(00)	0(00)
4	ICT is a fast and efficient means of getting information	165(82.5)	31(15.5)	4(2)	0(00)	0(00)
5	ICT motivates me to do more on my research	137(68.5)	59(29.5)	3(1.5)	1(0.5)	0(00)
6	I have intention to use ICT in my future research	89(44.5)	87(43.5)	15(7.5)	5(2.5)	4(2)
7	I love to use Computer to study	125(62.5)	42(21)	24(12)	3(1.5)	6(3)
8	Using ICT will make it easier to study	89(44.5)	57(28.5)	38(19)	13(6.5)	3(1.5)
9	Using ICT in teaching/learning will enhance my performance	0(00)	0(00)	4(2)	49(24.5)	147(73.5)
10	Using ICT in learning will enable me to accomplish my task very quickly	3(1.5)	5(2.5)	19(9.5)	62(31)	111(55.5)

As shown in Table 2, it is obvious that respondents have shown positive perception in items 1,2,3,4,5,6,7 and 8. For item 9, zero% agreed that learning computer is a waste of time, 2% was not sure whether learning computer was a waste of time. In item 10, 2% agreed that time

Tertiary Students' Perception Of The Utilization Of Ict For Post-Covid-19 Instruction

Ikpeme, Nyenime Daniel, Okri, John Arikpo & Ugboma, Giftie Emmanuel

spent on learning computer should be better spent on other subjects while 9.5 was not sure. In answering the research question on what are students' perception towards ICT in Tertiary Institutions in Cross River State? From the responses in table 1 it revealed that more than 80% of student in tertiary Institution in Cross River State has a positive perception about ICT. This agrees with the position of Kubiato (2010) which conducted a study on perception and attitudes towards ICT used in science education of Czech university students. The study revealed that an effective use of ICT could have the additional benefit of improving perception and computers skills, which in turn could improve the effectiveness of ICT, thus creating a positive feedback spiral.

Research question 2

To what extent does students' perception affect virtual learning in tertiary institutions in Calabar Education Zone?

To answer this research question, data were derived from responses to items 11 to 20 of Section C of the instrument. Simple percentages were used to present the results as shown on Table 3.

In Table 4 the responses from respondents showed acceptance in items 1,2,3,5,7,9 and 10, above 80% of the respondents agreed to the items. Also, items 4,6,8, and 10 were negatively worded majority of the respondents disagreed with them. Indicating positive perception of students towards ICT in tertiary institution in CRS. In item 2 it was observed that respondents were indifferent in choosing the item. This finding corroborated with Abedalaziz, Jamaluddin, and Chin (2013) showed that students have positive perception toward computer and Internet usage.

Table 4: Students' perception of virtual learning in Tertiary Institutions in Calabar Education Zone

S/N	ITEMS	SA	A	NS	D	SD
1	Virtual learning saves time and effort in research	146(72.5)	55(26.5)	2(1)	0(00)	0(00)
2	Virtual learning creates faster information between teachers and learners	39(19.5)	42(21)	65(32.5)	25(12.5)	29(14.5)
3	I learn more from ICT than I do from books	96(44.5)	76(38.5)	23(11.5)	7(3.5)	4(2)
4	I will not have anything to do virtual learning.	0(00)	0(00)	9(4.5)	101(50.5)	90(45)
5	Virtual learning makes research more interesting	133(61.5)	75(37.5)	2(1)	0(00)	0(00)
6	Virtual learning cannot address the needs of Students	14(6.5)	33(16.5)	12(6)	43(21.5)	99(49.5)

7	I have confidence when attending virtual class	141(70.5)	51(25.5)	6(3)	2(1)	0(00)
8	I am tired of using a computer	0(00)	13(6.5)	23(11.5)	124(62)	40(20)
9	I do concentrate more in virtual class.	89(44.5)	87(43.5)	15(7.5)	4(2)	5(2.5)
10	I would rather attend physical class than virtual class.	0(00)	0(00)	4(2)	31(15.5)	165(82.5)

Teo (2008) found that the teachers and students were more positive about their perception towards computers and intention to use computers than their perceptions of the usefulness of computers and their control of the computers. In the same vein the study did not agree with the view of Babaheidari and Svensson (2014) in another study make a different conclusion that the impact of ICT on learning outcomes is not clear. And Lin, Huang and Chen (2014) pointed out that there is no evidence of any strong impact of the application of ICT in education.

