Full Length Research Paper

The Use of ICT on Employee Service Delivery (A Case Study of Federal Polytechnic Oko)

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The study was on the use of Information and Communication Technology (ICT) and Employee Service Delivery in Federal Polytechnic, Oko, Anambra State, South East of Nigeria. In today’s highly globalized and liberalized competitive world, the internet and ICT has become a part and parcel of human life. And, hence the educational sectors cannot be kept away from usage of ICT, to enhance the process of education rendering to the aspirants and good service delivery to the students. Survey research design method was employed, simple random sampling technique was used and sample of 200 respondents was selected from the population of 900 academic staff and administrative staff in Federal Polytechnic Oko. The research instruments employed was questionnaire which was statically analyzed. It was discovered that there is a significant positive relationship between the use of Information and Communications Technology (ICT) and Employee service delivery. Thus in the functioning of ICT in a tertiary office administration system, ICT is becoming a mandatory element. Therefore, the study recommends that the proprietors of polytechnics should procure more ICT facilities and equipment to enhance efficiency and effectiveness in polytechnic administration, and that administrators of polytechnics should place greater emphasis on ICT in their respective institutions to foster capacity building of human resources, material resources and financial resources in other for Nigerian students to compete in global economy. Therefore the study calls for full integration of ICT into capacity building of both academic and administrative staff of all polytechnics.

Keywords: E-learning, Polytechnic, ICT.

INTRODUCTION

Information and communication technologies (ICT) refer to technologies that provide access to information through communications. It is similar to information technology (IT). “But primarily focuses on communication technologies. This includes the internet, wireless network, cell phones, and other communications medium.” In the past few decades information and communication technologies have provided to society with vast array of a new communication capabilities. “People can communicate in real time with others in different countries using technologies such as instant messaging, voice over IP and video conferencing, social networking, websites like face book allow users from all over the world to remain in contact and communicate on a regular basis”. Modern information communication technologies have created a global village in which people communicate with others across the world as if they were living next door. ICT is often studied in the context of how modern communication technologies affected society (Tech Factor, January 04, 2010).

The issue of public service is also one of effectiveness. Effectiveness in employee service delivery typically refers to “doing the right things” and measures constructs like customer satisfaction on dimensions, such as service quality, speed, timing, and human interaction. A service is effective whenever its outcomes or accomplishments are of value to its customers. Previously, concern with service quality was confined to
private services but recent change agendas have made it also a priority in the public sector (Lagrosen and Lagrosen, 2003).

Concerns over educational relevance and quality coexist with the imperative of expanding educational opportunities to those made most vulnerable by globalization developing countries in general; low-income groups, girls and women, and low-skilled workers in particular. "Global competitiveness and changes also put pressure on all groups to constantly acquire and apply new skills." The International Labour Organization defines the requirements for education and training in the new global economy simply as “basic education for all," core work skills for all and "lifelong learning for all." Information and communication technologies (ICTs) which include radio and television, as well as newer digital technologies such as computers and the Internet have been touted as potentially powerful enabling tools for educational change and reform. "When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by, among others, helping make teaching and learning into an engaging, active process connected to real life‘ in Federal Polytechnic Oko today, staff and students now enjoy the dividend of information communication technology, Even though the ICT opened up new and extensive opportunities for word-wide communication and development. According to Daniels (2002), ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. Therefore the present research is based on the argument that there is a strong relationship between the use of ICT and Employee service delivery.

Statement of Problem

And also traditional educational practices no longer provide students with all the necessary skills to compete in the global economy and survive economically in today’s work place. When ICT tools are widely used at all levels of education in developed countries, schools are yet to take maximum advantage of ICT in developing countries. Ajayi (2008) noted that ‘today’s schools are organized around yesterday’s ideal, yesterday’s needs, and yesterday’s resources. On the use of ICT, he found that teachers lack skills and knowledge in the use of computer and software and the result is a lack of confidence in utilizing ICT tools for communication.

Lack of effective ICT training remains one of the major obstacles for integration in instruction. Aramide (2004) in his study asserted that there were not enough training opportunities for polytechnic lecturers in the use of ICT in a classroom environment.

In the recent past, the Rector Oko polytechnic has sent many of its workers including lecturers on ICT training, but the trainings these lecturers received seemed not to have impacted their use of these technologies. Fakomogbon (2005) pointed out that providing pedagogical training for lecturers rather than simple training in ICT is an important issue.

