





INFORMATION AND COMMUNICATION TECHNOLOGY: A STRATEGIC TOOL IN THE INTERNATIONALIZATION OF HIGHER EDUCATION

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ABSTRACT

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The level globalization of education is determined by several factors including the Information and Communication Technology (ICT). This study was designed to examine ICT as a strategic tool in the internationalization of higher education. The study applied the descriptive survey research design. The sample size of the study consisted of 294 respondents (171 male and 123 female lecturers) selected from six tertiary institutions in Delta State, Nigeria using the systematic and simple random sampling techniques. Correlation Coefficient was used to collect data from respondents. Data analysis was done with mean, standard deviation and z-test. Findings from the study revealed that ICT played a crucial role in the internationalization of higher education by fostering the exchange of information and collaboration among different higher institutions, and reducing the stress of processing admission into higher education. It also made teaching and learning easier in higher institutions, enhancing the image of higher institutions across the world and reducing the workloads of staff in higher institutions. Poor budgets/underfunding of tertiary institutions, ill-equipped ICT facilities in tertiary institutions, among others were revealed as challenges facing internationalization of higher education through ICT. No significant difference was found between male and female lecturers' perception of the role of ICT in the internationalization of higher education. Based on the findings, it was recommended that government should expand accessibility of ICT facilities by building ICT centres in all higher education institutions.

Contribution/Originality: This study contributes to the existing literature by examining ICT as a strategic tool in the internationalization of higher education. It is a pioneering study in Nigerian context to talk about internationalization of higher education through ICT.

1. INTRODUCTION

Education has a significant role in countries' development and growth. While every stage of education has significant importance, higher education has distinct importance in training qualified labour force, producing and spreading knowledge, meeting individual and meeting social expectation. The introduction of Information Communication Technology (ICT) into education practices has widened the scope of opportunities in higher education institutions for sustainable development. According to Imasuen, Omorogbe, and Isenalume (2012), ICT has become a key tool and has an essential effect on how we see the environment. Today, it is difficult to undermine the place of ICT in education and the world at large.

Modern day-to-day businesses are managed and supported through telephones, fax machines and computer communication networks. This trend has brought forth among others, contemporary e-commerce, e-banking, e-medicine, e-government, and e-education. Information and communication technology has accelerated, enriched and deepened skills; motivated students and engaged them in learning to help school experiences to work practices; helped in economic viability for tomorrow's worker', contributed to radical changes in school; and strengthened teaching and provided opportunities for connection between the school and the world. In fact, one basic drive of ICT is the fruitful exchange relations in knowledge production and distribution across the globe. Globalization of knowledge today appears to have no boundaries any longer. People of the other parts of the world can reach themselves through various media made available for modern technology.

Some researchers (Ake, 1995; Ogunsola, 2005) viewed globalization as a phenomenon involving the integration of economics, culture, government policies, political movement, and education for societal development. It is the growing interdependence and cooperation among nations of the world. Globalization has collapsed traditional boundaries among nations, religions, and among ethnic divides. As Karacabey, Ozdere, and Bozkus (2019) state, the rapid globalization with the obscure boundaries among countries has affected the world of education.

Thus, education itself is being viewed as a commodity that can be exported or imported to meet social, political and economic demands. As the economy of every nation shifts in response to globalization, so too do education systems. Consequently, the international dimension of higher education is, therefore, becoming increasingly important and at the same time more complex (Ugwueze, 2013). When educators talk about internationalization in higher education, they usually refer to exchange programmes and student mobility. Its increasing importance is the consequences of multiple changes in the environment for higher education which includes the growth of the global information, knowledge-based economy and opening of the international labour market (Knights, 1999).

