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Information And Communication Technology (Ict) As A Tool For Lecturer Productivity In Some Selected Public Polytechnics In Southwestern Nigeria

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ABSTRACT

Lecturer Productivity (LP), measured in terms of Teaching Quality (TQ), Research Output (RO), Community Service (CS), and Students' Project Supervision (SsPS), is essential in attaining the goals and objectives of Polytechnic Education in Nigeria. However, studies have shown that LP in Public Polytechnics (PPs) in southwestern Nigeria is low. Previous studies focused more on funding, manpower development and Conditions of Service (CsS) as predictors of LP in universities than in the polytechnics. This study therefore, was carried out to determine the influence Information and Communication Technology Training (ICTT) on LP in PPs in southwestern Nigeria. Descriptive research design was used. The multi-stage sampling procedure was adopted. Four states (Ondo, Ogun, Osun and Lagos) that had federal and state polytechnics were purposively selected, while the four federal polytechnics were enumerated and non-proportional to size technique was used to select six state polytechnics. Seventy (70) Heads of Departments (HoDs) were selected using stratified sampling technique. Proportionate to size was used to select 540 Lecturers, 583 National Diploma and 338 Higher National Diploma students. Quantitative data were analysed using descriptive statistics and Pearson product moment correlation at 0.05 level of significance. The CS ($\bar{x}$=2.34) was low, 74.1% of lecturers did not publish in textbooks, while TQ ($\bar{x}$=2.68; $\bar{x}$=2.89; $\bar{x}$=2.93) and Lecturers' commitment to SsPS ($\bar{x}$=2.85; $\bar{x}$=2.89; $\bar{x}$=2.77) as rated by lecturers, HoDs and students respectively were moderate in PPs. ICT training (r=0.85) had significant relationship with LP in PPs. ICT influenced lecturers' productivity in public polytechnics in southwestern Nigeria. Therefore, government should increase research grant to public polytechnics' lecturers for improved productivity.

Keywords: Training, Lecturer productivity, Public polytechnics in southwestern Nigeria

Introduction

Lecturer productivity is regarded as a preferable maximum output from lecturer by using all available means within his reach and geared towards achievement of polytechnic's objective where he works and within the polytechnic environment. There has been a major concern by different stakeholders in the education sector on the perceived low productivity of lecturers in public polytechnics in Nigeria. It appears that polytechnic education which is an important instrument and a tool for economic development has not been given proper attention by the Nigerian government (Audu, Kamin, and Balash, 2013). Hence, this appears to have resulted in low lecturer productivity in these institutions.

It should be noted that the objective of introducing polytechnic education in Nigeria is to train technicians and technologists, as well as training students on management skills in different courses for the award of National Diploma and Higher National Diploma certificates, and these certificates are important to the needs, aspirations and development of the nation's diverse economy. It is with that hope, that such acquired training would lead to transformation of the economy of the country and industrial development (Ibrahim, 2017).

Teaching quality, research output, students' projects supervision and community service are the measurement of Polytechnic lecturer productivity and these seem to be declining in public polytechnics in Southwestern Nigeria. Adunola (2011) and Ganyaupfu (2013) viewed teaching as combine efforts which encompass learners and the lecturers' interactions. Personal investigations have revealed that not all the lecturers in public polytechnics are doing what is right always when it comes to teaching to achieve the polytechnic education's objectives. According to Ogunkoya, Enyi and Aremu (2020) some lecturers in polytechnics were not teaching as expected of them. Therefore, this act might result to poor contributions of students to country's economic growth after they graduated from the polytechnics.

It has been observed by the researcher that methods of teaching are very important in teaching and learning environment as the methods used by the lecturer determine the level of understanding the subject/course by the students. In some cases, some lecturers in higher education institutions are not comfortable when handling large classes. Therefore, they would be persuading the students to concentrate on the topic he is teaching for better understanding of the topic by these students (Odunlami, 2020). For effective teaching and learning to take place in public polytechnics, lecturers should make use of different teaching methods that are appropriate for different topics. There is this tendency that lecturers may not be able to cover the course contents which therefore affect their productivity. Osakpa and Okonkwo (2018) supported this claim that, in Nigeria, one of the major objectives of the polytechnic education to teach students the required skills for solving problem of unemployment has failed due to the poor methods of teaching used by some lecturers in public polytechnics.