Research Objective

The general objective of this study is to determine the impact of information and communication technology (ICT) uses on Employee Service Delivery in Federal Polytechnic Oko. Other specific objectives include:

1. Examine the impact of ICT use in providing solution to specific problems of administration and Employee service delivery.
2. Determine the impact of ICT uses in enhancing qualitative and quantitative decision-making and Employee service delivery.
3. Determine the impact of ICT uses in Effective Administration Practices of HR and Employee service delivery.

Review of Literature

Concept of ICT

ICT capability is based on sets of relevant knowledge, skills, behaviors and dispositions. Internationally, such capability is typically represented developmentally across interrelated domains or elements to show increasingly sophisticated experiences with the technology. The Statements of Learning for ICT were presented as five broadly defined conceptual organizers, representing key aspects of ICT that apply across the curriculum constructed reality from experience and prior knowledge. “The student interacts with the environment and, to cope with this environment, develops a conceptual framework to explain the interaction.” Another study, contacted by Siristongthaworn et al. (2006) examined the e-learning technology implementation of in higher institutions. According to the findings the students were used to instruction in the structured format due to the traditional norms of education. The key issue for Federal Polytechnic Oko is to persuade students and instructors to use ICT's effectively and motivate them to and integrate them into the learning and teaching procedures respectively.

Information can also be loosely defined as that which aids decision making. Communication refers to the transfer or exchange of information from person to
person or from one place to another. Technology refers to the use of scientific knowledge in invent tools that assist human beings in their efforts to overcome environmental hazards and impediments to comfort. In this regard, technology refers to the things like the computer, telephone, cell phone, GSM handset, television; radio etc. the acquisition, analysis, manipulation, storage and distribution of information, and the design and provision of equipment and software for these purposes (de Watterville and Gilbert 2000). Thus, ICT and information technology (IT) are similar concepts that can be used interchangeably. IT implies communications and therefore it becomes obvious that the two terms are synonymous.

Types of ICT’s Used in Education

ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. “These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony”. In recent years there has been a groundswell of interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings. “But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools”. For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries. “The use of computers and the Internet is still in its infancy in developing countries, if these are used at all, due to limited infrastructure and the attendant high costs of access”(Aribamikan, 2007).

E-Learning

Although most commonly associated with higher education and corporate training, e-learning encompasses learning at all levels, both formal and non-formal, that uses an information network—the Internet, an intranet (LAN) or extranet (WAN)—whether wholly or in part, for course delivery, interaction, evaluation and/or facilitation. Others prefer the term online learning. Web-based learning is a subset of e-learning and refers to learning using an Internet mainly using a browser (such as Chrome or Firefox or Internet Explorer)’. It can also be viewed as learning through the use of electronic devices. “Instead, consideration must be given to the subject matter, the learning objectives and outcomes, the characteristics of the learners, and the learning context in order to arrive at the optimum mix of instructional and delivery methods” (Asiabeka, 2010).

Advantages of ICT

Information and Communication Technologies have recently gained groundswell of interest. It is a significant research area for many scholars around the globe. “In a document entitled teaching and learning with ICT, Galea (2002) explains how ICT can promote teaching and learning. According to her there are two main reasons behind increasing the use of ICT in education in UK.” Firstly, ICT can change the lessons’ pace: she stated that children in modern society need to develop sufficient potentials and skills that enable them to take full advantage from the new opportunities that ICT offer. “Second, there are groundswells of interest of academic researchers in UK in how technological tools can enhance the quality of teaching and learning in schools and service delivery by lecturers, and so help learners to achieve better outcomes.” Furthermore, it has been proved that new technologies have lots of benefits on the students (Lawsent and Vincent, 1995).

ICT and Education

UNESCO defines Information and Communication Technologies (ICT) as technologies that help create, propagate and exchange information. This definition includes various tools of communication / multimedia, old and new.

