ASSESSMENT OF DATABASE MANAGEMENT AND WEBPAGE DESIGN COMPETENCIES POSSESSED BY OFFICE TECHNOLOGY AND MANAGEMENT GRADUATE WORKERS IN NORTH-WEST NIGERIA POLYTECHNICS

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Abstract

The need to improve computer application competencies of graduates of Office Technology and Management (OTM) programme based on persistent complaints on their lack of the relevant competencies by employers necessitated this study on administrative supervisors' assessment of database management and webpage design competencies possessed by OTM graduate workers in North-West Nigeria polytechnics.Two research questions guided the study and four null hypotheses were tested.Descriptive survey research design was used for the study.The population was 378 administrative supervisors in state and federal polytechnics. The population was used as sample. A structured 5-point rating scale questionnaire containing 36 items in two clusters was validated by three experts from the Faculty of Education, Nnamdi Azikiwe University, Awka and used for data collection. The reliability of the instrument was established using split-half with Pearson Product Moment Correlation Co-efficient formula and reliability co-efficient value of 0.78 was obtained. Mean and standard deviation were employed to answer the research questions and determine the homogeneity of the respondents' views while t-test was used to test the null hypotheses at 0.05 level of significance. Findings revealed that the OTM graduate workers possessed database management competencies at a moderate level and possessed webpage design competencies at a little level. Gender and ownership of the institution influenced the respondents' views on database management competencies of the OTM graduate workers but did not on webpage design competencies. Based on the findings, it was concluded that the OTM graduate workers in polytechnics in North-West Nigeria do not possess the relevant competencies for effective utilization of database management and webpage design applications. It was, therefore, recommended among others that OTM graduate workers in North-West Nigeria Polytechnics should seek out and utilize self-sponsored opportunities to improve their level of competencies in the two applications to enable them perform their duties effectively.

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Keywords: Administrative supervisors, OTM graduate workers, competency, database management application, webpage design application,

Introduction

Office Technology and Management (OTM) is a programme of study that was introduced in the year 2004 by the National Board tor Technical Education (NBTE). The programme was designed to replace the old secretarial studies curriculum which was found inadequate as a result of technological revolution in the Nigerian education sector. The objective of the programme, as stipulated by the NBTE (2004), is to equip the students with office/secretarial skills and competencies essential for employment into any of computerized office. Secondly, it is intended to expose students to industrial work experience scheme that will give them the chance to demonstrate and practicalize their skills. Thirdly, it paves the way for the students to further their academic pursuit. Lastly, it develops in the students, an occupational intelligence that will make them versatile and adaptable to the changing situation in the world of work. Baba and Akarahu (2012), pointed out that the OTM aims at acquisition of appropriate skills, abilities and competencies, both mental and physical, as equipment for the individual to live and contribute to the development of the society and as well, to produce competent graduates of office technology and management.

Office technology and management graduates can be employed as confidential secretaries, administrative assistants or office technology managers and are expected to perform professionally in all ICT based tasks. Adelekin (2009) observed that OTM programme aims at providing the business world with highly skilled knowledge workers to serve as secretaries. These secretaries are expected to be equipped with a comprehensive range of skills including managerial, technological and communication to manage information efficiently. Anderson in Oguejiofor (2013) referred to a secretary as the one, who can think for the executive, acts for and anticipates the executive's whims. Therefore, the effective performance of a secretary in the office,depend on the type of supervision by the administrative supervisor.

Administrative supervisor is a person in charge of overseeing and directing a project or people. Administrative supervisor could be perceived as someone who is in charge of a particular department or unit. Arora (2012) defined administrative supervisor as an executive saddled with the responsibilities of overseeing the accomplishment of the assigned tasks or dutiesof subordinates. The administrative supervisor can be a member of the management team that plans, organizes, directs, coordinates and controls the activities of an organization toward the achievement of stated goals and objectives. Abdullahi (2012) maintained that an administrative

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supervisor is a senior staff who oversees the administration of an organization including the work done by subordinates. In essence, administrative supervisors are usually authorized to recommend and or effect hiring, discipline, promotion, punishment, reward and other activities associated with personnel management in an organization. In this study, administrative supervisors are all senior officers in the polytechnics who have secretaries attached to them and are in a good position to assess their secretaries' computer application competencies.

