A Comparative Analysis of E-Readiness Assessment in Nigerian Private Universities and Its Impact on Educational Development

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Abstract

This paper presents a study conducted to investigate the impact of e-readiness on educational development among undergraduate students of the selected private universities in Nigeria using a comparative analysis. The Universities surveyed includes: JABU, LCU, ACU and OUI. The study employed both descriptive and parametric statistical analysis through the use of cross tabulation, bivariate analysis and chi square respectively to establish the above relationship. It also used Cronbach's alpha coefficient to test for validity and reliability of the instrument employed. The results revealed that not all the undergraduates had easy access to computer and internet facilities. This is as a result of infrastructural deficiencies prevalence in the universities under consideration and as such depicts a negative impact on educational development among the undergraduates surveyed and Nigerian higher institution students at large. The result also showed that gender has a significant positive effect ($r = 0.352$; $p< 0.001$) on accessibility to internet. From the foregoing the study recommends that there is need for gender balance which can be achieved by gender sensitivity strategies so as to promote pedagogical use of internet. The study further recommends that stake holders like; government, proprietors, and non-governmental organizations(NGO) should invest more on the provision of infrastructural facilities and capacities in order to create opportunity for educational development and enhance the e-readiness of the private universities at large for sustainable development in Nigeria.

Keywords: Post-secondary education, Country–specific developments, Gender studies, Pedagogical issues; Evaluation methodologies

1.0. Introduction

The increasing use of Internet has experienced an explosion over the years and is responsible for enormous changes in the pedagogies of teaching leading to a more interactive learning process. Information and Communication Technology (ICT) came as a result of advancement in internet and is considered as a new communication technology now in use to improve and replace the existing old technologies of information delivery and exchange. They have become increasingly significant as tools to accelerate social, economic and educational development. For instance, the topic of e – readiness is not a phenomenon that links the use of ICT and access to the Internet alone, but also to usage and benefits of ICT as observed by Fuchs and Horak (2006).

In particular, UNESCO (2002) pinpoints that ICTs are seen as pedals of educational system and change. However, the significant role of ICT as strategies for development is essential to the running of universities in developed and developing economies as well. In the same vein, several efforts at institutionalizing ICT for development in universities in Nigeria have been geared towards public institutions with less emphasis on private institutions because of the nature of ownership and policy. This could be argued from the standpoint that the resources required for institutionalizing ICT in our various institutions are available if and only if it can be well harnessed. According to Colle (2004), e-readiness refers to relevant content, human resources, practical research, training capacity couple with the ability to sustain these utilities in the process of assessing these indicators (resources).

It is particularly noticeable in the definition given by Colle (2004) which posited that e-readiness is a concept usually applied to nations and it refers to a nation's inventory of ICT resources for operating in a modern information society. He further posited that e –readiness of a nation among others includes; service provider, networking facilities, favorable ICT policies, appropriate human resources and telecommunications competition e.t.c.It is pertinent that Universities all over the world have a very critical role to play in every country's development effort with theoretical capacities to be the living force that could spearhead the use of internet in their respective countries and even outside their national borders. Any initiatives being undertaking by the national government as a whole to improve ICTs that is by discovering the capacity of the universities.

To buttress the forgoing, it is important to state that the evolution of Internet cannot be compared to the existing technologies that were before it. For instance, Molosi (2001) remarked that the television revolution took 13

years to reach 30 million viewers and internet achieved this mark in only 4 years. There is no doubt that the rate of deployment of the new technologies in developing countries is low; especially those of the sub-Saharan Africa. This is particularly noticeable in the area of telecommunication and computing infrastructure such as telephones, power supplies development of appropriate electronic network e.t.c. as opined by Naidro and Schutte (1999). Today the growth in telecommunication infrastructure has led to increase in Internet connectivity.

Despite the foregoing, most universities in developing and under developing countries showed a low level of e-readiness. This is in terms of adequately trained human resources for effective and efficient deployment of internet. In addition, there had been the problem of deficiency in practical resource to mention a few especially in the private universities which is the major thrust of this study. Hence, this paper seeks to investigate the impact of e-readiness on educational development of our case study.

The focus of this study is to identify the extent to which e-readiness in the selected private university has imparted on educational development in Nigeria. However, the specific objectives of this study are as stated:
- to ascertain the influence of e-readiness on educational development.
- to measure the adequacy of infrastructural facilities in these universities.