Another measurement of productivity centres around research and publications, which appear to be handled with levity by some lecturers in the public polytechnics and this, might result to academic irregularities in these

institutions. It is a known fact, that research output is measured in higher education institutions based on published academic research work by lecturers, published research work' citations received and externally funded research. However, it has been observed that some lecturers do not engage in writings and publications, instead, they seek the assistance of other colleagues in other institutions to include their names while they pay the bills. The aftermath effect of this is that such lecturers would not be productive in their areas of specialisations (Ozengbe and Omonkalo, 2014 and Ogunkoya, Enyi and Aremu, 2020).

Also productivity is measured by community service, though lecturers' services to their community may be undervalued in comparison to research and teaching. Community engagement which is perceived as additional activities undertaken by lecturers to contribute positively to the community well-being appears to be lacking among polytechnics lecturers in Southwestern Nigeria. It was observed that lecturers' participation in community service is very low. Odunlami (2020) supported in his study that lecturers in higher education institutions do not properly engaged in community services which is one of indices of measuring their productivity.

Moreover, supervision of students' final year project is another important function of lecturers in the schools. Some lecturers in public polytechnics often do not give adequate attention to supervision of students' projects. As a supervisor, a lecturer ought to mentor and guide the supervisees on how to do what is right. It is sad to note that, not many of these lecturers are doing what is required of them to make sure that the aim of establishing polytechnic education is attained (Oladele and Babalola, 2013).

If the identified challenges are not urgently attended to, these might lead to brain drain's challenges among the lecturers in polytechnics in Southwestern Nigeria. Poor teaching quality could also result in production of incompetent graduates, which could further make their performance not appropriate. It appears that lecturers in polytechnics in Southwestern Nigeria have been facing many challenges ranging from poor funding, which resulted to inadequate training programmes and poor working conditions to delay in salaries' payment and some fringe benefits.

Therefore, lecturer productivity can be influenced by various factors among them are funding, training and job security.

Information and Communication Technology (ICT) training also plays an important role in lecturer productivity in polytechnics. Some polytechnic lecturers may not have ICT skills because proper training was not organised by the management of these institutions. In some other cases, it appears that some of the lecturers are not interested in training programmes. Hence, they would show little or no interest in the training for increased productivity.

In their study, Haliso and Laja-Ademola (2013) found that a teacher at Babcock University in Nigeria's academic production was influenced by their usage of information. The results showed that lecturers' academic productivity and the availability of information sources had a positive relationship (r =0.46 ; P <.05); lecturers' academic productivity and the utilisation of information sources had a significant relationship (r =0.54;P <.05); and lecturers' information use and availability had a significant positive influence (r =0.69; P <.05). Lecturer productivity may continue to rise as long as they have access to current, pertinent, and timely information sources.

The study conducted by Alarape, Kawonise, and Odeniyi (2017) indicated that respondents from Federal Polytechnic, Ede, had low levels of ICT usage with a strong emphasis on research, whereas respondents from Osun State College of Technology had high levels of ICT usage with a weak emphasis on research use of ICT.

When the internet availability and usage were compared, it was revealed that 56.9% of respondents at Federal Polytechnic Ede concentrated on using the internet to search for academic material, while all respondents at Osun State College of Technology Esa-Oke engaged in all online activities.

The study found that instructors' proficiency with information communication and technology (ICT) was shown by Ogbaji and Idem (2010). Despite the fact that the majority of staff members own personal computers, their findings indicate that instructors at the institution have low levels of ICT competency due to a number of issues, including inadequate internet access and a lack of ICT understanding. Other aspects including funding, workforce development, job security, compensation, working conditions, and government policy were not taken into account in the study.

Agih and Joseph (2008) found that the academic and non-academic personnel at Niger Delta University in Bayelsa State had varying levels of computer proficiency and usage. Research design was used in the study. For the study, a population of 960 people was used. Using the basic random selection technique, a sample of 100 academic staff members and 100 non-academic staff members was obtained.

