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# Assessment of Skills Possessed by Secretaries for Effective Electronic Records Management in Polytechnics in North-Central, Nigeria

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*Keywords: electronic records, records creation, records retention, records disposition.*

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# Assessment of Skills Possessed by Secretaries for Effective Electronic Records Management in Polytechnics in North-Central, Nigeria

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*Abstract-* The study was aimed at assessing skills possessed by secretaries for effective electronic records management in polytechnics in North-Central, Nigeria. Three research questions guided the study. Two null hypotheses were tested at 0.05 level of significance. The population of the study comprised 366 secretaries in ten polytechnics in North-Central, Nigeria. forty one questionnaire items were developed and validated by two experts. Cronbach Alpha coefficient measure of internal consistency was use to test the reliability value of the instrument. The results of the reliability test were as follows, 0.97, 054, and 0.94.The results of the reliability test yielded a value of 0.82 for the entire items. The Mean and standard deviation were used to answer the three research questions. The z- test and ANOVA were used to test the hypotheses at 0.05 level of significance. The findings revealed that out of the three electronic records management skill areas assessed, two were moderately possessed by secretaries while the secretaries possessed lowly in electronic records disposition skills. This implies that secretaries in polytechnics in North-Central, Nigeria do not optimally possess skills for electronic record management. The findings further show that there was a significant difference in the mean ratings of secretaries in federal and state owned polytechnics regarding the level to which they possess skills for effective electronic records management. Also, there was a significant difference in the mean ratings of secretaries with OND/NCE, HND/Bachelor degree, and Higher degree qualifications in polytechnics regarding the level to which they possess skills for effective electronic records management. Based on the findings, it was recommended among others that Secretaries in polytechnics in North-Central, Nigeria should immediately be retrained by employers, through in-service training, workshops, seminars, and conferences. These training programmes should incorporate the skills for effective electronic records management, especially electronic records disposition skills for effective records management.

*Keywords: electronic records, records creation, records retention, records disposition.*

## I. Introduction

Office systems have moved from typewriters, handwriting and manual operational procedures to full automation of most offices where such terms as word processing, data processing, reprographics and micro-graphic are used to describe many technological processes. Supporting this, Okolo (2007) revealed that the improvement in technologies has turned heap of files that are consulted very often to retrieve information into computers, fax machines, internet/intranet where papers speak no volumes anymore. Office automation and technology allow office functions like typing, filing, storing, and retrieving to be automated. It can be said that the contemporary business circle is computerized and secretaries therefore seriously need the knowledge of the computer and other information technology skills to enable them perform more effectively in an automated office.

The relevance of records in an organization cannot be overemphasized. Records are the memory of an organization. They are the assets of an organization that are created, processed, transmitted, used, stored, retrieved, retained, and eventually destroyed. Records, according to International Council on Archives (ICA) (2008), is a written or oral evidence that information has been collected and kept for use. The most common records (such as forms, correspondence, reports and books) are written, printed or typed on paper. Oral records capture the human voice on tape, and are stored on cassettes or on other magnetic media.

An electronic record is any information that is recorded in machine readable form. Computers generate large volumes of paper records that can be managed using the electronic records management system. However, organizations are increasingly choosing to not only create records electronically, but also to store, retrieve and use them in computerized form for long periods. Electronic records unlock the contents previously difficult to access in paper form, enable more effective sharing of information and contribute to knowledge network flow. The importance of records management is highlighted by the need for evidential proof of activities in account or dispute. Organizations and individuals thus cannot afford to downplay the art of proper records management systems.

A secretary has been conceptualized differently by different authors. Anderson in Oguejio for and Nwogu (2014) saw a secretary as one who can think for you, act for you, anticipate your whims, and increase your output phenomenally. The Professional Secretaries

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International (PSI) in Akinleye (2012) defined a secretary as an executive assistant who has mastery of office skills, demonstrates the ability to assume responsibility without direct supervision, exercises initiative and judgment and makes decisions within the scope of assigned authority. From the foregoing, a secretary could be defined as an officer, who is in charge of records, correspondence, minutes of meetings, and related affairs of an organization. A secretary assists his boss and equally acts for the boss when directed. The secretary must accurately think and act fast especially in an automated office. This has informed the need for an assessment of the secretary's skills in electronic records management.

Assessment is a broad term that includes all of the various methods to determine the extent of an individual's achievement. Assessment refers to the methods used to determine skill gap of an employee within an organization (Singh & Goodman, 2006). Assessment is essential because it gives the employee a sense of what is necessary to perform at a higher level, and specifically what skills are necessary to develop for success. To improve on the skills of secretaries therefore, there is the need to assess or measure their existing skills against the estimated skills in order to close the gap which exists as a result of lack of the required skills among the secretaries in organizations since secretaries play pivotal role in the achievement of organizational goals.