However, a strategic approval to internationalization is becoming more common around the world though it is still not a reality for all Higher Education Institution (HEIs) (Giorgio & De Wit, 2014). Globally, most educational institutions attach considerable importance to internationalization with Europe at the top of the list followed by North America, the Middle East, Latin America and the Caribbean. The major English speaking nations typically provide most services related to international higher education initiatives and dominate most programs while the Asian, Latin American, middle-income and poor nations of the developing world are the receiving countries because they cannot meet the increasing demand (Kreber, 2009). According to Iroegbu and Maxwell (2017), there is a great difference between developed and developing nations like Nigeria in terms of development and global citizenship education. Cross-border provisions that will help developing countries to internalize has to be accessible, available, affordable, relevant and of acceptable quality. However, these differences can be tackled and reduced by the internationalization of higher education institutions at a global level.

Thus, recent attention has shifted more towards practical application (Gao, Baik, & Arkoudi, 2015) hence the need has been felt to examine ICT as a strategic tool in the internationalization of higher education (HE). According to Nwakudu and Asagba (2013), ICT is a veritable tool that needs to embrace all level of our educational system, especially at the higher education level. Today, the world has become a global village as a result of advancement in ICT. The introduction of ICT has brought about modern and simpler ways of doing things especially as it has to do with interaction with one another, buying and selling, banking operation, entertainment, games, health care delivery and a host of others.

1.1. Statement of Problem

The world of higher education is changing, for many reasons. The key factors of change are the development of advanced communication and technological services. Countries like Singapore, the United States, Canada, Japan and most European nations have embraced and applied ICT to their operations. This has resulted in drastic changes in their growth, better governance, increased democratic space, increased productivity, administrative effectiveness

and cost savings (Adamali, Coffey, & Safdar, 2006). Unfortunately, driven by globalization, accelerating shift to high- technology and information technology economics, and pressure to teach and train knowledgeable, skilled and competitive professionals, tertiary education in Nigeria face a huge challenge to increased accessibility, effectiveness and efficiency.

It cannot be disputed that Nigeria is in need of internationalization of higher education. The impact of the Nigerian Universities has not been felt at the international scene, as regards the practice of higher education. Unlike the developed countries of Europe, America, Australia and others, that have taken the lead and centre stage in the internationalization of higher education; Nigeria is yet to find her due place in the internationalization of higher education. However, the value of our higher education system lies in its ability to meet up with its mandate in terms of knowledge production and manpower development. This can only be achieved when we exploit better ways of teaching, learning and technology which is impossible without ICT and collaboration with other institutions around the world. Thus, with this current expansion in the globalization of knowledge production and development, the question is; will the Nigerian higher education be ready to move with the rest of the world? The challenge is immense for the developing nations in general and Nigeria in particular. The problem statement of the study, therefore, is to ascertain if ICT can be considered as a strong strategy in the internationalization of higher education in Nigeria.

1.2. Objectives of the Study & Research Questions

This study has three objectives:

1. To investigate the roles of ICT in enhancing the internationalization of higher education.
2. To determine the constraints faced in the internationalization of higher education.
3. To determine the strategies for improving internationalization of higher education through ICT.

The following research questions guided this study:

1. What are the roles of ICT in enhancing the internationalization of higher education?
2. What are the challenges faced in the internationalization of higher education through ICT?
3. What are the strategies for improving internationalization of higher education through ICT?

1.3. Hypothesis

The following hypothesis guided this study:

There is no significant difference between the mean scores of male and female lecturers in the role of ICT in enhancing the internationalization of higher education.

2. LITERATURE REVIEW

2.1. Concept of ICT, Higher Education and Internationalization of Higher Education

ICT is a goal-oriented innovation of all professions as no sector can do without it (Kinanee, Fakorede, and Ubochi, 2013). According to UNESCO (2002); Bandele (2006); Nzewi (2009), ICT is a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavour. They suggested that ICT is simply about ease of sharing and having access to data. It is called the superhighway from which information is passed and shared by the people around the world. Furthermore, ICT in education is the mode of education that uses information and communications technology to support, enhance, and optimize the delivery of information. It is a broad field that encompasses computer, telephone, cellular networks, satellite, communication, broadcasting media and other forms of communication (Fleming, Motamedi, & May 2007; Linways Team, 2017).

Therefore, ICT is now a key tool and it has a revolutionary impact on how we see the world and how we live. Today, it is difficult to weaken ICT's position in education and the world at large.