Statement of the Problem

Low lecturer productivity is a strong factor that could hinder the goals' achievement of Nigerian polytechnic education on imparting technological skills for technicians, technologists and other skilled personnel that could decide to be self-reliant, especially the middle level technical manpower. There has been a major concern by different stakeholders in the education sector on the perceived low productivity of lecturers in public polytechnics in Nigeria. It appears that polytechnic education which is an important instrument and a tool for economic development has not been given proper attention by the Nigerian government. The level of productivity of lecturers in polytechnics in terms of teaching, research, community service and supervision of students' projects has been perceived to be generally low. It is suspected that the teaching methods adopted by polytechnic lecturers are not appreciated and could make it difficult for students to acquire the necessary skills. However, none of the studies consulted investigated joint influence of the entire independent variables ICT

training and lecturer productivity. It also appears that the shortage of decline in training, infrastructure have resulted to low productivity of lecturers in public polytechnics in Nigeria. If the identified problems are not given due consideration, it may lead to brain drain among lecturers.

Purpose and Objectives of the Study

The study investigated the relationship of funding, training and job security and productivity of lecturers in public polytechnics in Southwestern Nigeria. The specific objectives of the study were to:

i. examine the level of productivity of lecturers in the public polytechnics in Southwestern Nigeria;

ii. investigate the influence of ICT training received by lecturers on their productivity in public polytechnics in Southwestern Nigeria;

1.4. Research Questions

The following research questions were raised to guide the study.

1. What is the level of lecturer productivity in public polytechnics in Southwestern Nigeria?

2a. How regular are the ICT training programmes for lecturers in federal polytechnics in Southwestern Nigeria?

b. How regular are the ICT training programmes for lecturers in the state polytechnics in Southwestern Nigeria?

1.5. Hypotheses

The under listed hypotheses were formulated at 0.05 significant level:

Ho1: Information Communication and Technology (ICT) training has no significant relationship with lecturer productivity in public polytechnics in Southwestern Nigeria

Methodology

This chapter discusses the methodology this study adopted. It involved variables in the study, research design, sample and sampling procedure, population of the study, validity of the instruments, research instruments, and administration of research instruments reliability of the instruments, ethical consideration as well as method of data analysis.

Research Design

Descriptive research design was adopted for this study. This was consider necessary because the study adopted questionnaire to collect data from the respondents (Heads of Department, lecturers and students), and it provides a strategy for explaining the influence of the independent variables on dependent variable, and the variables were not manipulated.

Population of the Study

This study's population consist of the entire seventeen (17) public polytechnics in the six Southwestern states in Nigeria. The States are Lagos, Ekiti, Ondo, Osun, Ogun, Osun and Oyo States. Therefore three hundred and thirty-eight (338) Heads of Department, four thousand, five hundred and twenty-two (4522) Lecturers, thirty-four thousand one-hundred and ninety-five (34,195) students constituted the population for this study. The population of students comprise of National Diploma (ND) and Higher National Diploma (HND) in the seventeen (17) public polytechnics which comprises five federal and twelve (12) state polytechnics in the South West, Nigeria. The total population of this study is thirty-nine thousand one hundred and nineteen (39,119).

Sample and Sampling Technique

A total of one thousand five hundred and fifty-three (1,553) respondents were made up the sample size. The study adopted the use of multi-stage sampling procedure. In the first stage, four (4) states: Lagos, Ondo, Ogun, and Osun representing sixty-seven percent (67%) of the six (6) states in Southwestern Nigeria was selected for the study and these states have federal and state polytechnics. The four federal polytechnics were enumerated, and non-proportional to size technique was used to select six state polytechnics. In the second stage, purposive sampling technique was used to select Ten (10) polytechnics, that is, two (2) polytechnics each were chosen from Lagos and Ondo states while three (3) polytechnics each were chosen from Ogun and Osun states. In the third stage, proportionate sampling technique was used to select seventeen percent (17%) of lecturers in the ten (10) polytechnics which were used for data collection. In the fourth stage, thirty percent (30%) of total number of Heads of Departments of the chosen polytechnics were selected to serve as respondents for the study. In the fifth stage, proportionate to size was used to select 3.5 percent of the students in the selected polytechnics. The following number of participants was selected for the study: seventy (70) HODs, five hundred and forty (540) lecturers and nine hundred and twenty-three (923) National Diploma (ND) and Higher National Diploma (HND) students.