The motivation for this study is however to address the fact that, in spite of the growing adoption of and demand for ICT in education, there is very little systematic research and hard data about how ICT is actually used in the universities and even less about its impact on educational outcomes, social behaviour, or employment (human resources) and students productivity.

Sequel to the above, the study presents its structure as follows: Section one is the introductory aspect which encompasses the background to the study, objectives of the study and justification of the study. This is followed by a copious conceptual framework and theoretical perspective. Section three pinpoints the sources of data, technique to be used and research methodology. While section four analyzes and discusses the empirical results and section five concludes and suggests policy as recommendation.

2.0. Operational Definition of E-readiness for Conceptual Purposes And problems of Infusion

The essence of the conceptual framework is to ensure internal consistency in the implementation of measurement strategy. This pathway provides the basis for addressing opportunity- driven assessment for or on the ground application of ICT with specific reference to the type of e-readiness opportunity in a particular domain. To buttress the above, Harvard University press (HUCFID, 2005) describes an e-ready society as one that has the necessary physical infrastructure (high bandwidth, reliability, and affordable prices), has integrated current ICTs throughout business (commerce, local ICT sector), communities (local content, organizations online, ICTs used in everyday life, ICTs taught in schools) and the government (e-government).

McConnell (2001) also recognized the following attributes with the e-readiness assistant.
i. Connectivity:- how are networks easy and affordable to access and to use.
ii. E-leadership:- how is the readiness in terms of a nations priority.
iii. Information security: - how can the processing and storage of networked information be trusted
iv. Human capital:- how are the right people available to support e-business and to build a knowledge based society.
v. E-business ultimate:- low easy is it to do e-business today.
vi. E-readiness characteristics?

As a matter of fact, the above suggest that the results from e-readiness assessment can act as a starting point in a participating planning and dialogue because it tends to provide information or resources existing at the time to policy makers and other organization who want to use e-readiness assessment like the one the study is undergoing to assess e-readiness among some selected private universities in Nigeria. No wonder Budhiraja and Sachdeva (2002) argued that e-readiness assessment will enable an institution, policy maker or government to make better accountability, validation amongst objectives set, healthy competition and help in preparing a national action plan.

Our conceptual framework is derived from a basic definition of e-readiness as a function of the ability to pursue value and create opportunities in some selected private universities in Nigeria. In the past studies, the foundation for a rough rule of thumb - a set of criteria which these current study would adopt, among others includes;

i. Factors essential to assess conditions related to enable physical connectivity.
ii. Factors pertaining to capacities that are necessary but not sufficient (pertaining to social, economic and related policy conditions) for e-readiness and

iii.   Variables that provide final proof of e-readiness mobilization namely capturing the convergence of necessary and sufficient bases for realizing a particular value creation opportunity as displayed in Figure 1.

2.1.   Stylized domain of e-readiness' Face - model

Ability to pursue value and create opportunities such as: essential factors to access conditions which relates to physical connectivity; factors pertaining to capacities; and factors that provides final proof of e-readiness mobilization for realizing a particular value creation opportunity as depicted in the Face – model in Figure 1 below are the main drive for developing countries to adopt alternative technologies in place of limited current technologies as observed by Bridges.org (2005).
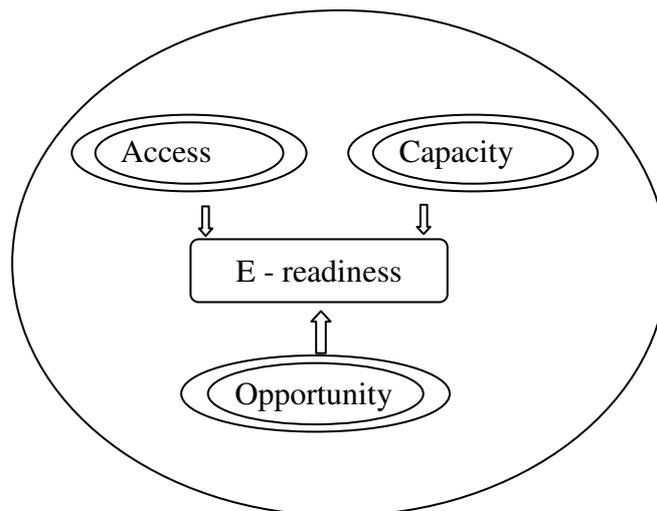

