SELF-RATING OF OFFICE TECHNOLOGY AND MANAGEMENT LECTURERS' PROFICIENCY FOR EFFECTIVE TEACHING OF SPREAD SHEET APPLICATION IN NORTH-WEST NIGERIA POLYTECHNICS

Garba, Ado Gude Ph.D
Department of Office Technology and Management
Federal Polytechnic Kabo, Kano State.
adogarba@fedpolykabo.edu.ng
adogarba20@gmail.com

Abstract
This study was undertaken with a view to discovering how proficient are Office Technology and Management Lecturers in teaching MS Excel application in the North-west Nigerian Polytechnics. One research question and two null hypotheses guided the study. The study utilised a descriptive survey research design. the population and the sample size were 127 OTM lecturers. The instrument for data collection was 5-point structured questionnaire with 15 items. The reliability of the instrument was established using split half method and obtained a coefficient value of 0.84. The researcher and three assistants administered the questionnaire, while the retrieved data were analyzed with mean and standard deviation. A t-test was used to test the null hypothesis at 0.05 level of significance. The finding revealed that OTM lecturers were very proficient in teaching spreadsheet applications. The study also found no significant difference in the mean ratings of respondents' proficiency for effective teaching of spreadsheet application as a result of gender and the institution's ownership (State and Federal). The study concluded that OTM lecturers possess the requisite spreadsheet proficiency to effectively teach their students. Based on the findings, it is recommended that OTM lecturers should engage in self-development in order to maintain their proficiency level in spreadsheet applications.

Keywords: Self-rating, Proficiency, Spreadsheet application, OTM lecturers

Introduction

With the emergence of computerization in the educational sector, economic activities became more differentiated, as new and distinct jobs emerged. This led to the demand for people with various practical skills to perform different tasks in government, industry and education sectors. As a result of this transformation, the National Board for Technical Education (NBTE) in collaboration with UNESCO, introduced a new curriculum called Office Technology and Management (OTM) in 2004 to replace the Secretarial Studies curriculum. The essence of this is for the students to be able to practice what they have been taught in order to meet the global challenges brought about by Information Communication Technology (ICT). Nnaji (2019) remarked that as a result of the curriculum review, OTM is concern with development of skills, knowledge and abilities needed to enable recipient to perform effective in the modern office.

OTM came in to being for two major reasons: Firstly, as a response to the yearnings of secretarial studies students and practitioners on the need to change the name of the programme because of the negative perception of the public, as the name is generally linked to the roles of

shorthand typists or stenographers. Secondly, and most importantly, there is more emphasis on ICT and management so as to enrich the knowledge of the students and equip them with skills needed in modern offices (Adelekin, 2009). The NBTE's (2004) new curriculum for Office Technology and Management programme is drawn in course units; this is in keeping with the provisions of National Policy on education (2004) which stresses the need for introducing the semester credit units, which will enable the student who so wishes to transfer the units already completed to other institutions of similar standard.

Being that the OTM programme is more of practical instruction rather than theory, its method of instruction considers more practical contact hours and therefore, it is almost student centered. Yusuf and Iyiola (2018) argues that the teaching and learning of skills, subject had long shifted from subject centeredness in which the teacher dominates the learning scene to learner centeredness in which the learner dominates by actively doing the learning himself. However, it might be in this line of thought that prompted NBTE to emphasize 75 percent practical and 25 percent theory on the programme.

Proficiency is the ability of an individual to execute a task in accordance to the standard. Proficiency in office management perspective is attained as result of constant drill and practice. Knox (1980) defined proficiency as the capacity of an individual to perform a task in a satisfactory manner, if the individual is given the opportunity. For OTM lecturers to deliver as expected, computer application proficiency should be at their finger tips. Ezenwafor and Garba (2020) see computer application proficiency as the capacity to perform responsibility in accordance with the prescribed criteria. Therefore, possession of requisite skills, knowledge and procedures could make the lecturers proficiently capable to provide adequate training to the students of OTM. Computer application proficiency includes Spread Sheet Application among others.