Competency is the ability to carry out responsibility as expected. It is the acquired knowledge, skills and procedure that enable OTM graduate workers to meet established performance criteria. Okolocha and Olanye (2015) viewed computer application competency as the ability to use correct procedure to manipulate the machine software as required in order to obtain results.Computer application include database management system or webpage design application among others.

Database management system is a collection of data that relate together and stored for different usage with minimum duplication or redundancy. Database management system (DBMS) is a program that provides method of arrangement and storage for easy access. Sawyer and Williams (2009) stated that database management system is improvements over conventional file management system. In addition, Agomuo (2005) viewed database management system as a collection of data organized for storage in a computer memory and designed for easy access by authorized users. In summary, database management system stores, organizes and manages information in a manner that enhances performance of office routine task.

Oguejiofor and Umeh (2016) postulated that Microsoft access database is an all-encompassing term, which describes anything from an address book, dictionary or file cabinet to a set of computerized data file with sophisticated data relationship. MS Access allows the secretary to create custom database that store information in an organized structure. It provides a visual interface for creating forms, tables, report and queries. It enables the secretaries to send data to and from other database programs such as my SQL, FoxPro and Oracle. Pedraza (2011) asserted that database management system provides the secretary with a wide variety of templates that can be used to speed up database creation process. A template is a ready-to-use database that contains all of the tables, queries, forms, and reports needed for performing a specific task. These templates facilitate a secretary's work performance in the sense that the data can be recorded in such templates to automatically generate information.

Webpage design encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design that enhance secretary's competency include web graphic design; *interface design*;

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authoring, including standardized code and *proprietary software; user experience design; and search engine optimization*. Often many individuals work in teams, covering different aspects of the design process, although some designers cover them all. The term web design is normally used to describe the design process relating to the front-end (client side) design of a website, including writing mark up (Hart & Cieller, 2007).

Horton (2014) defined webpage design as a collection of electronic files that determines the layout, colors, text styles, structures, graphics, images and use of interactive features that deliver pages of an organization. Webpage design therefore, encompasses different skills and technical know-how in the production and its maintenance. Additionally, Ibrahim and Kazeem (2015) explained that webpage design is typically written in static text and other content and stored within the web server file system or may be constructed by server site software when requested. Tony-Okeme and Mohammad (2016) asserted that webpage design refers to the art of creating, modifying and displaying the elements of a web page which are made up of text, graphics, movies links table and forms. Secretary's understanding of the content of a website to achieve competency often depends on the understanding of how the website works. Luke (2012) maintained that the secretary's ability to understand layout, clear instruction and labeling on a website enhance his competency in an organization. In order for a secretary to effectively and efficiently perform routine office tasks, there is need for him or her to competently utilize different ICT resources including database management and webpage design applications among others.

Statement of the Problem

Office Technology and Management (OTM) curriculum aims at equipping the graduates with office and ICT skills that will enable them to perform effectively in any modern office or organization. In today's technological era, graduates generally and OTM graduates in particular need to adequately possess both theoretical and practical ICT skills in order to properly fit into the office of any computerized organization and competently perform the functions of a secretary as recommended by the National Board for Technical Education (2004). However, the level at which the OTM graduate secretaries possess these database management and webpage design competencies depends on the extent of their exposure on the applications in the course of their training. This is why Ernest (2010) averred that OTM graduates who were not trained with the new technologies could not perform as expected in modern offices and would stand the risk of losing their jobs. In support of this, Grace (2015) reported that most OTM graduate workers in south-west of Nigeria were not performing as expected due either to inadequate training

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with modern facilities or other factors. Grace further affirmed that this deficiency will surely mar the achievement of the goals and objectives of their employers and organizations.

The problem of this study is that polytechnics churn out OTM graduates year-in and year-out who are not able to defend their certificates in the modern office of the current technological era.Some of these graduates are absorbed in the polytechnics which provide an opportunity for a type of in-house assessment by their supervisors to provide cogent evidence on their knowledge and competency level in using different applications especially database management and webpage design to confirm the authenticity of the reports of other employers. This will go a long way in enabling authorities of the polytechnics to fashion out suitable strategies to adopt in the programme to ensure that the products are adequately equipped with relevant ICT competencies to satisfy their employers in the modern business and office environment and suitably represent their training institutions.