Research Instruments

Four research instruments were constructed for this study. The first instrument is a structured adapted questionnaire for Heads of Departments of the selected polytechnics on training (ICT training) and productivity of lecturers in public polytechnics. The second instrument is also structured adapted questionnaire for lecturers

titled 'Lecturers Questionnaire on ICT training and Productivity'. while the third instrument is for selected students and it is titled "Students Questionnaire on Productivity of Lecturers in Public Polytechnics"

Validity of the Instruments

The instruments used for this study and interview questions were validated by making the questionnaires to the supervisor as well as other lecturers in Educational Management, Quality Assurance Unit and Institute of Education, University of Ibadan.

Reliability of Instruments

An instrument is said to be reliable when it yields the same results when administered at different times, locations or population. Therefore, for the purpose of this study, a field test was carried out by administering designed instrument on Student Questionnaire on Productivity of Lecturers in public Polytechnics; Lecturers Questionnaire on ICT Training and Productivity; Heads of Department Questionnaire on Lecturer, These were subjected to reliability analysis using Cronbach's Alpha. The first instrument; Student Questionnaire on Productivity of Lecturers in public Polytechnics yielded reliability coefficient of 0.73. The second instruments: Lecturers Questionnaire on ICT Training and Productivity yielded reliability coefficient of 0.68.

Method of Data Analysis

The data obtained from the field were analysed using descriptive statistics of frequency counts, simple percentages, mean and standard deviation for respondents' demographic data and the research questions section of the instruments. The mean score below 2.5 was regarded as low and less true of the respondents while mean score above 2.6 was regarded as moderate and high. Pearson Product Moment Correlation was used to test the hypothesis at 0.05 level of significance.

Results and Discussions

The result showed that lecturer productivity in public polytechnics in Southwestern Nigeria as rated by lecturers, this was revealed under three indicators, and these are teaching, community service and project supervision. On the teaching, the following were revealed: Attendance of lectures as and when due ($\bar{x}$=3.43); Teaching in line with the content of the lecture plan ($\bar{x}$=3.15); Teaching with appropriate teaching aids and/or device ($\bar{x}$=3.14); Interest of students during lectures ($\bar{x}$=3.16); Students are allowed to ask questions during and after lectures on the topic delivered ($\bar{x}$=3.13); I attend to students during my consultation time only ($\bar{x}$=2.00); time allocated to teach my course is inadequate to cover the syllabus ($\bar{x}$=2.06); I do extra teaching if it is necessary ($\bar{x}$=2.79); I do cover syllabus on the course assigned to me before the commencement of the end of semester examinations ($\bar{x}$=2.90). The average mean of teaching as an indicator of level of lecturer productivity in public polytechnics was given as 2.68, which implies that the respondents submitted it was moderate.

On project supervision, the following were revealed: students assigned to me for project supervision are given adequate attention ($\bar{x}$=3.33); my supervisees are allowed to consult me anytime they see me in office ($\bar{x}$=3.12); I am always available to attend to my supervisees ($\bar{x}$=2.70); my supervisees are given priority over my secondary assignment ($\bar{x}$=2.32); I motivate my students to devote time to their study ($\bar{x}$=2.94); I help my supervisees to publish their work ($\bar{x}$=2.42); I establish benchmarks to be achieved by my supervisees without delay ($\bar{x}$=3.10). The average mean of project supervision as an indicator of level of lecturer productivity in public polytechnics was given as 2.85, which implies that the respondents submitted that project supervision was moderate.

On community service, the following were revealed: I participate in community service ($\bar{x}$=2.73); I have participated in community improvement programmes as a member of this polytechnic ($\bar{x}$=2.41); I am involved in offering training substitution and mobilization services to communities ($\bar{x}$=2.27); I am involved in promoting the civic duties of the community ($\bar{x}$=2.40); I am involved in collaboration with community for useful services ($\bar{x}$=2.49); as a member of staff, I am involved in training the youth in community activities ($\bar{x}$=2.06). The average mean of community service as an indicator of level of lecturer productivity in public polytechnics was given as 2.34, which implies that the respondents submitted that community service was not high in public polytechnics in Southwestern Nigeria. The result of research publication revealed that lecturer productivity in public polytechnics as reflected in research and publication of the lecturers.