Excel otherwise known as spreadsheet is a computer application design to provide simple and complex arithmetic solution. Since this application is to be learnt by the learners of OTM programme, proficiency in the use of excel is desirable for the lecturers. The NBTE (2004) emphasized the need to understand the importance of excel and how it is being operated effectively so that student can get the requisite knowledge and skill to work competently in the office. According to Mumuni and Sam in Nnaji (2022), the introduction of OTM curriculum in the polytechnics, by NBTE has created the demands of the lecturers that could teach students in the Polytechnic. This is based on the fact that Microsoft excel is added into the curriculum. Therefore, the job of OTM lecturers in polytechnics system is now enhanced by technological advancement**.**

Amesi and Ezeora (2023) maintained that there is the need for business education teachers to be proficient in Microsoft excel because students can be trained to solve simple and complex mathematics and statistics. Excel also provides the facility to convert the spreadsheet data into various charts like bar, pie, 2D, and 3D (Nonye & Nnenna, 2019). Excel can be used to create a simple and complex formular with ease of understanding. Therefore, lecturers' proficiency to perform simple as well as complex mathematical operations is necessary. The

Microsoft excel application ensures that the graduates of the programme develop relevant and saleable competencies that would enable the recipients to be self-employed and also create employment after graduation. The application has a variety of interactive features allowing user interfaces work more comfortably and achieve results.

In an elaborate form, the need for proficiency of spreadsheet to the task of the Lecturers, is its capability to automatically poll external databases and measure instruments using an update schedule, analyze the results, make a word report or power point slide show, and e-mail these presentations on a regular basis to a list of participants. Okoye (2021) observed that excel supports charts, graphs or histograms generated from specified groups of cells. The generated graphic component can either be embedded within the current sheet, or added as a separate object in the worksheet. Therefore, this call for the desirability of lecturers to be proficient in teaching the subject.

Excel consists of menu bar, tool bar, status bar and buttons that allow the users or learners to manipulate and work freely in the excel window. Inside Excel environment, there is customized quick access tool bar. This quick access tool bar is used to exploit some of the important options on the environment as a short cut buttons, to enable secretary work easily with speed. The quick access tool bar consists of options such as new option for selecting a new worksheet; open option for opening a new document; save option for saving a document; email option for sending document and quick print option for getting into print area and so on. Anigbogu and Anigbogu (2010) lamented that Microsoft excel has a tool bar that contains the icons for performing some tasks quickly without referring to the main menu. Teaching of this bar is very relevant and therefore need to be mastered by the lectures

MS excel application has a menu bar which is used to perform different actions and functions leading to the achievement of intended tasks by the students. The bar consists of home, insert, page layout, formula, data reviewer and review menus. These menus are contained in the ribbon. Gupta (2012) stated that the ribbon is arranged into a group of related command that the lecturer should be acquainted, if he is to be proficient to impart the knowledge of spreadsheet. Gupta added that the ribbon consists of home tab, insert tab, page layout tab, formula tab, Data tab, review and view tabs respectively.

Ibrahim and Kazeem (2015), stated that Insert tab command, as indicated in the ribbon contain options such as table, illustration, charts, links and text options respectively. Microsoft incorporation (2010) mentioned that inside the insert tab, there is a table option which consists of pivot and the normal table for table related work. The two tables can contribute to the competency of the lecturers and, therefore, the ability to be proficient in manipulating the features in the insert menu is crucial to the OTM lecturers.

The next is the Illustration option that consists of pictures to be inserted, the insertion of clip art to the document, the insertion of shapes and the insertion of smart art in the worksheet. Teaching this option is relevant to the Lecturers' of OTM. There is also a chart option under the insert tab. The Lecturers can use this option to teach students how to insert column chart, line

chart, pie chart, bar chart and other charts which can enable the sighting of data at glance for better interpretation. By this, the student could be able to produce good practical work.

Lectures' proficiency in teaching Excel could go a long way in enhancing relevance in the organization in the sense that the MS excel features mentioned, if mastered properly could uplift the students' status toward achieving the desired Spreadsheet objectives as stipulated by the NBTE curriculum contents.