2.2. Concept of Higher Education

Higher education is education offered after secondary education in universities, colleges of education, polytechnics and mono-technics including those institutions offering correspondence courses. In the Nigerian context, it is known as the tertiary education system or the third tier of the twenty-first century higher educational system (Bourner & Flower, 2001) having six learning aims as follows:

1. Disseminate knowledge.
2. Develop the capacity to use ideas and information.
3. Develop the students' idea to test ideas and evidence.
4. Develop the students' idea to generate ideas and evidence.
5. Facilitate the personal development of students.
6. Develop the capacity of students to plan and manage their own learning.

Higher institutions occupy a very important position in every society. They are expected to play a critical role in promoting sustainable economic, social and cultural development. They are the major drivers of economic competitiveness in an increasingly knowledge-driven global economy. In Nigeria, the increased demand for higher education has resulted in diverse service providers and delivery modes across borders. The service providers are classified into two categories: Traditional Higher Education institutions and New or Alternative Providers (Iroegbu & Maxwell, 2017):

- a. Traditional Higher Education Institutions: These include public non-profit, private non-profit and private for-profit institutions. They are normally oriented to teaching, research and service/commitment to society. In Nigeria, the National Universities Commission (NUC) ensures that these institutions are licensed and accredited thereby authenticating their legitimacy and the qualifications provided. There is also an increase in low-quality providers who are not licensed or accredited. The NUC recently clamped down on these 'degree mills' institutions operating web-based companies that are selling certificates based on 'life experiences' and not delivering any education programs.
- b. New or Alternative Providers: This category focuses on teaching and delivery of education services. They are diverse in nature and are usually for-profit purposes. They are more oriented to delivering education and training programs than undertaking research and scholarly activities. They include campuses abroad (franchising), the electronic delivery of higher education (e-learning) and other for-profit providers. However, of paramount importance to any nation is the quality of higher education produced and delivered nationally and internationally to all parts of the world.

2.3. The Concept of Internationalization of Higher Education

For decades, the term internationalization has been used in political science and governmental relations, but its use in the education field soared since the early 1980s although, as in some countries, international education and international cooperation have been the preferred terms (Knight, 1994). Knight. (1994) gave his own definition of internationalization of higher education as a process of integrating an international or intercultural aspect into teaching, research and service functions of internationalization.

Khorsandi (2014) defined internationalization of higher education as a process of commercializing research and post-secondary education, and international competition for the recruitment of foreign students from wealthy and privileged countries in order to generate revenue, secure national projects, and build an international reputation. One fact is clear from the definitions given above that internationalization of higher education is a process. An on-going course of action and the effort of internationalization are continuous.

According to Onwuekweikpe (2013), it is thus obvious that internationalization is on-going, not an activity, it is born out of the quest to meet the need of making the world a global networking system and involves elements from external and local contexts. In fact, the scope of internationalization of higher education has taken on various

degrees of interests and areas of focus that range from recruitment of international students, development of international branch campuses, students, staff and scholars exchange programs, internationalization of the curriculum, promotion of foreign language programs and access to cross-cultural understanding and research activities (Khorsandi, 2014; Tahira & Masha, 2015).

2.4. An Overview of Internationalization of Higher Education System through ICT Usage

ICT is imperative in all facets of human endeavour for global civilization and development. Certainly, the field of education has been affected by ICT's penetrating influence worldwide and particularly in developing countries. ICT has had a very profound and ground-breaking effect on teaching, learning and research quality and quantity in educational institutions. According to Chen and Kee (2005), ICT is the backbone of the knowledge economy and has been recognized in recent years as an effective tool for promoting economic growth and sustainable development. Stressing the importance of the use of ICT in institutions of learning, Olorunsola (2007) posited that educational needs are met through it. Now messages can be communicated through the e-mail, telex or telephone, particularly, the mobile ones. The pervasiveness of ICT has brought about rapid technological, social, political and economic transformation which has eventuated in a network of internal and international societies organized around it. In fact, ICT is an indispensable part of educational administration as its application makes institutions more efficient and productive thereby engineering a variety of tools to enhance and facilitate teachers' pedagogical activities (Akpan & Bassey, 2011; Bransford, 1999; David, 2005; Yusuf, 2005).