This implies that both male and female secretaries work in federal and state tertiary institutions. According to Nakpodia, (2011), any institution, primary; secondary or tertiary; large or small; rural or urban; government or state owned and privately sponsored; gather data to expedite action and to furnish information about students or former students. Therefore, secretaries, irrespective of their gender and where they work, are required to possess electronic records management skills in order to cope with the increasing use of electronic information technologies to create and maintain records as with records in other formats.

Records management skills are essential and are required to be possessed by secretaries because an organization cannot exist without records which have to be created and captured, retained for the period as specified by the organization's retention schedule. Finally, when records become inactive, they have to be disposed appropriately. All these are anchored on the secretary.

Despite the benefits of electronic records management, most secretaries in polytechnics still find it difficult to effectively manage records using the electronic system. Secretaries are required to possess electronic records skills of creation, retention and disposal, but there seems to be a gap in the level to which the skills are possessed by secretaries working in Polytechnics in North-Central, Nigeria. This study concentrated on the aspects of record creation, retention and disposition with a view to verifying empirically the extent the skill areas are possessed by secretaries for effective electronic records management in Polytechnics in the North-Central, Nigeria.

*a) Research Questions*

The study was guided by the following research questions.

1. To what extent do secretaries possess electronic records creation skills for effective records management in polytechnics in North-Central, Nigeria?
2. To what extent do secretaries possess electronic records retention skills for effective records management in polytechnics in North-Central, Nigeria?
3. To what extent do secretaries possess electronic records disposition skills for effective records management in polytechnics in North-Central, Nigeria?

*b) Hypotheses*

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

1. There is no significant difference in the mean ratings of secretaries in federal and state owned polytechnics on the extent of skills possessed for effective electronic records management in Polytechnics in North-Central, Nigeria.
2. There is no significant difference in the mean ratings of secretaries with OND/NCE, HND/Bachelor degree, and Higher degree qualifications on the extent of skills possessed for effective electronic records management in Polytechnics in North-Central, Nigeria.

## II. Literature Review

Literatures relevant to the topic under study are critically reviewed to provide a good basis for understanding of this research work.

*a) Electronic Records*

An electronic record is any information that is recorded in machine readable form. Electronic records include numeric, graphic, audio, video, and textual information which is recorded or transmitted in analog or digital form such as electronic spreadsheets, word processing files, databases, electronic mail, instant messages, scanned images, digital photographs, and multimedia files (State of Florida, 2009). Similarly, the Government of South Australia (2012) stated that electronic records are records that are in machine-readable form. They may be any combination of text, data, graphics, images, video, audio, e-mail, internet content, documents, spreadsheets, databases, etc., that are created, maintained, modified or transmitted in digital form by a computer or related system.

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According to the University of California (2012), electronic records unlock the content previously difficult to access in paper form, enable more effective sharing of information and contribute to knowledge network flow. They support evidence-based policy making by providing reliable evidence of past actions and decisions, but to do so, they must be managed so as to retain their integrity and authenticity.

According to Stewart and Westgate (2008), an electronic record is "a record stored on electronic storage media that can be readily accessed or changed." An electronic record is often referred to as a machine readable record, that is, digitized and coded information that, to be understood must be translated by a computer or other type of equipment.

University of Greenwich records management Office (2009) pointed out that electronic records have certain attributes including the content or the intellectual component of the document, the structure and the context. The structure represents a second attribute and consists of the appearance, arrangement or format of the content of the document and the context which contains the background information that helps explain the meaning of the document.

Keeping records electronically saves paper, printer and toner costs by reducing the need to print paper documents as single electronic versions can be used over and over. Electronic records enhance staff productivity since less time is spent searching for documents or trying to find the most recent version. Moreover, records are invaluable. Keeping complete records from the beginning can save time and money. Records are also viewed as an important tool to ensure that obligations of an organization are met. Furthermore, they are also of value for reference and management decisions. Accuracy of records will also prevent excessive residues by ensuring that withdrawal time has been met (Bock, 2011).

*b) Records Creation*

Traditionally, records have been physical objects. They were recorded on a medium (usually paper) by means of symbols (letters, numbers, figures and so on) that people could access, or read, directly. Records creation and capturing involves developing consistent rules to ensure integrity and accessibility, deciding on systems to log and track records, and following specific procedures for registering, classifying and indexing (Yusof & Chell, 2003).

According to Denyer (2011), the first phase in the life of a record is its creation and capture. The author stated that in a fully electronic environment, new records creation skills are required of creators and users of records. They will have much more responsibility for correctly identifying and dealing with electronic records at the point of creation; and these shifts imply significant change in attitudes and behaviour towards records creation and use. Furthermore, the author noted that if the user creating the records does not carry out the correct action, the records may be lost.

The University of Albany (2008) stated that records are created or captured and identified to support the business process and meet all records management requirements. The university of Albany went further to add that organizations must capture or create records necessary to carry out a business process. Records must be identified when they are captured to ensure their accessibility, usefulness, and preservation.