Figure 1: Face – model of e–readiness assessment

Furthermore, it should be noted that web-based education in the form of online mobile and distance education requires some sort of reliable computer networks, broadband connectivity, fibre-optic, backbones to interconnect offices, departments and centres to the public Internet via the Campus Area Network (CAN). In this regard, there will not be problem of low students enrolment and inadequate funding especially on the part of the private universities which are basically caused by inadequate ICT infrastructure. And hence, they have led to the immediate challenges as stipulated in the below:

i.   **High cost to the consumers.** This is in the area of ICT series. When this infrastructures are not adequately provided it makes students, staffs and researchers to visit business cyber cafes to use the internet which is very expensive. The cost of browsing in these business cafes is averagely between ₦150 - ₦200 (in Naira) per hour which is equivalent to $ 1.0-1.2 USD. This in turn makes students to browse only when it is absolutely significant.

ii.   **High cost of ownership.** This is in the area of ensuring high quality of education. This is because the government cannot shoulder this responsibility alone. Hence, there is need for stakeholders like, private entrepreneurship, churches and big time NGOs to venture into the ownership of such institutions. However, despite the foregoing, universities are being faced with funding problems thereby making some good effort channeled at this to be futile.

iii.   **Inadequate power supply.** This is in terms of irregular supply of electrical power. This has hampered the Nigerian economy and hindered the progress of research carried out by institutes, groups and individuals in the country especially in the universities. It would be worthless to embark on an extensive ICT project within a university without solving the power problem first. However, some identified alternatives sources are; standby generators batteries and solar panels. Despite the above named alternatives, the question that now comes to mind is that, to what extent has such institution been able to expand her financial ability in order to be able to provide electric power to all the campus? This is vital because it is going to affect the level of e- readiness in such a university at large that is, when power is rarely supplied, which in turn mars the admirable goals of transforming education with ICT and thereby dampens the expected educational development and economic growth.

From the above conceptual and theoretical foundation it could be deduced that, the e-readiness of higher institutions can be ascertained if and only if such institutions are characterized with access, capacities and

opportunities provided by the use of ICT. This will take the study to the next section that is aimed to test empirically if the selected private university is e-ready from the hypothetical situation that is prevalence in the university. This will help to confirm if theories are consistent with empirical findings or not.

3.0. Methodology

This study adopted a experimental and survey method. This is in support of Shoemaker et al (2004) who posited that a descriptive study is concerned with conditions or relationships that exist, opinion that are held, processes that are going on, effects that are evident or trends that are developing. It is primarily concerned with the present although it often considers the past events and influences as they relate to current conditions.

Sequel to the above, questionnaires were administered because they provide access to geographically dispersed samples at low cost; that is a large population can be surveyed relatively cheaply. Also, it provides a high degree of anonymity and respondents have time to think about their answers and consult other sources. The study adopted simple random sampling to administer this questionnaire thereby avoiding any selection error or bias in measuring or obtaining our sample. Responses of the students on the assessment of e-readiness were sampled with a view to establish the extent of e-readiness in the selected private universities and also to pinpoint if the extent of e-readiness has any relationship with educational development at large.

3.1.   Method and Materials

The study were carried out in four private universities in the South-West Nigeria. The universities are Joseph Ayo Babalola University, Ikeji – Arakeji, (JABU), Oduduwa University, Ipetumodu (OUI), Lead City University, Ibadan (LCU) and Ajayi Crowder University, Oyo (ACU). JABU and OUI are located in Osun State while LCU and ACU are located in Oyo State, Nigeria. The questionnaires were administered in 2010/2011 academic session to assess the extent of e-readiness among these private Universities and its impact on educational development.

Statistical procedures play an integral part in determining what, if any patterns among the variables that are used in the data and if the data supports or discredits any theories under investigation as opined by Wright and Carol (2004).

Particularly, this study adopted Predictive Analytical Statistical software (PASW). PASW formerly known as SPSS is probably the most widely used suite of programs for statistical analysis in social sciences according to Bryman & Cramer (1999). PASW enables quantitative data to be scored and analyzed efficiently and in a variety of ways. Here, information is inputted into a data file using a coding system. The Coding system encompasses a situation where numbers are assigned to categorical data. For example; a closed type of question which requires a YES or NO answer can be coded by assigning 1 to YES and 2 to NO. This is useful especially in a situation where bivariate analysis are employed, which concentrates on examining the relationship between two variables.