Furthermore, according to Tahira and Masha (2015), western universities are establishing powerful international networks and associations to mobilize aptitude policies and global research for enhancing investment and measuring impact. Moreover, they are using ICTs as important and influential tools for increasing public access to relevant information for aiding talent recruitment and retention (Edmonds, 2012). Thus, access through ICT is provided to higher education in countries where local institutions cannot meet the demands. Besides speed, cost-saving transcendence of time and distance, and opportunities for cross-cultural learning, effective ICT implementation enables lecturers to be more connected with one another to exchange ideas, share resources and improve teaching practices and strengthens ties with institutions abroad (Imasuen et al., 2012; Masha & Karmela, 2009).

However, the greatest integration of ICT into the internationalization of higher education occurs when process and content are addressed simultaneously. That is, both lecturers and students are more likely to enhance their learning if they learn to use ICT at the same time (Utoware, 2011). According to Hrehova and Teplika (2019), it is mandatory for all lecturers and all students to use E-learning and it is the duty of all the professors to continuously improve the quality and the scope of e-learning integration. Unfortunately, most of the lecturers in Nigerian Universities, colleges of education and polytechnics are not competent in the use or integration of ICT in their instruction. Majority of lecturers who had taken tenured job were taught without ICT and they have not developed competence in the use of ICT, thus they cannot model good use of technology (Idowu, Adagunodo, & Popoola, 2003).

Major and Agih (2013) also posited that institutions of higher learning across Nigeria cannot effectively collaborate with those around the world in the areas of research and development. The general lack of these infrastructure (online service delivery) that is the use of electronic formats in the administration process, school programs and lesson delivery could slow the extent to which institutions of higher learning is involved in an academic partnership. This situation is further complicated by the lack of provision and maintenance of ICT devices. In fact, internationalization is happening at a time when the Nigerian higher education system is in great turbulence, signified with inadequate infrastructure, problems of accreditation, strike, insecurity, corruption and lack of good governance, and also poor electricity supply that is rendering higher institutions' ICT systems dysfunctional (Fatunde, 2008; Iroegbu & Maxwell, 2017; Salami, 2001; Ugwueze, 2013).

Internationalization requires a huge investment of funds in research infrastructure and capacity building (Bassey, Akuegwe, & Udida, 2007; Imasuen et al., 2012; Major & Agih, 2013). Some other emerging trends and challenges in internationalization are cited as follow: (Dale, 2005; Dickey, 2003; Gottlieb & Skovdal, 2010; Hernández, Chalela, Arias, & Arias, 2017).

- i. *Ubiquitous learning*: With the emergence of increasingly robust connectivity infrastructure and cheaper computers, school systems around the world are developing the ability to provide learning opportunities to students “anytime, anywhere”.
- ii. *One-to-One Computing*: The trend in classrooms around the world is to provide an information appliance to every learner and create learning environments that assume universal access to technology.
- iii. *Teacher managers/mentors*: The role of the teacher in the classroom is being transformed from that of the font of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of the designated 45 minutes’ instruction period.
- iv. *Coordination across borders*: Administrators, teachers, researchers etc. distributed around the globe need to coordinate everything from programme and course activities, the technical set-up for a particular web conference, students’ collaboration platforms, contract and collaboration agreements etc. The smooth coordination of all these activities relies heavily on ICTs and thus coordination is a major challenge.

Furthermore, the higher education system has developed a better base, resulting from integrating ICT in educational affairs. However, there is a need for improvement. Nwakudu and Asagba’s (2013) findings revealed that the strategies for improving internationalization of higher education through ICT include: collaboration with major telecommunication providers all over the world, building states of art ICT centres with high interconnectivity in our higher institutions of learning by government, mandatory training for all employees in higher institutions of learning on ICT application/usage to boost their educational awareness and uninterruptable power supply for proper use of ICT in higher institutions (Fatunde, 2008) should be assured.