Electronic records are recorded on a medium such as a magnetic tape or a disk, but their status as records is not dependent upon that medium; in effect they are 'permanently' recorded on the medium, but the medium is not the record. Electronic records must be viewed as logical rather than physical entities because they cannot be read directly without the aid of computer software and hardware to interpret the codes used to represent letters, numbers, figures and so on (State of Florida, 2010).

Dafiaghor (2012) noted that if records are to survive and be useful in supporting the functions of governments and preserving a cultural record of the past, the concept of passive reception will have to change to one of active involvement at the point of creation. Secretaries will have to be equipped with the skills required to contribute effectively to an electronic working environment. Records management will require greater discipline and greater creativity than in the past.

Electronic records management provides the catalyst for secretaries to become involved in the design of information technology systems to ensure that records are controlled from the beginning of the records life cycle. Controls must be applied from the outset if the records are to be protected as reliable sources of information over time. Moreover, because the control of electronic records is dependent upon technology, Ekula (2010) asserted that secretaries must become more aware of how different technologies work and how they affect records and record keeping.

According to the University of Portsmouth (2009), each record that is created is subject to administrative and legal rules. These rules govern the entire life cycle of the record, from creation to retention and disposal. As a general rule, many of the administrative and legal requirements that apply to paper records also apply to electronic records. A legal analysis can help to identify the original legal requirements associated with the school process they want to automate.

The question "What constitutes a record?" is no longer that simple when you are talking about an electronic record. Electronic records can be created from paper records and stored in electronic record keeping systems by scanning or by transcription.



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However, they can also be created and stored for varying periods of time in the application systems that host the transactions that create these records. Therefore, risks associated with the development and maintenance of that system also pose risks to the electronic records. These risks must be managed from the beginning of system development process so that they can be mitigated throughout the entire life cycle of the system (Marutha & Ngulube, 2010).

There is perhaps no other information technology in recent memory that has grown as fast as electronic mail. A recent study by the School of Information Management and Systems at the University of California found that approximately 31 billion messages are sent daily via e-mail. Electronic mail software programs, commonly called e-mail, have become the communications method of choice for many public officials and public employees. E-mail messages are electronic documents created and sent or received by a computer system. This definition applies to the contents of the communication, the transactional information, and any attachments associated with such communication. Thus, e-mail messages are similar to other forms of communicated messages, such as correspondence, memoranda, and circular letters (Rockfeller, 2006).

Ayandele and Adeoye, (2010) asserted that secretaries as records managers need to acquire a new range of skills to manage new kinds of systems in new contexts. Some of the skills according to the author include: text input, file-naming, file-formatting, text-formatting, file conversion from an obsolete to a new software; and conversion of paper documents to digital ones by the use of ICT facilities.

*c) Records Retention*

One way to manage records is through effective records retention schedule. Record Retention Schedule means the schedule that identifies specific institution records for which a retention period has been specified. The retention periods are based on law or regulation, legal or contractual requirements, or set at the discretion of management. Oliverio, Pasewark and White (2006) opined that a retention schedule is a valuable records management tool that identifies how long particular types of records should be kept. The authors asserted that retention requirements vary among industries and states. A retention schedule tells how long to keep records in the office, when to destroy them, and when to transfer them to inactive storage facilities. The business of records retention schedule is to reduce the volume of inactive records, decongest the records and enable the secretary determine active records-thus facilitating quick and easy retrieval of such records when required for decision making.

Kenneth (2013) noted that electronic records management strategy should include records retention schedules for electronic records. The economic objectives of a retention programme is to stabilize the growth of records at about the same time that new ones are created. Many organizations reduce their storage costs by up to one third by implementing sound retention programme.

Government of South Australia (2012) pointed out that the purpose of a records retention schedule is to serve as an on-going authorization for the management and disposition of records. Because they have similar responsibilities and organizations, many local government entities have developed general records retention schedules for all the records commonly created by their members. In order to achieve compliance with existing requirements, public entities need to establish policies and procedures to ensure that electronic records and their documentation are retained as long as required by the applicable retention schedule. These retention procedures according to the University of Greenwich Records Management Office (2009), should include the following provisions: scheduled disposition of all electronic records, as well as related documentation and indexes, by applying the Institutional Records Retention Schedule; scheduled Transferring of copies of permanent electronic records and any related documentation and indexes to the Institution Archives facility or other approved facility for the safekeeping of permanent records.

According to State of Florida (2010), there are two types of retention schedules: General Records Schedules and Individual Records Schedules. General Records Schedules establish retention requirements for records common to several or all government agencies, while Individual Records Schedules establish retention requirements for records that are unique to particular agencies. All of these retention schedules establish the minimum length of time a record series must be maintained. Bantin (2008) opined that retention schedules do not specify when records must be disposed of; they indicate how long records must be retained before they can be disposed of. Organizations have the discretion to retain records beyond the minimum retention requirements if needed for administrative, legal, or other purposes.