Statement of the Problem

The Office Technology and Management curriculum is designed to comply with the nomenclature of Information and Communication Technology. According to the National Board for Technical Education (NBTE, 2004) curriculum contents, the OTM product should fit into the world with computer competences and skills to effectively work after graduation.

However, from the observations of employers, secretaries' proficiency regarding spreadsheet applications is worrisome. This made the employers to suspect the OTM lectures' exposure to computer applications and specifically spreadsheet application for effective teaching. Amesi and Ezeora (2023) maintained that there is the need for OTM lecturers to be proficient in Microsoft excel because students can be trained to solve simple and complex mathematics and statistics. Additionally, Mumuni and Sam in Nnaji (2022), emphasised that NBTE curriculum has created the demands of the lecturers that could teach students in the polytechnic. This is based on the fact that Microsoft excel is added into the curriculum.

It seems there is a gap between the employers' expectations and the lecturers' proficiency in teaching spreadsheet to proficiently equip students for modern office work. The resultant effect to this, is that the curriculum objectives could not be realized which could translate to graduating incompetent secretaries. It is against this background that empirical evidence is required in order to determine the lecturers self-rating of office technology and management lecturers' proficiency for effective teaching of spreadsheet application in North-west Nigerian Polytechnics.

Research question

The following research question guided the study.

How OTM lecturers in the North-West Nigerian polytechnics rate their proficiency on Spreadsheet application?

Null hypotheses

The following hypotheses were tested at 0.05 level of significance.

1. OTM lecturers in North-West Nigerian Polytechnics do not differ significantly in their mean self-rating of their proficiency in Spreadsheet application as a result of their gender.
2. OTM lecturers in state and federal in North-West Nigerian Polytechnics do not differ significantly in their mean self-rating of their proficiency in Spreadsheet application.

Method

The study adopted a descriptive survey research design. The area was North-West Nigeria that comprised of seven states. The population of the study was 136 lecturers sourced from Heads of Departments of OTM in all the Polytechnics offering OTM programmes. The entire population constituted the sample. Instrument for data collection was a structured questionnaire titled "OTM lecturer' Proficiency on spreadsheet applications questionnaire" (OLPOSAQ). It has section A and B. Section A contains two items on the demographic data of the respondents while Section B contain 15 items respectively with a 5-point Likert type rating scale of very proficient (VP) with 5 points; Proficient (P) with 4 points; fairly proficient (FP) with 3 points; barely proficient (BP) with 2 points and not proficient (NP) with 1 point. The instrument was validated by three experts as follows; two lecturers in the field of Office Technology and Management and one expert in the field of measurement and evaluation from Bayero University Kano. Split half method was used to ascertain the reliability of the instrument with Pearson Product Moment Correlation and reliability Co-efficient yielded a value of 0.84. The researcher personally administered the instrument with the help of assistants who work in the polytechnics. Out of 136 copies of the instrument distributed, 127 (representing 93 percent) were retrieved and anlysed. Data collected were analysed with mean and standard deviation to answer the research question and determine the homogeneity of the respondents' mean rating. Decision on the research question was based on the grand mean score relative to the real limit of numbers on the five-point scale. The inferential statistic of t-test was used to test the null hypotheses at 0.05 level of significance. A null hypothesis was not rejected when the t-calculated is less than the t-critical and rejected when the t-calculated is greater than the t- critical.