Purpose of the Study

The main purpose of the study was to determine administrative supervisors' assessment of database management and webpage design competencies possessed by OTM graduate workers' in North-West Nigeria Polytechnics. Specifically, the study determined the:

1. Administrative supervisors' assessment of the level of database management competencies possessed by their OTM graduate workers in polytechnics in North-est Nigeria.
2. Administrative supervisors' assessment of the level of webpage design competencies possessed by their OTM graduate workers in polytechnics in North-West Nigeria.

Research Questions

The following research questions guided the study:

1. What is administrative supervisors' assessment of the level of database management competencies possessed by their OTM graduate workersin polytechnics in North-West Nigeria?
2. What is administrative supervisors' assessment of webpage design competencies possessed by OTM graduate workers in Polytechnics in North-West Nigeria?

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Null Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Male and female administrative supervisors in polytechnics in North-WestNigeria do not differ significantly in their mean ratings onthe level of database management competencies possessed by OTM graduate workers.
2. Administrative supervisors in federal and state polytechnics in North-WestNigeria do not differ significantly in their mean ratings on the level of database management competencies possessed by OTM graduate workers.
3. Male and female administrative supervisors in polytechnics in North-West Nigeria do not differ significantly in their mean ratings on the level of webpage designcompetencies possessed by OTM graduate workers.
4. Administrative supervisors in federal and state polytechnics in North-West Nigeria do not differ significantly in their mean ratings on the level of webpage design competencies possessed by OTM graduate workers.

Method

Descriptive survey research design was used for the study. The area of the study was North-West Nigeria consisting of seven states namely; Kano, Katsina, Kaduna, Kebbi, Jigawa, Sokoto and Zamfara States. Population of the study was 378 administrative supervisors (Rectors, Registrars, Directors, senior administrative officers, Co-coordinators and Heads of Departments and Units) in all the 10 polytechnics in the area. The entire population constituted the sample. Instrument for data collection was a five-point rating scale questionnaire titled "Administrative supervisors' assessment of OTM graduates' database management and webpage design competencies Questionnaire (ASAOTMGDMWDCQ)". The instrument has two clusters with 18 items each with options of very much possessed (VMP), much possessed (MP), moderately possessed (MP2), little possessed (LP) and very little possessed (VLP). The instrument was validated by three experts; two in business education and one in measurement and evaluation fromFaculty of Education, NnamdiAzikiwe University, Awka. Split half method was used to determine the reliability of the instrument with Pearson Product Moment Correlation and a reliability co-efficient value of 0.81 was obtained. The researchers personally administered the instrument with the help of three research assistants who work in the polytechnics. Out of the 378 copies of the instrument distributed, 325 (representing 86%) were retrieved and used for the study. Data collected were analyzed using mean and standard deviation to answer the research questions and determinethe closeness of the respondents' mean ratings. Decision on the research questions was based on the cluster/grand mean scores relative to the real limits of numbers on a 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 accepted when

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the p-value is equal or greater than the alpha level of 0.05 and rejected when the p-value is less than the alpha level. The analysis was done with the Statistical Package for Social Sciences (SPSS) version 16.

Results

Table 1: Respondents' mean ratings on the level of database management competencies possessed by OTM graduate workers in North-West Nigeria Polytechnics

S/N	Database management competencies	$\overline{x}$	SD	Remarks
	Ability to:			
1	Create data with database view	3.14	1.41	Moderately Possessed
2	Create records with design sheet view	3.11	1.46	Moderately Possessed
3	Work with table templates	3.08	1.48	Moderately Possessed
4	Create form with design view	3.56	1.39	Much Possessed
5	Create form with form wizard	3.48	1.42	Moderately Possessed
6	Create report in design view	3.46	1.40	Moderately Possessed
7	Create report in reporting wizard	3.18	1.36	Moderately Possessed
8	Manipulate query wizard	3.24	1.44	Moderately Possessed
9	Create query with design view	3.31	1.39	Moderately Possessed
10	Import data from excel	3.61	1.42	Much Possessed
11	Get data from hypertext markup language document	3.35	1.33	Moderately Possessed
12	Create data base email	3.20	1.32	Moderately Possessed
13	Migrate data into SharePoint	3.11	1.46	Moderately Possessed
14	Migrating data into structural query language server	3.15	1.40	Moderately Possessed
15	Relate data from different field	3.31	1.39	Moderately

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				Possessed
16	Manage visual basic editor	3.37	1.38	Moderately Possessed
17	Sort data in sequence	3.21	1.32	Moderately Possessed
18	Maintain data security	3.44	1.40	Moderately Possessed
	Grand mean	**2.57**		Moderately Possessed

Table 1 shows that the OTM graduate workers much possessed only two of the listed database management competencies with mean ratings of 3.56 and 3.61. The remaining 16 competencies with mean ratings ranging from 3.08 to 3.46 indicates that the graduate workers moderately possessed them. The grand mean score of 2.57 shows that OTM graduate workers in North West Nigeria Polytechnics moderately possessed database management .competencies. Standard deviations for all the items are within the same range witch mean that the respondents are homogenous in their views.