System requirements and design must reflect the fact that records must be maintained for the length of their retention period in an accessible, reliable and authentic manner. Osakwe (2011) stated that secretaries need to ensure that electronic records remain accessible and useable to support the primary purposes for which they were created and any predicted secondary purposes for as long as the records must be legally retained. System designers should also remember to account for the fact that a record may need to be kept longer than its retention period. For example, records disposal must be suspended in the

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face of litigation, administrative hearing, or an open records request.

Egwunyenga (2009) reiterated that the originating entity must maintain the reliability and authenticity of the records for the time period established by the records retention schedule. To do so, the originating entity must maintain the records and all related metadata, system documentation, procedures and policies, and proofs of authenticity (e.g., electronic signatures) for the entire time period established by the records retention schedule. All data elements that comprise a record of a business transaction must be accessed, displayed and managed as a unit for the entire time period established by the records retention schedule.

*d) Records Disposition*

The word "disposition" when applied to records management does not necessarily imply destruction or garbaging. It is not also preservation per se but is used to describe a system of proper archiving or disposing of records which are no longer frequently referred to or used. Disposition is the final stage in any record's lifecycle, resulting in destruction of the records or their permanent, archival retention. Oliverio, Pasewark and White (2006) opined that disposing of a record involves transferring it to inactive storage or destroying it. When a record is no longer needed. It should be destroyed in order to make room for current records. The cycle ends when a record is destroyed.

Most institutions have laws establishing a process that determines which records are to be destroyed and how long those records must be kept before destruction. Johnson and Kallaus, (2008) described records disposal as the process whereby the organization, through its records manager, destroys/erases ephemeral records or transfers archival valued records to an archival institution for permanent safe keeping. According to the National Archives and Records Service of South Africa (2006), records disposal refers to "the action of either destroying/deleting a record or transferring it into archival custody".

Proper disposition is an important part of any records management program. All of the records an organization creates should be described on a records retention schedule as noted above. The schedule establishes the length of time the records should be retained by the organization. As part of everyday use of computer, Government of South Australia (2012) suggested the destruction of electronic records probably by deleting them. This often involves two stages. Files deleted from a computer c: drive are often placed in a "recycle bin", and some e-mail programs store deleted items in a "deleted items" folder. There is need to empty these periodically. It is good practice, if the email software has the facility, to set up deleted folder to empty on exit automatically.

However, this sort of deletion does not eradicate the data. If a file or e-mail is deleted, it remains on the disk in a hidden form, and, for information held on servers or shared drives, will be kept on a backup tape for a specified period. Likewise, reformatting a disk may leave hidden data on the disk. It is possible to retrieve information deleted in this way. When dealing with sensitive information, further measures are necessary to erase the data fully (International Organization for Standardization, 2011).

In the case of information held on servers or shared drives, this will be the responsibility of the relevant computer service. International Standard Organization (2011) pointed out that if an organization e-mail service is used, then this information will be stored on a central server, and will need to take no action other than ensuring that all the "deleted items" folders have been emptied. The computer service will make arrangements for the appropriate disposal of the server and the backup tapes in due course.

If the secretary has saved information to a PC or Mac hard drive, floppy disk, CD or other storage medium, she must take measures to ensure that the information is fully deleted before disposing of the item. For portable media such as a disk or CD, the best way of destroying the information they contain is to destroy the items concerned. Floppy disks should be bent out of shape, broken, or cut into pieces. CDs should be broken, or the secretary should score lines over them (Popoola & Oluwole, 2007).

According to Yeo (2011) the sensitivity or confidentiality of the information contained in the record will dictate the appropriate method of destruction. For example, if the record contains no sensitive information and would simply be thrown out in paper form, then overwriting or reformatting the media would probably be sufficient to delete the electronic record. However, if the record contains highly sensitive or confidential information and is the type of record that would be shredded in paper form, then physically destroying the media may be necessary.

The destruction of electronic records is further complicated by the backup procedures that are so important to the overall reliability of the system. The proliferation of duplicate records located on the daily, weekly, monthly and other backups created for disaster recovery and business continuity process necessitates extra care in the destruction of electronic records. Procedures must exist for the media and frequency of both individual record (such as databases) and system backups. In addition, procedures for the physical destruction of the official records must include the destruction of the backup and should be detailed enough to specify the number of overwrites that should occur to a backup tape or the method of physical



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destruction of the media in order to ensure the total destruction of the records (William & Ashley, 2009).

Winkler (2008) observed that for many years, it was common practice for offices to simply buy additional computer servers as quickly as the existing ones are filled up. The author added that because the initial cost of computer storage was relatively inexpensive, there was little incentive for managing and disposing of electronic information in a logical way. Consequently, the author stated that the office is overwhelmed by bloated database systems designed without purge functions to remove unneeded data and an enormous amount of unmanaged documents located in hundreds of individual and shared network drives. The author also identified methods of disposal after necessary purge or archival review as: surplus (data could be transferred to newer ones), recycling, garbaging, expunging, shredding or pulverizing.