Results

Table 1: Respondents' mean rating of their proficiency on spreadsheet activities

N =127

S/N	Items	$\bar{X}$	SD	Remarks
1	Show students how to load (open) and main function of Microsoft Excell	4.63	0.72	Very proficient
2	Guide the students how to plan a spreadsheet work	4.61	0.83	Very proficient
3	Illustrate how and where to place a numerical table, titles, and use of columns and rows	4.72	0.75	Very proficient
4	Demonstrate how to move from one cell to another, clear and delete data in Ms. Excell	4.69	0.72	Very proficient
5	Express to students how to enter, edit and manipulate data	4.57	0.70	Very proficient
6	Teach student how to change the spreadsheet looks (e g. Number fonts and size).	4.61	0.61	Very proficient
7	Show student how to calculate results from a	4.63	0.63	Very proficient

	spreadsheet using data.			
8	Reveal how and where to enter and modify the formula	4.43	0.81	Proficient
9	Demonstrate how to print spreadsheets document	4.73	0.66	Very proficient
10	Check on students typing techniques and speed improvements when typing numbers and symbols	4.52	0.82	Very proficient
11	Show students how to produce a simple chart and graph using Ms Excell	4.24	0.81	Proficient
12	Prove to the students how to change the appearance of a chart or graph,	4.63	0.77	Very proficient
13	Guide the students how to print the chart or graph to an appropriate standard of presentation	4.65	0.66	Very proficient
14	Demonstrate how to create formular	4.41	0.61	Proficient
15	Teach students how to merge and unmerge cells	4.57	0.28	Very proficient
	Cluster mean	**4.57**		**Very proficient**

Source: Questionnaire administered, 2025

As shown in Table 1, 13 items with mean range from 4.73 to 4.52 are rated very proficient by the OTM lecturers. The remaining two items with mean of 4.43 to 4.24 are rated proficient. The cluster mean of 4.57 is obtained, meaning that their ratings are very proficient. The standard deviations are within the range. This depicts that OTM lecturers in North-West Nigeria Polytechnics are very proficient in the use of spreadsheet application.

Hypothesis 1

OTM lecturers in North-West Nigerian polytechnics do not differ significantly in their mean self-rating of their proficiency in spreadsheet processing as a result of their gender.

The result of t-test conducted in respect of this hypothesis is presented in Table 2.

Table 2:

Summary of t-test analysis of male and female lecturers mean ratings of proficiency on spreadsheet processing activities.

Gender	N	Mean	SD	Df	Std Error	t-cal	L/S	t-crit	Decision
Male	86	2.21	1.14						
				125	0.14	0.79	0.05	1.96	Not rejected
Female	41	2.10	1.19						

The data in Table 2 show that the t-cal is 0.79 and the t-critical is 1.96 at 125 degree of freedom and at 0.05 level of significance. Since the t-calculated is less than the t-critical, the null hypothesis was not rejected. This indicates that no significant difference exists between male and female OTM lecturers in North-West Nigeria polytechnics in their mean self- rating of their proficiency in spreadsheet as a result of their gender.

Hypothesis 2

OTM lecturers in state and federal in North-West Nigerian Polytechnics do not differ significantly in their mean self-rating of their proficiency in spreadsheet processing.

This null hypothesis was tested using t–test and at 0.05 level of significance. The result is indicated in Table 3.

Table 3:

Summary of t-test analysis of federal and state lecturers mean ratings of proficiency on spreadsheet processing activities.

Institution	N	Mean	SD	Df	Std Error	t-cal	L/S	t-crit	Decision
State	76	2.47	1.13						
				125	0.21	0.38	0.05	1.96	Not rejected
Federal	51	2.39	1.21						

As shown in Table 3, the t-calculated value of 0.38 is less than the t-critical of 1.96 at 125 degree of freedom and at 0.05 level of significance. This suggests that the null hypothesis was not rejected. It means that state and federal OTM lecturers in North-West Nigerian Polytechnics do not differ significantly in their mean self-rating of their proficiency in spreadsheet processing as a result of their type of institutions.

Discussion

The finding of the study portrayed that OTM lecturers in North-West Nigeria Polytechnics are very proficient in the use of spreadsheet application. The result of this finding agreed with that of Okolocha and Olannye (2015) which discovered supervisors rated their secretaries very proficient in the use of spreadsheet in Delta state of Nigeria. This justified the proficiency of lecturers who guided and mentored the students to meet the challenging in the labour market.

The result of the finding tallied with that of Ndinechi and Garba (2014) who reported that OTM students in Polytechnics in North West Nigeria were very proficient in the use of spreadsheet application. This also justified the proficient of lecturers.