The pioneering step towards ICT in education was taken by Stanford University psychology professors Patrick Suppes and Richard C Atkinson in 1960s when researchers explored, in elementary school, the prospects of using computers to learn math and reading to children. These steps flourished when William D. Graziaedi, in the year 1993, through electronic mail described an online computer-delivered lecture, tutorial and assessment project. E-learning systems roles were considered to be conveying knowledge by endeavors for duplicating despotic teaching techniques. Progressively though, these systems are developing into means of shared development of knowledge based on Computer Supported Collaborative Learning (CSCL). Exhaustive work is being done to develop even better systems enthusiastically.

The ICTs in higher education may be used at different places though it may extensively be exploited to assist traditional subjects for better academic
deliverance and overall output. ICTs can be used in collaborative learning for recuperating the quality of research particularly in India, and of course the role of ICTs in academic administration cannot be ruled out keeping in view of its vast contribution in enabling the academic establishments to maintain their standards and sustainability.

ICT as an Administrative Tool

The record of purchases, budget, grants administration, cash flow, audit and other financial transactions carried proper documentation for reference purpose. These records were kept in hardcopies before the introduction of ICT. Fortunately, the availability and accessibility of ICT and their integration in financial sector makes it possible and easy for accountants and financial administrators to process all transaction online via the system called an e-accounting. Electronic accounting (e-accounting) as the name implies, makes it possible for transactions to be captured, measures, recognized and reported electrically (Razae et al., 2009) (Figure 1).

While e-procurement has impact on cost reduction, efficiency / productivity, effectiveness and transparency, its adaptation in polytechnic system is essential.

Development of ICT in polytechnic administration using tools such as e-accounting and e-procurement will to a greater extent make significant impact on the growth and development of the programme. “The benefits of e-procurement in public organizations will be the follow:

1. Accelerations of execution of procedures
2. Reducing the time of the purchasing process
3. Reducing the expenses of announcements management
4. Simplification of process, resulting from a re-engineering of such process
5. The direct and constant monitoring of public spending by conducting comparative analysis between the purchasing of similar products in different administrations.
6. Professional growth of employees (Bof and Previtali, 2010).

The outlined benefits are in line with UNESCO (2002) recommendations that “administrators should keep up to date with new administrative techniques and friends, especially through relevant lifelong learning programmes. They should receive special training in the methods and problems associated with the specific features of polytechnic programmes such as flexible entry and re-entry patterns, continuous training in the workplace, and relevance to the needs of the world of work. This preparation should include:

a. Management methods appreciated to educational administration, including techniques that utilize information and communications technology
b. Financial planning methods that facilitate the allocation of available resources, given the objectives and priorities of the various programmes and ensure their efficient utilization.
c. Contemporary human resources management and development methods (UNESCO and ILO 2002).

Hypotheses

H01: There is no significant positive relationship between the use of ICT in problem solving and Employee service delivery in Federal Polytechnic Oko.
H02: There is no significant positive relationship between the use of ICT in qualitative and quantitative decision-making and Employee service delivery in Federal Polytechnic Oko.
H03: There is no significant positive relationship between the use of ICT in Effective Administration Practices of HR and Employee service delivery in Federal Polytechnic Oko.

METHODS

A self-administrative questionnaire was prepared for this particular study on five point Likert scale. Content validity was maintained by distributing the Questionnaire among different experts in the field of management discipline. The study population comprises of 900 academic staff and administrative staff in Federal Polytechnic Oko of which 226 were sampled as derived using Taro Yamani model. A total of 220 sets of questionnaire were retrieved. For data analysis purpose regression analysis was conducted during the test of hypotheses by means of SPSS version21. Straub's (1989) process of validating instruments in management research was employed in terms of convergent validity and discriminate validity. In this regard a Principal Components Factors Analysis (CFA) with varimax rotation was conducted to investigate the distinctions among problem solving, qualitative and quantitative decision-making, Effective Administration Practices of ICT and Employee Service Delivery. As reported in table 2, the instrument demonstrated convergent validity with factor loadings exceeding 0.50 for each constraint. Therefore these results further confirm that each of the four constructs is factorially distinct.