## III. Theoretical Framework

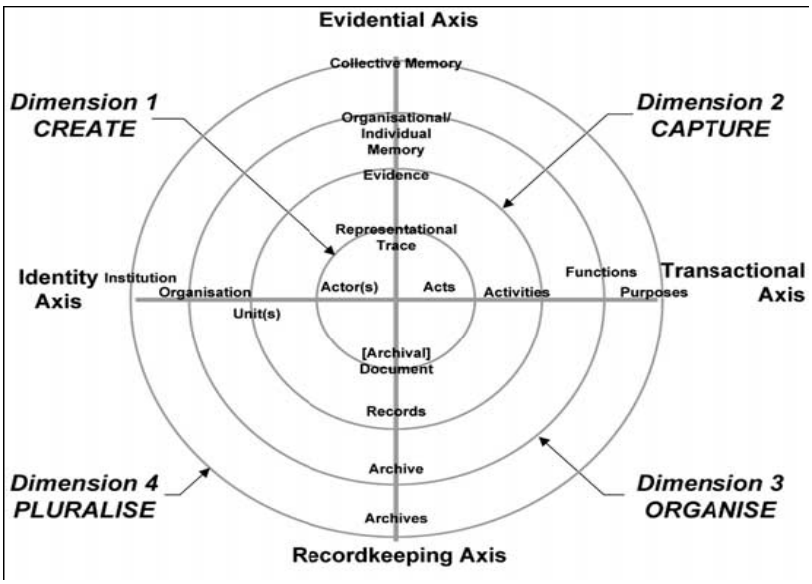
### a) *The Records Continuum Theory*

The records continuum theory was developed by Frank Upward in the 1990s as a response to evolving discussions about the challenges of managing digital records and archives in the discipline of Archival Science. The theory provides a graphic tool for framing issues about the relationship between records managers and archivists, past, present and future, and for thinking strategically about working collaboratively and building partnerships with other stakeholders.

The records continuum is defined as the consistent and coherent process of records management throughout the life of records from the development of recordkeeping systems through the creation and preservation of records, to their retention and use as archives (IMT, 1999). The concept of a Records Continuum was subsequently promoted in the records management field because it addressed the management of both paper-based and electronic records. The theory consolidated the stages of the Records Life Cycle concept into four, namely: creation, classification, scheduling and maintenance, and use of information (Atherton, 1985). Under the Records Continuum theory, archivists and records managers would be involved in all the stages of managing records. This enables the creation of the right records containing the right information in the right formats; organizing the records to facilitate their use; systematically disposing of records that are no longer required; and protecting and preserving records.

In diagrammatic form, the theory is represented by four concentric circles. As represented in the Figure below, the records continuum theory provides an integrated approach to managing records, rather than one made up of separate stages. Its four levels of perspective include: Dimension 1, the regime applies itself to identifying records management actions and ensures that reliable evidence of them is created by capturing records of the related/supporting transactions; Dimension 2, recordkeeping systems manage "families" of transactions and records series documenting processes, hence intellectual control of records relating to the arrangement and description of both records and archives; Dimension 3 presenting RM actions which relate to the maintenance and use of records, while archives management actions relate to the description of archives; and Dimension 4 which relates to physical control where disposal of records is by destruction, or their transfer to the archives, while archives management actions relate to the preservation and use of archives.

The Record Continuum Theory




*Source: https://en.m.wikipedia.org/.,,/the.*



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The axes as illustrated here represent major records management themes (transactional, identity, evidential and recordkeeping) while the circles represent the dimensions of the continuum (create, capture, organize and pluralize). The figure shows that with a digital system, records do not pass through distinct stages, but the stages act as a point of reference rather than as functions of records management. These stages are interrelated by the records continuum theory, forming a continuum in which managers (secretaries) are involved to varying degrees in the management of recorded information. Therefore, the theory calls for secretaries to operate at the appropriate stages of the records continuum to meet the objectives of records management.

In essence, the records continuum theory provided this study with a framework which enabled it to assess whether a broader legal and regulatory environment, ICT infrastructure and human resource capacity exists for the Polytechnics in North-Central, Nigeria to manage their electronic records.