Ten (10) representing 2.1% of 482 lecturers did not published any article within a year, three hundred and eighty-six (386) representing 80.1% published 1-3 articles within a year, while eighty-six (86) representing 17.8% of the lecturers published 4-6 articles within a year.

Thirty (30) representing 6.2% of 482 lecturers did not publish in group research within the department, three hundred and nine (309) representing 64.1% published 1-3 articles within a year, one hundred and ten (110) representing 22.9% of the lecturers published 4-6, while thirty-three (33) representing 6.8% of the lecturers published 7-9 published in group research work carried out with other lecturers within the department.

One hundred and forty-six (146) representing 30.3% of 482 lecturers did not publish any article with colleagues in the faculty, three hundred and three (303) representing 62.9% published 1-3 articles within a year, while ninety-nine (99) representing 20.5% of the lecturers published 4-6 Research done with other members of academic staff within the faculty.

One hundred and twenty-six (126) representing 26.1% of 482 lecturers did not publish with other members of academic staff within the faculty, two hundred and fifty-seven (257) representing 53.4% published 1-3 articles within a year, while ninety-nine (99) representing 20.5% of the lecturers published 4-6 in papers with other members of academic staff within the polytechnic.

Fifty-four (54) representing 11.2% of 482 lecturers did not carry out research lecturers from other institutions, two hundred and seventy-five (275) representing 57.1% published 1-3 articles within a year, forty-three (43) representing 22.9% of the lecturers published 4-6, while one hundred and ten (110) representing 22.8% of the lecturers published 7-9 conducted research with lecturers from other institutions.

Fifty (50) representing 10.4% of 482 lecturers did not publish papers in local journal, two hundred and seventy-nine (279) representing 57.9% published 1-3 articles, one hundred and twenty (120) representing 24.9% of the lecturers published 4-6, while thirty-three (33) representing 6.8% of the lecturers published 7-9 papers in local journals.

One hundred and twenty-six (126) representing 26.1% of 482 lecturers did not publish papers in international journal, one hundred and sixty (160) representing 33.2% published 1-3 articles, one hundred and forty-two (142) representing 29.6% of the lecturers published 4-6, while forty-four (44) representing 6.8% of the lecturers published 7-9 papers in international journals.

Two hundred and eighty-nine (289) representing 60.0% of 482 lecturers did not publish in textbook authorized, one hundred and ninety-three (193) representing 40.0% published 1-3 in textbook authored

Two hundred and ninety-six (296) representing 61.4% of 482 lecturers did not publish local books authored, one hundred and eighty-six (186) representing 38.6% published 1-3 in local books authored.

Four hundred and eighty-two (482) representing (100.0%) of 482 lecturers did not author foreign books.

One hundred and twenty-eight (128) representing 26.6% of 482 lecturers did not publish conference papers, one hundred (100) representing 20.7% reviewed 1-3 books, one hundred and eighteen (118) representing 24.5% of the lecturers reviewed 4-6 books, ninety (90) representing 18.7% of the lecturers reviewed 7-9 books, while ten (10) representing 2.1% of the lecturers reviewed books.

Three hundred and sixty-three (363) representing 75.3% of 482 lecturers not have chapters in book, while one hundred and nineteen (119) representing 24.7% of lecturers have 1-3 chapters in books.

Table 1: Information and Communication technology (ICT)