However, to get the highest level implies that higher institutions of learning will not only have to modernize the technological tools, but also have to change the teaching models: the teachers’ role, issues regarding classroom organization, the teaching and learning processes, the interaction mechanism (Hrehova & Teplika, 2019). Besides, HEIs will also have to use effective promotion strategies for building international trust and publicizing their programs, activities, excellence and uniqueness through printed or ICT tools such as online media (Rosyidah, Matin, & Rosyidi, 2020).

3. METHODOLOGY

3.1. Conceptual Framework

The conceptual framework of this study is based on the Lankshear (1997) depiction of the three dimensions of digital literacy: The operational, cultural and critical dimensions. The operational dimension deals with the technical knowledge of the use of ICT. The cultural dimension involves the appropriate use of ICT for specific needs and cultural contexts. On the other hand, the critical dimension deals with the production, reflection and the value placed on ICT and its effect on society. All aspects were seen to be essential levels of practice in the use of ICT that lecturers and students needed to develop in order to be able to participate fully in work and society.

However, the Nigerian system of education had no planned positive growth impact on information creation and dissemination through ICT. Studies have shown that the majority of students in higher educational institutions in Nigeria are not ICT compliant (Akubuilu, 2007; Asogwa, 2007). This makes it difficult for the use of the electronic format in the administrative process, school programmes and lesson delivery within and across international borders.

Thus, the conceptual framework of this work is focused on the fact that the students, lecturers, academic community and the entire globe stand at an advantage when ICT application/usage is properly internationalized in the higher education system because it will enable them to engage in exciting collaborative learning activities both in the classroom and in different countries with different cultures. It will also lead to the sharing of ideas and Information as a learning community without much difficulty.

3.2. Methods

The study adopted a descriptive survey design to examine the use of Information and Communication Technology in the internationalization of higher education. This design is considered necessary as the researcher collected data from a cross-section of lecturers across different categories of higher institutions in the Delta State, collated, analysed and described the results as they occurred in their original form without alteration.

The population for this study comprised all lecturers in all the higher institutions in Delta State. The total number of lecturers in the higher institutions in Delta State is estimated to 4,550 lecturers. The sample for the study consisted of 300 respondents (174 male and 126 female lecturers) randomly selected from six (6) tertiary institutions in Delta State. The sampling techniques used were stratified and simple random sampling techniques. The stratified sampling was used to draw the tertiary institutions while the simple random sampling through the ballot method was used to select the sample respondents randomly from each of the sampled institutions. In each of the institution, fifty (50) lecturers were selected randomly. A self-structured and contently validated questionnaire tagged "Information and Communication Technology for the Internationalization of Higher Education Questionnaire" (ICTIOHEQ) was used to collect data from the respondents. The reliability administration of the instrument was established 0.92 coefficient using the test-retest method whose result was correlated through the Pearson Product Moment Correlation Coefficient.

The instrument was administered to the lecturers in all the sampled institutions. Of the 300 copies of the questionnaires administered, only 294 (171 males and 123 females) were retrieved giving a retrieval rate of ninety-eight per cent (98%). The data in these questionnaires were analyzed using mean, standard deviation and z-test. The mean benchmark of 2.50 was used as criterion mean for acceptance and rejection of any questionnaire items while the z-test was used to test the stated null hypothesis at 0.05 alpha level.

4. RESULT

Research Question 1: What are the roles of ICT in enhancing the internationalization of higher education?

Table-1. Role of ICT in enhancing the Internationalization of higher education.