## IV. Methods

The survey research design was employed in this research. The design was applied because according to Saunders, Lewis and Thornhill (2009), a survey design allows the collection of a large amount of data from sizeable population in a highly economical way usually involving the use of questionnaire administered on a sample. The focus group is Secretaries working in polytechnics in North-Central, Nigeria. The population comprised 366 secretaries drawn from ten polytechnics in the North-Central, Nigeria. A structured questionnaire containing 41 items in three sections A, B, and C was used for the data collection. The research instrument was subjected to face and content validity. Two experts from Nnamdi Azikiwe University, Awka validated the instrument. To estimate the reliability of the research instrument employed for data collection, data collected were analyzed using Cronbach Alpha coefficient measure of internal consistency. The results of the reliability test were as follows, 0.97, 054, and 0.94.The reliability value for the entire instrument is 0.82. These results were considered high enough to regard the instrument as reliable (Mehren & Lehmann, 1991). 366copies of questionnaires were administered to the subjects personally by the researchers with the help of research assistants. Out of 366 copies of the questionnaire distributed, 339 copies representing 93% were duly completed and returned. The researcher employed appropriate statistical tools for data analysis. The statistics mean and standard deviation were used to answer the research questions while the statistical tool of z-test and One-Way Analysis of Variance (ANOVA) were used to test the two hypotheses formulated for the study at 0.05 level of significance. The decision rule is that if the f-calculated is less than or equal to the f-critical value at 0.05 level of significance, the null hypotheses were accepted and if f-calculated is greater than the f-critical value, the null hypotheses were rejected.

The questionnaire adopted a five point response scale of Very High Extent (VHE) 5, High Extent (HE) 4, Moderate Extent (ME) 3, Low Extent (LE) 2 Very Low Extent (VLE) 1.

### a) Results

#### i. Research Question 1

To what extent do secretaries possess electronic records creation skills for effective records management in polytechnics in North-Central, Nigeria?

*Table 1:* Respondents' mean ratings on the extent of electronic records creation skills possessed for effective records management (N=339)

| S/N | Electronic Records Creation Skills | Mean | SD | Decision |
|---|---|---|---|---|
| 1 | Start an application, enter text and create a file | 3.95 | 1.21 | High Extent |
| 2 | Select items from a pull-down menu | 3.99 | 1.04 | High Extent |
| 3 | Create, name and format folder and Template | 4.09 | 1.79 | High Extent |
| 4 | Perform different mouse activities | 3.93 | 1.72 | High Extent |
| 5 | Address envelops and label | 3.19 | 1.25 | Moderate |
| 6 | Create letters and email on-line and off-line | 3.86 | 1.51 | High Extent |
| 7 | Identify, select and open icons | 3.77 | 1.13 | High Extent |
| 8 | Open and work with more than one application at a time (multi-tasking) | 3.13 | 1.21 | Moderate |
| 9 | Create tables and charts | 3.28 | 0.98 | Moderate |
| 10 | Create data on spreadsheets and database applications | 2.16 | 0.66 | Low Extent |



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| | | | | |
|---|---|---|---|---|
| 11 | Create filing system for the organization | 3.37 | 1.16 | Moderate |
| 12 | Classify, code and arrange records | 3.60 | 1.37 | High Extent |
| 13 | Use modern input devices such as scanners for records creation | 3.04 | 0.93 | Moderate |
| 14 | Place and confirm orders online (e-marketing) | 3.39 | 0.73 | Moderate |
| 15 | Encode job adverts on cyberspace/book appointment online | 2.20 | 0.67 | Low Extent |
| 16 | Create PowerPoint graphics/slides of business products to be sent online (e-marketing) | 3.22 | 0.99 | Moderate |
| 17 | Generate and send electronic mails | 3.45 | 1.06 | Moderate |
| 18 | Create password | 2.02 | 0.62 | Low |
| 19 | Use input device such as digital camera for records creation | 2.01 | 0.62 | Low |
| 20 | Use touch-screen modem input device for records Creation | 2.03 | 0.62 | Low |
| 21 | Use light pens to input data | 2.11 | 0.65 | Low |
| 22 | Use modern input device such as trackballs | 2.08 | 0.64 | Low |
| | **Mean** | **67.87** | **1.02** | **Moderate** |
| | **Cluster Mean** | **3.09** | | |

Data in Table 1 shows that out of 22 listed skills, 7 were rated high, 8 were rated moderate while the remaining 7 were rated low. Among the items rated high are: items 1, 2, 3, 4, 6, 7, and 12 with mean scores ranged from 3.77 to 4.09. Items 5, 8, 9, 11, 13, 14, 16, and 17 with respective mean scores ranged from 3.04 to 3.45 were rated moderate. Furthermore, item numbers 10, 15. 18, 19, 20, 21, and 22 were rated low with mean scores between 2.01 to 2.20. The cluster mean of 3.09 and a standard deviation of 0.62-1.79 showed closeness in opinions of the respondents on skills possessed by secretaries for effective electronic records management. This shows that the secretaries possess electronic records creation skills to a moderate level.

ii. *Research Question 2*

To what extent do secretaries posses electronic records retention skills for effective records management in polytechnics in North-Central, Nigeria