The study uses chi-square to show the extent to which e-readiness in these institutions can influence educational development in Nigerian Private Universities at large. We employ SPSS version 18.0 because the data in question are categorical in nature. Moreso, because chi-square test are used to determine whether sample data are consistent with the hypothesized distribution or not.

3.2.   Sources of Data

This research work relied both on primary and secondary data sources that are obtained from published materials like articles, textbooks e.t.c. and responses from the respondents. However 500 questionnaires were sent out among which 386 were returned and duly completed.

3.3.   The Variables Used

The major objective that would be considered in this study is to ascertain the extent in which e-readiness in the four institutions can enhance educational development. To achieve this, the level of e-readiness are measured in relation with economic development via education.**3.4.   Decision Rule**

From the foregoing, the decision rule is that if the p-value for the calculated chi-square (x^2) is greater than 0.05 i.e. ($p > 0.05$), we do not reject the null hypothesis . This further shows that the deviation is small enough that chance alone accounts for it. On the other hand, if the p-value for the calculated chi-square value (x^2) is less than 0.05 i.e. ($p < 0.05$) we do not accept the null hypothesis, and conclude that some factor other than chance is answerable for the deviation of the expected observed value to be so great.

4.0.   Analysis and Discussion of Result

In this session, the researchers carefully analyze the major indicators of e- readiness as captured by the current

study which conforms to the attributes identified by McConnell (2001) under some specified headings as illustrated below:

Table 1. Distribution of Respondents by Universities

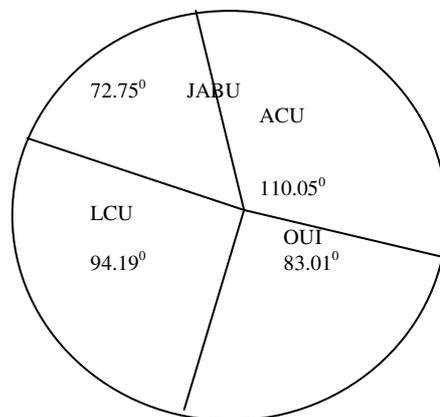| University	Sample Size	Number of Respondent	%
JABU	125	118	30.6%
OUI	125	89	23.05%
LCU	125	101	26.2%
ACU	125	78	20.2%
Total	500	386	100

Source: Authors' Survey 2013

Figure 2. Pie Chart of the University Distribution

Table 1 and Figure 2 respectively depicts the distribution of University according to the private universities surveyed. A total 500 questionnaire were administered in four private universities, out of which 386 distribution of the respondent by university from Table I. It was discovered that, 118 (30.6%) were from JABU, 89(23.05%) were from OUI, 101(206.2%) are from LCU, and 78(20.2) are from ACU. From the distribution of respondent by University it was discovered that about 31% were from JABU while the others are distributed among the other universities which includes OUI, LCU, and ACU respectively.

Table 2. E-Readiness in Terms of Facilities

Yes	226	58.55%
No	160	41.45%
Total	386	100%

Source: Authors' Survey 2013

The analysis from Table 2 shows that 58.55% of the total respondent depicts that there is a high measure of e-readiness in terms of facilities while 41.45% belief that the extent of e-readiness in terms of facilities are not adequate. Specifically, the analysis showcased that some universities possessed more internet facilities than the others. Which among others may be as a result of the level of priority the universities places on ICT and other e-

readiness facilities.

Table 3. E-Readiness in Terms of Accessibility

Yes	185	47.93%
No	201	52.07%
Total	386	100%

Source: Authors' Survey 2013

Analysis from Table 3 presented the magnitude of e-readiness via accessibility. The presentation from above showed that 52.07% of the respondents are of the view that they do not have access to the internet facilities of the universities. While 47.93% claims that they have access to these facilities available in the universities in question. The above further depicts that most of the universities under consideration are not very e-ready from the result of the analysis. In absolute term, among the 185 respondents that indicated the presence of ICT facilities are breakdown as follows: JABU =82, OUI = 19, LCU = 56 and ACU = 29.

These showed that among the 4 universities surveyed JABU and LCU showed a high level of accessibility to the internet facilities in the institutions respectively while OUI and ACU depicted a low level of access to ICT facilities.