Table 2: Respondents' mean ratings on the level of webpage design competencies possessed by OTM graduate workers in North-West Nigeria Polytechnics

S/N	Webpage design competencies	$\overline{X}$	SD	Remark
	Ability to:			
1	Create web page with note page	2.28	1.58	Little Possessed
2	Create text book to input text	2.05	1.51	Little Possessed
3	Apply background color to a page	2.17	1.49	Little Possessed
4	Apply image to a page	2.11	1.42	Little Possessed
5	Insert pictures on web page	2.10	1.41	Little Possessed
6	Use of font tag to apply different font	2.02	1.33	Little Possessed
7	Use paragraph tag to a page	2.01	1.38	Little Possessed
8	Use space tag to insert space on a page	2.00	1.36	Little Possessed
9	Create hyperlink on web page	1.91	1.29	Little Possessed
10	Publish web page	2.01	1.35	Little Possessed
11	Use marquee tag to a page	2.00	1.34	Little Possessed
12	Use horizontal rule tag	1.98	1.30	Little Possessed
13	Use symbol tag to insert symbol	2.01	1.35	Little Possessed
14	Apply different parameters	2.03	1.35	Little Possessed
15	Apply password tag	2.23	1.49	Little Possessed

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16	Use radio button tag	2.12	1.43	Little Possessed
17	Use check box tag	2.68	1.46	Moderately Possessed
18	Use text area tag to a web page	2.66	1.45	Moderately Possessed
	Mean of means	**2.14**		Little Possessed

Table 2 reveals that OTM graduate workers in North-West Nigerian polytechnics moderately possessed only two out of the 18 webpage design competencies with mean scores of 2.68 and 2.66 and little possessed the remaining 16 with mean ratings ranging from 2.21 to 1.91. The grand mean score of 2.14 shows that the level of webpage design competencies possessed by the OTM graduate workers is little. Standard deviations for all the items are within the same range showing the closeness of the respondents' responses.

Table 3: The t-Test analysis of male and female respondents' mean ratings on database management competencies possessed by OTM graduate workers in North-West Nigeria Polytechnics.

Group	N	$\bar{X}$	SD	df	Standard Error	t-cal	P-value	α	Decision
Male	217	3.01	1.32						
				323	0.07	-0.14	0.00	0.05	Significant
Female	108	2.83	1.40						

Table 3 reveals that the calculated t-value is -0.14 at 323 degree of freedom with p-value of 0.00 which is less than the alpha level of 0.05. This shows that male and female respondents differed significantly in their mean ratings on level of database management competencies possessed by OTM graduate workers in North-West Nigeria polytechnics. Therefore, the null hypothesis was rejected.

Table 4: The t-test analysis of mean ratings between respondents' from federal and state owned polytechnics in North-West Nigeria Polytechnics on database management competencies possessed by OTM graduate workers

Group	N	$\bar{X}$	SD	df	Standard Error	t-cal	P-value	α	Decision
Federal	217	2.32	0.85						
				323	0.07	-0.30	0.00	0.05	Significant
State	108	2.93	1.38						

Table 4 shows that the calculated t-value is -0.30 at 323 degree of freedom and a p-value of 0.00 which is less than the alpha level of 0.05. This means that

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institution ownership significantly influenced the respondents' mean ratings on the level of database management competencies possessed by OTM graduate workers in North-West Nigeria polytechnics. The hypothesis was, therefore, rejected.

Table 5: The t-test analysis of Male and female respondents' mean ratings on web page design competencies possessed by OTM graduate workers in North-West Nigeria Polytechnics.