*Table 2:* Respondents mean ratings on the extent of electronic records retention Skills possessed for effective records management (N=339)

| S/N | Electronic Records Retention Skills | Mean | SD | Decision |
|---|---|---|---|---|
| 23 | Retain electronic records for the period as determined by the content, nature and purpose | 3.94 | 1.21 | High |
| 24 | Retain records according to the length of their activeness | 3.86 | 1.51 | High |
| 25 | Retain records based on electronic management guidelines | 3.11 | 0.95 | Moderate |
| 26 | Retain records based on the optimum retention Period | 2.29 | 0.70 | Low |
| 27 | Retain records based on the various types of retention schedules | 2.17 | 0.66 | Low |
| 28 | Retain records based on their values to the Institutions | 3.70 | 1.13 | High |
| 29 | Retain records based on laws and best practices in records retention | 3.49 | 1.07 | Moderate |
| 30 | Retain records based on policies and procedures of the institutions | 3.70 | 1.13 | High |
| 31 | Retain records based on the metadata properties | 3.08 | 1.50 | Moderate |
| | **Mean** | **29.24** | **1.10** | |
| | **Cluster Mean** | **3.25** | | **Moderate** |



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Information contained in Table 2 shows that out of the 9 items listed, 4 were rated high, 3 items were rated moderate while 2 items were rated low. Among the items rated high 23, 24, 28, and 30 with mean scores ranging from 3.69 to 3.97. Items 25, 29, and 31 were rated moderate with mean scores of 3.08 to 3.49 respectively. The items rated low are 26 and 27 with mean scores of 2.17 and 2.29. Table 2 had a cluster mean of 3.25 and a standard deviation between 0.66-1.5. This indicates closeness in opinions of the respondents on electronic records retention skills possessed by secretaries for effective electronic records management. It can therefore be concluded that the secretaries possess electronic records retention skills to a moderate level.

iii. *Research Question 3*

To what extent do secretaries posses electronic records disposition skills for effective records management in polytechnics in North-Central, Nigeria?

*Table 3:* Respondents mean ratings on the extent of electronic records disposition skills possessed for effective records management (N=339)

| S/N | Electronic Records Disposition Skills | Mean | SD | Decision |
|---|---|---|---|---|
| 32. | Use the institutional disposal schedule with Legal backing | 2.24 | 0.69 | Low |
| 33. | Keep off-site back-ups | 2.25 | 0.69 | Low |
| 34. | Use microfilm and microfiche devices for large data preservation | 2.25 | 0.69 | Low |
| 35. | Recycle records as appropriate | 2.25 | 0.69 | Low |
| 36. | Involved in archival review when necessary | 2.27 | 0.70 | Low |
| 37. | Purge database or system of unneeded data from time to time | 2.27 | 0.70 | Low |
| 38. | Use secondary devices to hold data for disposition | 2.28 | 0.70 | Low |
| 39. | Supervise actual shredding of confidential Sensitive records no longer needed | 2.13 | 0.65 | Low |
| 40. | Destroy records in accordance with retention Schedule | 2.02 | 0.62 | Low |
| 41. | Supervise actual pulverizing of confidential Sensitive records no longer needed | 2.06 | 0.63 | Low |
| | Mean | 22.02 | 0.67 | |
| Low | | | | |
| | Cluster Mean | 2.30 | | |

iv. *Electronic records dispositions*

Data in Table 3 reveals that out of the 10 listed items, all were rated low. The items have mean scores between 2.02 to 2.28. The cluster mean of 2.20 falls within the limit of low extent and a standard deviation between 0.6.2-0.70 reveal closeness in opinions of the respondents on electronic records disposition skills possessed by secretaries for effective electronic records management. Therefore, it can be concluded that the secretaries possess low electronic records disposition skills.

*b) Test of Hypotheses*

i. *Hypothesis 1*

There is no significant difference in the mean ratings of secretaries in federal and state owned polytechnics on the extent of skills possessed for effective electronic records management in North-Central, Nigeria.

*Table 4:* z-test analysis of the mean ratings of secretaries in Federal and State owned polytechnics on the extent of skills possessed for effective electronic records management (N=339)

| Variables | N | Mean | SD | df | z- cal | z-crit. | Decision |
|---|---|---|---|---|---|---|---|
| Federal | 142 | 1.00 | 0.00 | 337 | 827.5 | 1.96 | Significant |
| State | 197 | 1.85 | 0.35 | | | | |

Information in Table 4 shows that the calculated z-value of 827.5 is greater than the critical z-value of 1.96 (827.5>1.96) at 0.05 level of significance and 337 degree of freedom, hence the null hypothesis was rejected. This implies that the respondents from Federal and State owned polytechnics significantly differ in their mean ratings at the level to which the secretaries possess electronic records management skills. Hence, the null hypothesis is rejected.



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ii. *Hypothesis 2*

There is no significant difference in the mean ratings of secretaries with OND/NCE, HND/Bachelor degree, and Higher degree qualifications on the extent of skills possessed for effective electronic records management in Polytechnics in North-Central, Nigeria.