S/N	Role of ICT in the enhancement of Internationalization of Higher Education	Male Lecturers		Female Lecturers		Total mean	Decision
		\bar{x}	SD	\bar{x}	SD		
1.	ICT makes teaching and learning easy in higher institutions.	3.4	12.85	2.58	10.90	2.99	Agreed
2.	ICT reduces the stress of processing admission into higher education.	3.23	12.87	3.01	10.86	3.12	Agreed
3.	ICT fosters the exchange of information and collaboration among different higher institutions.	3.33	12.86	3.45	10.82	3.39	Agreed
4.	ICT increases the workloads of staff in higher institutions	1.12	13.03	1.56	11.00	1.34	Disagreed
5.	ICT increases the cost of acquiring an education in the country.	2.48	12.92	2.67	10.89	2.56	Agreed
6.	ICT increases the burden of students' learning in higher education.	2.25	12.94	2.51	10.87	2.38	Disagreed
7.	ICT enhances the image of higher institutions across the world.	3.11	12.88	2.86	10.88	2.985	Agreed
8.	ICT reduces the research effort and ability of most lecturers in higher institutions.	1.49	13.00	1.76	10.98	1.62	Disagreed

Table 1 shows the role of ICT in enhancing the internationalization of higher education. From the analysis above, it was found that mean value in item 1, 2, 3, 5, and 7 (2.99, 3.12, 3.39, 2.56, & 2.99) agreed were higher than the criterion mean (2.50). This shows that the role of ICT in the internationalization of higher education hierarchical order of the mean value above is that ICT fosters the exchange of information and collaboration among different higher institutions (3.39), reduces the stress of processing admission into higher education (3.12), makes teaching and learning easy in higher institutions (2.99), enhances the image of higher institutions across the world (2.985) and increases the cost of acquiring education in the country (2.56).

Whereas item 4, 6, and 7 (1.34, 2.38 & 1.62) which were lower than the criterion mean value (2.50) were rejected as having any relation to ICT in the internationalization of higher education.

Research Question 2: What are the challenges faced in the internationalization of higher education through ICT?

Table-2. Mean analysis of the challenges faced in Internationalization of higher education through ICT.

S/N	Challenges faced in the internationalization of in higher education through ICT	Male Lecturers		Female Lecturers		Total mean	Decision
		\bar{x}	SD	\bar{x}	SD		
1.	Poor/under funding of tertiary institutions	3.31	12.86	3.11	10.85	3.21	Agreed
2.	Ill-equipped ICT facilities in tertiary institutions.	2.67	12.91	3.42	10.83	3.05	Agreed
3.	Poor ICT skills among higher education staff and students	1.49	13.00	2.86	10.88	2.18	Disagreed
4.	Lack of credit transfer facilities to institutions.	2.51	12.92	2.67	10.89	2.59	Agreed
5.	Low research capability higher institution staff using ICT facilities.	1.76	12.98	1.12	11.03	1.44	Disagreed
6.	Poor maintenance culture.	2.25	12.94	3.33	10.84	2.79	Agreed
7.	Lack of trained manpower.	2.58	12.92	2.48	10.91	2.53	Agreed
8.	Discordance among institutional framework.	1.56	12.995	3.23	10.84	2.4	Disagreed

Table-3. Mean analysis of the strategies for improving internationalization in higher education through ICT.

S/N	Strategies for improving the internationalization of in higher education through ICT	Male Lecturers		Female Lecturers		Total mean	Decision
		\bar{x}	SD	\bar{x}	SD		
1.	Provision of current and functional ICT facilities in tertiary institutions.	2.58	12.92	2.94	10.86	2.76	Agreed
2.	Compulsory and regular training and re-training of tertiary institutions staff on the application and usage of ICT facilities for educational advancement.	2.67	12.91	2.67	10.89	2.67	Agreed
3.	The building of standard ICT centres with internet connectivity in tertiary institutions.	3.11	12.88	3.42	10.83	3.3	Agreed
4.	Recruitment of ICT specialists in higher institutions.	3.23	12.87	2.86	10.88	3.05	Agreed
5.	Effective collaboration with the telecommunication provider all over the world.	2.48	12.92	2.51	12.92	2.495	Disagreed
6.	Provision of standard and regular power supply in the higher institution for effective usage of ICT facilities.	3.23	10.84	3.11	10.85	3.17	Agreed
7.	Provision of free ICT/ internet access (Wi-Fi) for high institution's staff and students all over the world.	3.33	12.86	3.45	10.82	3.39	Agreed
8.	Subsidizing the cost of ICT facilities, equipment and internet services for higher institutions all over the world.	2.50	14.46	2.48	10.91	2.49	Disagreed