Table 3: (Reliability test result) indicates that all the measured variables showed good reliability, their Cronbach’s alpha value ranging from .783 to .881. The values indicate an acceptable measure (Nunally and
Table 1. Administrative Uses of ICT

<table>
<thead>
<tr>
<th>USE OF ICT</th>
<th>SPECIFIC FUNCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Budgeting, purchasing, grants administrations, cash flow, account receivable, account payable, audits</td>
</tr>
<tr>
<td>Staff administrative</td>
<td>Human resources management assessing staffing needs, recruiting staff, monitoring staff performance, keeping records, communicating with staff.</td>
</tr>
<tr>
<td>services</td>
<td>Human resources development conducting needs assessment, needs analyses and training needs analyses, delivery and assessing employee training</td>
</tr>
<tr>
<td>Student administrative</td>
<td>Recruiting and selecting students, advising students, supporting prior learning assessment and recognition, registration, recording attendance and fee payment.</td>
</tr>
<tr>
<td>services</td>
<td>Providing programme information calendar featuring programme and course descriptions, pre-requisites and other requirements, keeping records to comply with freedom of access to information, maintaining web site, giving access to administrative units, faculties and departments, managing computer and e-mail accounts for facilities and students.</td>
</tr>
<tr>
<td>Support services</td>
<td>Conducting institutional research, programme evaluation and student assessment of faculties, statistical analyses.</td>
</tr>
</tbody>
</table>

Source: Chinien(2003)

Table 2. Factor Analysis Results: Principal Component Extraction

<table>
<thead>
<tr>
<th>Scale</th>
<th>Solution to Qualitative and Effective Decision-Making Practices of HR</th>
<th>Employee Service Administration Delivery</th>
<th>Items Specific Prob. Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPP1</td>
<td>0.755</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPP2</td>
<td>0.683</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPP3</td>
<td>0.724</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPP4</td>
<td>0.699</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QDM1</td>
<td>0.675</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QDM2</td>
<td>0.597</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QDM3</td>
<td>0.817</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QDM4</td>
<td>0.612</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAHR1</td>
<td>0.691</td>
<td>0.590</td>
<td></td>
</tr>
<tr>
<td>EAHR2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAHR3</td>
<td></td>
<td>0.881</td>
<td></td>
</tr>
<tr>
<td>EAHR4</td>
<td></td>
<td>0.792</td>
<td></td>
</tr>
<tr>
<td>ESD1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESD2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESD3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESD4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suppress absolute values < 0.05

Table 3. Reliability test

<table>
<thead>
<tr>
<th>Measured variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Min</th>
<th>Max</th>
<th>Cronbach Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution to specific problems</td>
<td>3.430</td>
<td>44.836</td>
<td>2.505</td>
<td>3.710</td>
<td>.881</td>
<td>4</td>
</tr>
<tr>
<td>Qualitative and quantitative decision-making</td>
<td>3.169</td>
<td>88.183</td>
<td>2.700</td>
<td>3.675</td>
<td>.789</td>
<td>4</td>
</tr>
<tr>
<td>Encouraging skill acquisition</td>
<td>3.365</td>
<td>55.381</td>
<td>2.290</td>
<td>3.870</td>
<td>.872</td>
<td>4</td>
</tr>
<tr>
<td>Employee Service Delivery</td>
<td>3.236</td>
<td>32.822</td>
<td>3.122</td>
<td>3.475</td>
<td>.783</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: SPSS Version 21 output (as computed from Researcher's survey data)
Table 4. Analysis of Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EAHR1</strong></td>
<td>Improving skill acquisition</td>
<td>68 (32.4)</td>
<td>79 (37.6)</td>
<td>26 (12.4)</td>
<td>21 (10)</td>
</tr>
<tr>
<td><strong>EAHR2</strong></td>
<td>Facilitating competency in discharge of HR functions</td>
<td>63 (30)</td>
<td>89 (42.4)</td>
<td>32 (15.3)</td>
<td>11 (5.2)</td>
</tr>
<tr>
<td><strong>EAHR3</strong></td>
<td>Facilitating adequate data storage of academic and personnel records</td>
<td>95 (45.2)</td>
<td>84 (40)</td>
<td>26 (12.4)</td>
<td>5 (2.4)</td>
</tr>
<tr>
<td><strong>EAHR4</strong></td>
<td>Assist in providing HR information needed</td>
<td>105 (50)</td>
<td>53 (25.2)</td>
<td>5 (2.4)</td>
<td>26 (12.4)</td>
</tr>
</tbody>
</table>

**Test of Hypotheses**

Kerlinger and Lee (2000) guideline which posits that an r value of <.20 is the benchmark for accepting the null hypotheses (Ho). While an r value of $\geq 0.20$ is the benchmark for rejecting the null hypotheses (Ho). Hence we can say that the internal consistency used in our study was good.