ICT Training						
Items	**VT**	**T**	**LT**	**NT**	**Mean**	**S.D**
Lecturers in this Polytechnic have been trained on how to make use of ICT.	120 (57.7)	32 (15.4)	28 (13.5)	28 (13.5)	3.17	0.807
ICT training is not taken serious by the Management of this Polytechnic.	4 (1.9)	36 (17.3)	154 (74.0)	14 (6.7)	2.14	0.546
Irregular power supply affects ICT training in this school.	120 (57.7)	28 (13.5)	32 (15.4)	28 (13.5)	3.15	0.817
ICT training is affected as a result of inadequate power supply to this Polytechnic.	89 (42.8)	63 (30.3)	28 (13.5)	28 (13.5)	3.02	0.702
Some lecturers do not have knowledge of ICT.	36 (17.3)	36 (17.3)	100 (48.1)	36 (17.3)	2.35	0.961
The cost of training on ICT is high in this Polytechnic.	17 (8.2)	99 (47.6)	64 (30.8)	28 (13.5)	2.50	0.828
There is poor internet service in this Polytechnic; therefore, it makes training on ICT very difficult for lecturers.	78 (37.5)	74 (35.6)	42 (20.2)	14 (6.7)	3.04	0.921
Average Mean = 2.77						

Table 1 showed ICT training in federal polytechnics in Southwestern Nigeria as rated by lecturers,

On ICT training, the following were revealed: Lecturers in this Polytechnic have been trained on how to make use of ICT ($\bar{x}$=3.17); ICT training is not taken serious by the Management of this Polytechnic ($\bar{x}$=2.14); ICT training is not taken serious by the Management of this Polytechnic ($\bar{x}$=2.14); ICT training is affected as a result of inadequate power supply to this Polytechnic ($\bar{x}$=3.02); Some lecturers do not have knowledge of ICT ($\bar{x}$=2.35); The cost of training on ICT is high in this Polytechnic ($\bar{x}$=2.50); There is poor internet service in this Polytechnic; therefore, it makes training on ICT very difficult for lecturers ($\bar{x}$=3.04). The average mean of subvention as an indicator of funding in public polytechnics was given as 2.77, which implies that the respondents submitted it was true of them.

Table 2: Relationship between ICT Training and Lecturer Productivity in Public Polytechnics in Southwestern Nigeria

Variable	**N**	**Mean**	**Std Dev**	**r**	**P value**	**Remark**
ICT Training	482	19.39	4.84			
Lecturer Productivity	482	62.72	14.37	0.85	0.003	Sig.

P < 0.05

Table 2 presents the hypothesis five' analysis on the ICT training had significant relationship with lecturer productivity in public polytechnics in Southwestern Nigeria. The finding of the hypothesis revealed a strong relationship between the ICT training and lecturer productivity, this shows that the correlation between the two variables was significant (r=0.85: P<0.05), then the null hypothesis was rejected at 0.05 significant level. This

means that ICT training has correlation with lecturer productivity in public polytechnics in Southwestern Nigeria.

Discussion of Research Questions

Lecturer Productivity in Public Polytechnics in Southwestern Nigeria

The result of this study was in line with the report of the previous studies of Halilu and Wilson (2018) on productivity of polytechnics' lecturers in North West, Nigeria that lecturer productivity was low. Also, this finding corroborates the findings of Abba, Anumaka and Gaite (2016) on leadership practices and lecturer productivity in polytechnics in Nigeria. It was shown in the result that the leadership practices considered in the study revealed that the variation in lecturer productivity was 3.8%.

Discussion of Hypothesis

ICT Training and Lecturer Productivity

Hypothesis five's result indicated that ICT training had significant relationship with there was a significant relationship with lecturer productivity in public polytechnics. This study's result supported that of Sulaiman (2015) that ICT training had a significant relationship with lecturer productivity in public polytechnics. Similarly, the finding of Haliso and Laja-Ademola (2013) was in support of that of this study's result because information source had a significant relationship with lecturer productivity. In the same vain, Alarape, Kawonise and Odeniyi (2017) indicated that lecturers in government owned polytechnics have not been using ICT to the fullest.

Conclusion

Information Communication and Technology (ICT) training in the federal and state polytechnics is better. In conclusion, lecturer productivity in public polytechnics on teaching and project supervision was moderate and above average while research publications and community service of lecturers in federal and state polytechnics were below average.

Recommendations

Based on the research findings, it was recommended as follows:

Therefore, lecturers training should be improved upon, most especially in the aspects of ICT training workshops.

It was also recommended that, government should give more grants to lecturers for research purposes. Welfare package of lecturers in public polytechnics should be given priority by both the state and federal government.

In conclusion, research leave should be approved for polytechnic lecturers so that their productivity can increase.

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