Table 2 shows the challenges faced in the internationalization of higher education through ICT. The data analysis shows that the mean value of item 1, 2, 4, 6 & 7 (3.21, 3.05, 2.59, 2.79 & 2.53) respectively was higher than the criterion mean value (2.50). Therefore, they were agreed as challenges facing internationalization of higher education through ICT while the mean value of item 3, 5 & 8 (2.18, 1.44 & 2.4) respectively was lower than the

criterion mean value (2.50) and was disagreed as challenges facing the Internationalization of higher education through ICT. This indicated that the challenges faced in Internationalization of higher education through ICT in hierarchical order are poor/underfunding of tertiary institutions (3.21), ill-equipped ICT facilities in tertiary institutions (3.05), poor maintenance culture (2.79), lack of credit transfer facilities to institutions (2.59) and lack of trained manpower (2.53).

Research Question 3: What are the strategies for improving internationalization of higher education through ICT?

Table 3 shows the strategies for improving internationalization of higher education through ICT. From the mean analysis in the table, it was revealed that the mean calculated value in item 1, 2, 3, 4, 6, & 7 (2.76, 2.67, 3.3, 3.05, 3.17 & 3.39) agreed respectively were higher than the criterion mean (2.50). This means that the strategies that can be used to improve internationalization of higher education through ICT are in their order of hierarchy are the provision of free ICT/ internet access (Wi-Fi) for high institution's staff and students all over the world (3.39), the building of standard ICT centres with internet connectivity in tertiary institutions (3.3), provision of standard and regular power supply in the higher institution for effective usage of ICT facilities (3.17), recruitment of ICT specialists in higher institutions (3.05), provision of current and functional ICT facilities in tertiary institutions (3.76) and compulsory and regular training and re-training of tertiary institutions staff on the application and usage of ICT facilities for educational advancement (3.67) respectively.

4.1. Test of Hypothesis

Ho 1: There is no significant difference between the mean scores of male and female lecturers in the role of ICT in enhancing the internationalization of higher education.

Table-4. Z-test of difference between the mean scores of male and female lecturers in the role of ICT in enhancing the internationalization of higher education.

Gender	N	\bar{x}	SD	z-cal	z-crit.	df	Alpha	Decision
Male lecturers	171	2.551	12.92	0.001	1.96	292	0.05	Accepted
Female lecturers	123	2.55	10.91					

Table 4 shows the z-test of the difference between the mean scores of male and female lecturers in the role of ICT in enhancing the internationalization of higher education. From the z-test analysis, it was found that the z-calculated value (0.001) is less than the z-critical value (1.96) under the degree of freedom measured 0.05 alpha level of significance. Thus, the null hypothesis stated is accepted. This indicated that there is no significant difference in the mean scores of male and female lecturers on the role of ICT in the internationalization of higher education in Delta State.

5. DISCUSSION OF FINDINGS

This study focussed on ICT as a strategic tool for the internationalization of higher education. 294 lecturers (171 male and 123 female lecturers) from six tertiary institutions in Delta State participated in the study. Findings from the study from Table 1 revealed that the role of ICT in the internationalization of higher institutions is to foster the exchange of information and collaboration among different higher institutions, reduces the stress of processing admission into higher education, makes teaching and learning easy in higher institutions, enhances the image of higher institutions across the world and reduces the workloads of staff in higher institutions. This finding corroborated the finding of Nwakudu and Asagba (2013) which revealed that ICT played a significant role in enhancing linkages and exchange as well as collaboration with higher education institutions, facilitate speedy dissemination of research findings all over the world, make the presentation of conference papers possible from any part of the world and also enhance admission process/study programme for international students. The above