The study also found no significant disparity among OTM lecturers in North-West Nigeria Polytechnics in their mean self- rating of their proficiency in spreadsheet as a result of their gender and the institution they belong.

Conclusion

Based on the finding of this study, it was concluded that OTM lecturers in North-West Nigeria Polytechnics possessed the requisite spreadsheet proficiency to effectively teach their students.

Recommendations

1. OTM lecturers in North-West Nigeria Polytechnics should engage in self-development in order to maintain their proficiency level in spreadsheet application.
2. Management of the institutions covered in the study should ensure that adequate instructional resources are provided and functional in the OTM departments for effective teaching and learning process.
3. OTM lecturers and students should endeavour to possess personal computers and spreadsheet tools to augment deficiencies in the teaching and learning of webpage design application.

Acknowledgement

This research work is sponsored by Tertiary Education Trust Fund and supported by Federal Polytechnic Kabo, Kano Nigeria.

References

Adelekin, T. R. (2009). Issues and trends in teaching and learning of office technology and management. *Book of Reading in Business Education 6(2)*, 209 – 220.

Amesi, J. & Ezeora, C.I. (2023). Business educators' utilization of software interned resources for instructional delivery in postgraduate programme in Rivers state universities. *Nigerian Journal of Business Education*, 10(1), 357-375

Anigbogu, S. O. & Anigbogu, G. N. (2023). *Introduction to the fundamentals of computer science and information technology application.* Awka: Christon International Company Limited..

Ezenwafor, J. I. & Garba, A. G. (2020). Assessment of database management and web page design competencies possessed by office technology and management graduate workers in north-west Nigeria Polytechnics. *NAU Journal of Technology and Vocational Education,* 5(1), 27-39

Federal Government of Nigeria (2004). *National Policy on Education,* Abuja: National Educational Research and Development Commission, Printing Division.

Gupta, V. (2012). *Secret guide to computers*. Delhi – India: Dream-tech Press.

Ibrahim, R. A. & Kazeem, R.A. (2015). *Essential computer studies*. Ogoni: Tonad Publishers Limited.

Knox, A. (1980). Proficiency theory of adult education. Retrieved on 21st October 2011, from*http://adulteducation.wikibooks.us/index.Php?title= knox%27sproficiencytheory%281980%29*

Microsoft (2010). Microsoft acquires vermmer technologies inc. Retrieved from *http://www. microsoft.com/products/ expression/en/expression.web*.

National Board for Technical Education (2004). *Curriculum and course Specification*. Kaduna: ssNBTE.

Ndinechi, G. I. & Garba, A. G. (2014). Self assessment on word processing and spreadsheet proficiency by office technology and management students in north west Nigeria polytechnics. *Nigeria Journal of Business Education, 1(3),* 313 – 321.

Nnaji, F. O. (2019). Assessment of the contribution of office technology and management on skills development for self-reliance in Bali local government, Taraba State Nigeria. Journal of business educators 6(1), 283-290.

Nnaji, F. O. (2022). Soft skills competency needed of office technology and management students for employability in the e-office. *Bakundi Journal of Technology, Agriculture and Entrepreneurship.* 3(1),125- 132

Nonye. A & Nnenna, A. F. (2019). Computer system operating skills required by lecturers for effective implementation of office technology and management curriculum in polytechnics in South-East. *Nigerian Journal of Business Education*, 6(2), 226-236

Okolocha, C. C. & Olanye, V. E. (2015). Supervisors' rating of word processing and spreadsheet competencies possessed by secretaries in government ministries in Delta State of Nigeria. *Journal of Technology and Vocational Education. 1(2)*, 29-37.

Okoye, P. O. (2021). *Computer basics (4th ed.*). Enugu: Golden Eagle Publishers.

Yusuf, S. & Iyiola, M, A,(2018). Acquisition of information and communication technology skills needed by OTM students in Polytechnics for self-reliance and national development. Journal for the promotion/advancement of office 8(1) 23-32.