*Table 5:* One-way Analysis of Variance (ANOVA) for differences in the mean ratings of secretaries with OND/NCE, HND/bachelor degree and higher degrees on the extent of skills possessed for effective electronic records management (N=339)

| Variables | N | Mean | SD | df | f-cal | f-tab | Decision | Post HOC test |
|---|---|---|---|---|---|---|---|---|
| Non-bachelor degree | 231 | 1.39 | 0.49 | 2 | 85.7 | 1.96 | S | Bachelor Degree |
| Bachelor degree | 77 | 2.00 | 0.00 | | | | | |
| Postgraduate degree | 31 | 1.58 | 0.00 | | | | | |

Result in Table 5 shows that the f-cal value of 85.7 is greater than the f-tab value of 1.96 at the degree of freedom of 2 at 0.05 level of significance. This implies that secretaries with OND/NCE, secretaries with HND/Bachelor degree and secretaries with Higher degree significantly differ in their mean ratings of the extent to which they possess the skills for effective electronic records management, hence the null hypothesis is rejected. In order to determine the direction of difference, a post hoc test using scheffe's test was conducted. The results of the post hoc test shows that the direction of difference were secretaries with HND/Bachelor Degree. This means that secretaries with HND/Bachelor Degree possessed the electronic records management skills better than the secretaries with OND/NCE and Higher Degree.

## V. Discussion

The discussion of results obtained from the presentation and analysis of data for the study were presented below.

The results of the findings of the study under electronic records creation skills revealed that secretaries in polytechnics in North-Central, Nigeria moderately possessed electronic records creation skills. Though, Ahukannah and Ekelegbe (2008) opined that secretaries are persons who have the mastery of office skills, demonstrate the ability to assume responsibility with minimum or no supervision. These skills require professionalism, training, ethics, norms and display of electronic records management. Denyer (2011) observed that the first phase in the life of a record is its creation and capture, hence, secretaries are required to possess records creation skills to carry out their duties effectively. The electronic records creation skills being moderately possessed by secretaries are grossly inadequate for the current age where electronic records management is pivotal.

The findings of the study on electronic records retention skills revealed that the respondents moderately possessed electronic records retention skills. Electronic records retention are concerned with the retention of electronic records for the period as determined by the content, nature and purpose; retain records according to the length of their activeness; retain records based on electronic management guidelines; and retention of records based on the optimum retention period. It was observed from the study that large percentage of the secretaries moderately possessed the skills to retain records based on laws and best practices in records retention; and to also retain records based on the metadata properties. This finding corroborated with Akporhonor (2007) and International Records Management Trust (2009) that electronic records should be retained at least as required by law or best practices. Information in Table 3 revealed a low extent of electronic records disposition skills possessed by secretaries. These skills involve the use of institutional disposal schedule with legal backing; keep off-site back-ups; and use microfilms and microfiche devices for large data preservation. Again, the electronic records disposition skills found to be low include recycle records as appropriate; involve in archival review when necessary; destroy records in accordance with retention schedule; and supervise actual pulverizing of confidential/sensitive records no longer needed. These findings are consistent with the views of Akporhonor (2007) that most tertiary institutions in Nigeria lack record retention and disposal schedule.

The findings further shows that there was a significant difference in the mean ratings of secretaries in federal and state owned polytechnics regarding the level to which they possess electronic records management skills. Also, there was a significant difference in the mean ratings of secretaries with OND/NCE, HND/Bachelor degree, and Higher degree qualifications regarding the level to which they possess electronic records management skills. This implies that secretaries with HND/Bachelor Degree possessed the electronic records management skills better than the



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*a) Conclusion*

Based on the findings of this study, it could be concluded that secretaries in polytechnics did not possess skills for electronic records management to a high extent to be able to manage records effectively. This would, no doubt, impact negatively on their overall performance. It was also noted that out of the basic electronic records management aspects assessed in the study, two of them namely: electronic records creation and retention were moderately possessed by the secretaries, while electronic records disposition skills were possessed to a low extent by the secretaries. However, it is necessary for secretaries to possess the required electronic records management skills especially electronic records disposition skills for ensuring efficient management of records created and stored in computerized systems in order to adequately carry out routine office tasks.

It could also be concluded that proper electronic records management leads to good management of educational institutions because activities in polytechnics are based on access to the information contained in records. Hence, effective electronic records management plays a significant role in polytechnic education in North-Central, Nigeria.

*b) Recommendations*

Based on the findings of this study, the following recommendations are made:

1. Secretaries in polytechnics in North-Central, Nigeria should immediately be retrained by employers, through in-service training, workshops, seminars, and conferences. These training programmes should incorporate the electronic records management disposition skills for effective records management.
2. Office technology and management curricula in polytechnics in North-Central, Nigeria should be reviewed at all levels by programme developers and curriculum planners. The review should take care of the findings of this study relating to the electronics records management skills assessed. A modular approach to such curriculum development should be appropriate and should be flexible to provide for any inclusion of the future information communication technology needs.
3. There is need for a system of continuous education for lecturers who train secretaries in polytechnics in North-Central, Nigeria. Lecturers need to be retrained by employers, government and any Non-Governmental Organizations (NGOS), through in-service training, workshops, seminars, and conferences in order to update their knowledge and skills in electronic records management.

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