RESULT AND DISCUSSION

The questionnaires were collected and analyzed with the application of Statistical Packages for the Social Sciences 21th Edition (SPSS 21). Table 4

Bernstein, 1994; Sekaran, 2003; Henseler et al., 2009). Hence we can say that the internal consistency used in our study was good.
Table 5. Results of Multiple Regressions of dimensions of ICT Uses on Employee Service Delivery
coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>77.762</td>
<td>1.825</td>
</tr>
<tr>
<td></td>
<td>Solution to specific problems</td>
<td>.352</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>Qualitative and Quantitative Decision-Making Effective Administration Practices of HR</td>
<td>.231</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.336</td>
<td>.039</td>
</tr>
</tbody>
</table>

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.451*</td>
<td>.413</td>
<td>.397</td>
<td>1.439</td>
</tr>
</tbody>
</table>

*Dependent Variable: Employee Service Delivery
Independent Variable: ICT Uses

Giving the Beta value (β = .351, p < 0.000). More so, the model summary shows that .397 (39.7%) variations in Employee service delivery accounted for by changes in ICT uses. However, the result of the tested hypothesis indicates that there is significant positive relationship between the uses of ICT in problem solving and Employee service delivery.

This finding align with Adeyemi (2011) who says that possible solution could be proffered in enhancing the use of information and communications technology (ICT) in the effective management of universities. Polytechnics administrators are therefore advised to adopt ICT in problem-solving.

H02: There is no significant positive relationship between the use of ICT in qualitative and quantitative decision-making and Employee service delivery.

The calculated level of significance (In multiple regression table-5) is less than the p-value of 0.05 i.e. (.002 < 0.05), the null hypothesis is rejected and alternate is accepted implying that ICT have significant relationship with qualitative and quantitative decision-making.

The Beta value (β= .171, p< 0.002). However, the result of the tested hypothesis indicates that there is significant positive relationship between use of ICT in qualitative and quantitative decision-making and Employee service delivery.

The finding revealed that information and communications technology (ICT) enhances qualitative and quantitative decision-making in the administration of polytechnics. This is in consonant with (Adegun, 2002) that there are many desirable attributes of information and communications technology (ICT) which is concerned with the effective provision of information to recipient, relevance for intended purpose, accuracy, factual, volume of information, and volume of detail and presentation of information.

H03: There is no significant positive relationship between ICT uses in Effective Administration Practices of HR and Employee service delivery.

The critical level of significance of 0.000 is less than the pvalue established (0.004 < 0.05), therefore the null hypothesis is rejected to accept the alternate. The Beta value (β=.141, p<0.05). More so, the result of the tested hypothesis indicates that there is significant positive relationship between Use of ICT in Effective Administration Practices of HR and Employee service delivery.

This is in accord with Adeyemi (2007) supports the utilizing human and material resources in accomplishing designated objectives. Information and communications technology could be used to organize, direct, coordinate and evaluate programmes in a bid to...
achieve goals or objectives of administration of polytechnics. ICT justifies better human relations for effective management of human resources, material resources and financial resources. It makes personnel to contribute greater achievement of goals within the system.

CONCLUSIONS

Considering the findings of the study, it was concluded that information and communications technology have significant impact in the administration of polytechnics. The impact were found to be relevant to senior academic and administration officers of polytechnics in ICT providing solutions to specific problems of administration, ICT enhance qualitative and quantitative Decision-making in the administration of polytechnic and competency of administrators, ICT guarantees effective administrative practices of human and material resources. ICT has capacity to handle quality of data for processing with fastest speed.

For greater reference, it is therefore recommended that ICT should be fully integrated into capacity building of both academic and administrative staff of all polytechnics.

RECOMMENDATION

Based on the findings of this study, the following recommendations were given as follows:

1. The management of the Polytechnics should as a matter of urgency put more ICT facilities and equipment in providing solutions to specific problems of curricula.
2. The management of the institution should recognize the impact and applicability of ICT to enhance qualitative and quantitative decision-making in the successful academic output.
3. The administrators should show more interest in the use of ICT tools to guarantee effectively administrator the learning process of the students.

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