Conclusion and recommendations

Studies and opinions asserted thus far have proven that students at tertiary level of education in Nigeria are taking good advantage of ICTs in their academic pursuit and their attitude and perceptions toward ICT adoption in learning has been positively demonstrated, judging by their involvement in the utilization of ICT gadgets in research and e-learning, especially in this period of Covid-19 pandemic. Despite impending challenges, the benefits which students derived from ICT utilization stands out. It was recommended that there is need to provide the students with enough computers at all levels of education, especially in tertiary institutions where research is a common practice, and for used in teaching-learning activities. This is because availability of ICTs will serve as motivation to teachers and students toward the adoption of these tools in their academic endeavours and would place teachers and students on the pace of 21st century learning which is anchored on skills and competencies. Also, e-learning tools should be made available in schools by the government and all stakeholders should be accessible to support teaching/learning activities and research in tertiary institutions across Cross River State of Nigeria particularly. Improvement should be made on electricity supply to fuel ICT installations, as most ICT projects gets collapse due to intermittent power supply. This is possible through government interventions and support on power projects, provision of power generators as well as necessary budget toward ensuring steady power supply.

References

- Abedalaziz, N., Jamaluddin, S. & Chin, H.L. (2013). Measuring attitudes toward computer and internet usage among postgraduate students in Malaysia. *Turkish Online Journal of Educational Technology*, 12(2), 200-216.

Tertiary Students' Perception Of The Utilization Of Ict For Post-Covid-19 Instruction

Ikpeme, Nyenime Daniel, Okri, John Arikpo & Ugboma, Giftie Emmanuel

- Alturise, P. & Alojaiman, F. (2013). A mixed methods approach to technology acceptance research. *Journal of the Association for Information Systems*, 13(3), 172-187.
- Al-Zaidiyeen, N.J., Lai Mei, L. & Fook, F.S. (2010). Teachers' attitudes and levels of technology use in classrooms: The case of Jordan schools. *International Education Studies*, 3(2), 211-218.
- Babaheidari, S. M. & Svensson, L. (2014). Managing the digitalization of schools: an exploratory study of school principals' and IT managers' perceptions about ICT adoption and usefulness. *Healthcare, and Higher Education*, 23 (1) 106–113.
- Clement, G. & Duinen, R. (2015). DLF e-research network members attend 2015 RDAP Summit Association for Information Science and Technology, 41(6), 39-42.
- Duiner, J. C. (2015). Net Generation or digital natives: Is there a distinct new generation entering university? *Computers and Education* 54(3), 722-732.
- Edmunds, R., Thorpe, M. & Conole, G. (2012). Student attitudes towards and use of ICT in course study, work, and social activity: A technology acceptance model approach. *British Journal of Educational Technology* 43(1), 71-84.
- Egbe, R. (2019). Perceived internet competency and academic performance of junior secondary school students in computer studies. Unpublished B.Ed. research studies submitted to the department of curriculum and teaching, University of Calabar.
- Inyang-Abia, M. E. (2021). *Spatial organization and quantitative techniques in environmental education*. Calabar: Excel Publishers.
- Inyang-Abia, M. E. (2015). *Essentials of educational technology: A handbook for educators and media practitioners*. Calabar: Excel Publishers.
- Inyang-Abia, M. E. (2014). 60th inaugural lecture of the University of Calabar - *Clouds in the Light Kingdom: Reboot the curriculum*. Calabar: University of Calabar Press.
- Kubiatko, M. (2010). Czech university students' attitudes towards ICT used in science education. *Journal of Technology and Information Education* 2(3), 20-25.
- Lin, C. Y., Huang, C. K. & Chen, C. H. (2014). Barriers to the adoption of ICT in teaching Chinese as a foreign language in US universities," *Recall* 26, (1), 100–116.
- Oblinger, P. & Oblinger, S. (2005). Attitudes of undergraduate students to the use of ICT in education. *Social and Behavioural Sciences*, 171, 1128-1134.
- Teo, T. (2009). Evaluating the intention to use technology among student teachers: A structural equation modeling approach. *International Journal of Technology in Teaching and Learning* 5(2), 106-118.
- Woreta, S., Kebed, T. & Zegeye, K. (2013). The digital native's debate: A critical review of the evidence. *British Journal of Educational Technology* 39(5), 775-786.