Table 4. Distribution of Professionals According to University

University	No of Professionals Available	%
JABU	14	46.67%
OUI	02	6.67%
LCU	08	26.67%
ACU	06	20.0%
Total	30	100%

Source: Authors' Survey 2013

From the above analysis, JABU and LCU were the institutions that has the highest number of professionals while ACU and OUI respectively depicted a low number of professionals available in their institutions. No wander the high level of accessibility was recorded from the formal institutions which was mentioned given the high level of professionals that the university employed than their other counterparts which had low level of professionals as shown in Table 4 above.

Table 5. Availability of Manpower

University	Respondents	
	Yes	No
JABU	64	54
OUI	04	85
LCU	50	51
ACU	47	31
Total	165	221

Source: Authors' Survey 2013
From the Table 5, it was discovered that JABU and ACU employed more professionals/manpower in their universities than the other ones. By implication it can be deduced that the presence of this professionals would go a long way in inducing in a quicker way in which ICT preparation and usage in the universities in question sort of constitute about 73.3% of the overall number of professionals/manpower in the universities surveyed.

5.0.   Conclusion and Policy Recommendation

The study investigated the relationship between e –readiness and educational development among students in the selected private universities using a comparative analysis which includes; Joseph Ayo Babalola University (JABU), Leads City University (LCU) Ibadan, Ajayi Crowder University Oyo (ACU), and Oduduwa University Ipetumodu (OUI) situated in the Southwest Nigeria. The major thrust of this paper is to ascertain whether or not there is any correlation between e-readiness and educational development or not among the selected private universities by employing descriptive statistics via bivariate analysis, cross tabulation etc. Evidence from the study depicted that for a university to be e-ready satisfied, it must possess certain e –readiness components which among others includes; accessibility, Capacity and Opportunities which the study displaced in its e-readiness face model. The study further identified some challenges that can hamper the drive for e –readiness if proper care is not taking. These challenges among others includes; high cost of accessing internet, high cost of ownership, Inadequate power supply to mention few. From the distribution of universities surveyed, it was discovered that 31% of the respondents were from JABU while the other 69% were distributed among the remaining universities. This among others could be attributed to the fact that students in JABU readily responded to the researchers plead for their responds than the institutions surveyed. Furthermore, the results showed that approximately 54% of the respondent are of the view that the universities surveyed are e –ready in terms of facilities which relatively low when compared with the overall number of students in these schools. It was also discovered from the study that less than 50% of the overall students had access to the few available facilities. The implication from the above is that in the long run this would sort of hamper the required educational development that is expected from these students. More specifically, one would discover that majority of the students would not be able to use the internet as an example to do their assignments, term papers and projects which go a long way to affect the performance of these students at large. In a more specific examination , it was discovered that more female students access the internet than their male counterparts hence contributed enormously to the educational development of the female students across the surveyed private universities than the males. It was further discovered from the results that majority of the students that had access to e –readiness facilities via internet were mostly from 200 to 400 level. However the reasons for the above is not far – fetched from the factor identified by Chinwe (2010) pinpointed that these category of undergraduates access the internet in order to get quick information for their term papers, industrial reports, assignments etc. thereby confirming that class level has a significant effect on the access to internet. This moreso indicated intuitively that those in the middle class would more readily access and deploy the Internet for academic research than those at the upper class and the freshers respectively. It was also deduced from the study that the key factors that constraint e-readiness in private universities among others are, accessibility, financial constraint, availability of trained

manpower/ number of professionals and infrastructural deficiencies which is consistent with the findings of Amassoma et al (2010) which stipulates that there is low manpower development due to inadequate deployment of Internet and ICT equipment and infrastructures

From the foregoing, we conclude that e-readiness has a positive implication in terms of access to Internet on the educational development of students of higher learning as shown in the results of the surveyed universities in the South west Nigeria. Hence, the study makes the following proposition for tertiary institutions in Nigeria especially to the private universities that there should be increased access to computer and Internet in order to facilitate the deployment of Internet thereby enhancing the e-readiness of private universities. This can be done by providing more wireless access points so that more students would be able to access the Internet for academic research which would boost their educational development and the economic growth at large. In particular, adequate attention should be paid to ensure gender balance in terms of access to internet among students. This among others can be achieved by setting up gender-sensitive centres as opined by Sanni et al (2009).

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