finding is also in line with Yusuf (2005) who posited in a study that the use of ICTs provide teachers and students multimedia presence in the classroom and increase their opportunities to collaborate and network with colleagues. Similarly, the study also supported the Nwabueze (2011) and Akpan and Bassey (2011) view which stated that the ICT facilities/internet projects enable people to engage in exciting collaborative learning activities both in classrooms and in different countries with different cultures. The finding of the study from Table 2 revealed that the challenges facing Internationalization of higher education through ICT are poor/underfunding of tertiary institutions, ill-equipped ICT facilities in tertiary institutions, poor maintenance culture, lack of credit transfer facilities to institutions and lack of trained manpower. This finding support (Onwuekweikpe, 2013) findings which revealed lack of credit transfer facilities, a decline in funding and over-dependence on external funding scheme, weak institutional support structures among others as challenges facing the involvement of Nigerian Universities in the internationalization of higher education. Jowi (2009) also found in his study that internationalization of higher education is influenced by the national level through a variety of ways including funding, policy, programme and regulatory framework. Finding of the study in Table 3 revealed the provision of free ICT/ internet access (Wi-Fi) for high institution's staff and students all over the world, the building of standard ICT centres with internet connectivity in tertiary institutions, provision of standard and regular power supply in the higher institution for effective usage of ICT facilities, recruitment of ICT specialists in higher institutions, provision of current and functional ICT facilities in tertiary institutions and compulsory and regular training and re-training of tertiary institutions staff on the application and usage of ICT facilities for educational advancement as strategies for enhancing the internationalization of higher education through ICT. This finding is in line with Nwakudu and Asagba (2013) and Nwosu and Chijioke (2005) who revealed in their different studies that teleconference incorporates the various ways people can communicate with one another irrespective of the distance. The finding which showed the provision of free ICT/ internet access (Wi-Fi) for academic faculty members and students all over the world as a key strategy is in support of Nwosu and Chijioke (2005) and Bendenlier and Zawacki-Richter (2015) opinion which postulated that the use of computers in learning activities makes it possible for students to access information and ideas in interactive forms an interchange with their peers irrespective of their locations thereby internalizing the educational system. The finding from the study in Table 4 five revealed no significant difference mean score of male and female lecturers on the role of ICT in the internationalization of higher education.

6. CONCLUSION

Educational growth and advancement depend upon a large extent on how far it is being globalized and or known in the global economy. Hence, the need for internationalization of educational services is inevitable, particularly in the higher education sector. To effectively measure in the internationalization of higher education, the role of ICT cannot be overestimated. This study has shown that ICT is an effective tool for the internationalization of higher education in Delta State and Nigeria in general. ICT as a tool for internationalization of higher education fosters the exchange of information and collaboration among different higher institutions, reduces the stress of processing admission into higher education especially among international students, makes teaching and learning easy in higher institutions, promotes lecturers and students' research ability and level, enhances the image of higher institutions across the world and reducing the workloads of staff in higher institutions. From the above prominent roles of ICT in the internationalization of higher education, it is therefore important that it should be accorded the needed priority against the current low level of availability of ICT facilities, literacy and its usage in our higher institutions.

7. RECOMMENDATION

Based on the findings and conclusions drawn, the following recommendations were made:

1. The government should expand access base to ICT facilities by building ICT centres in all our higher institutions.
2. The cost of purchase and services of ICT facilities, equipment and services should be reduced or subsidized for higher institutions to enable their effective usage.
3. Higher institutions management should provide ICT and internet connectivity in their various institutions and make their access through Wi-Fi free of charge for their staff and students to encourage its effective usage and quality research among the staff and students.
4. Information and Communication Technologies should be used to enhance linkage as well as exchange programme among higher institutions all over the world.

8. LIMITATIONS

There are some limitations to the study that need to be addressed. This indicates limited generalizability of results and also hints at the need for further research. This includes lack of detailed report of the structure/scope of operation of internationalization of higher education in Nigeria. In addition, the study examined ICT as an effective tool for internationalization of higher education. Hence, there should be further studies on cross-border education and the structure of internationalization of higher education in Nigeria.

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