Group	N	$\bar{X}$	SD	df	Standard Error	t-cal	P-value	α	Decision
Male	217	2.31	1.26	323	0.07	-0.11	0.05	0.05	Not significant
Female	108	2.31	1.30						

Table 5 shows that the calculated t-value is 0.1 at 323 degree of freedom with p-value of 0.04 which is equal to the alpha level of 0.05. This implies that male and female administrative supervisors in polytechnics in North-West Nigeria do not differ significantly in their mean ratings on webpage design competencies possessed by OTM graduate workers. The hypothesis was, therefore, not rejected.

Table 6: The t-test analysis of mean ratings between respondents' from federal and state owned polytechnics in North-West Nigeria Polytechnics on webpage design competencies possessed by OTM graduate workers.

Group	N	$\bar{X}$	SD	df	Standard Error	t-cal	P-value	α	Decision
Federal	217	2.31	1.26	323	0.07	-0.11	0.05	0.05	Not significant
State	108	2.31	1.30						

Table 6 shows that calculated t-value is0.05 at 323 degree of freedom with p-value of 0.05 which is equal to alpha level of 0.05. This means that administrative supervisors in federal and state-owned polytechnics in North-West Nigeria did not differ significantly in their mean ratings on webpage design competencies possessed by their OTM graduate workers. The hypothesis was, therefore, not rejected.

Discussion

Findingsof the study showed that OTM graduates workers in polytechnics in North-West Nigeria moderately possesseddatabase management competencies.. This finding tallies with Garba (2012) which reported that OTM students in North-

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West Nigeria polytechnics were fairly proficient in database management. The finding also supports the recommendation of Asuquo (2010) that OTM graduates need to possess database management skills for office work and self-reliance. The result could be as a result of lecturers' competency in teaching the application which will obviously affect the students both during training and in the workplace on graduation. Moreover, the OTM graduates' may not be adequately motivated to pursue private training in order to improve their level of competencyin using the application if they do not frequently utilize them in their duty performance in the polytechnics.

The study also found that gender and institution ownership significantly influenced the mean ratings of administrative supervisors on database management competencies possessed by OTM graduate workers. This finding agreed with Oguejiofor and Umeh (2016) who reported that there was a significant difference in the mean responses of secretaries in Anambra State civil service on their database management competencies based on the size of the organization. However, the finding contradicts Garba (2012) which reported that male and female OTM students in North-West Nigerian polytechnics do not differ significantly in their mean ratings on their proficiency in database management.

Furthermore, findings of the study showthatthe level of webpage design competencies of OTM graduate workers in North-West Nigeria polytechnics was little.This finding agreed with Okoro and Ndinechi (2013) which reported that OTM lecturers were fairly competent in teaching webpage design which could negatively affect the graduates in employment.The reason for this could be that lecturers' exposure to the application was minimal, hence their incompetence will be reflected in their products. It could also be due to the graduates' lack of enthusiasm in training on the application while in school which could be why Ezenwafor and Onokpaunu (2016) recommended that for the graduates of business education programme (which includes OTM) to acquire the requisite competencies in webpage design such graduates should possess personal computers and engage in self-sponsored training.

The findings revealed no significant difference in the administrative supervisors' ratings of OTM graduates' competencies in webpage design as result of gender and ownership of the institution. This finding supported Ezenwafor and Onokpaunu (2016) which reported that male and female respondents in universities and colleges of educations in Delta State do not differ significantly in their mean ratings on the extent to which they apply web-based instructional technologies in teaching. The finding contradicted the report of Okoro and Ndinechi (2013) that there is significant difference between business educators with teaching

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qualifications and their counterparts without teaching qualifications on the level of competence on webpage design.

Conclusion

Based on the findings of this study, it was concluded that OTM graduate workers in North-West Nigeria Polytechnics do not possess relevant competencies for effective utilization of database management and webpage design applications.

Recommendations

Based on the findings of the study, the following recommendations were made.

1. OTM graduate workers in North-West Nigeria polytechnics should engage in self-sponsored in-service training programmes to improve their competencies in database management and webpage design applications to enhance their work performance.
2. Administrative supervisors in North-West Nigeria polytechnic should recommend approval of sponsored in-service training for their OTM graduate workers to enhance their computer application competencies.
3. Management of the institutions covered in the study should ensure that ICT resources are available and functional in the OTM department for use by lecturers, students and graduate workers.
4. Employers of OTM graduates outside the polytechnics should motivate their employees to improve on their computer application competencies by providing the resources and sponsoring them for in-service training programmes.

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