A COGNITIVE TASK APPROACH ON THE INFLUENCE OF OFFICE AUTOMATION SOFTWARE IN SECRETARIAL PRACTICE

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UNIVERSITI TUN HUSSEIN ONN MALAYSIA
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DEDICATION

I dedicate this work to Muhammad Rasulullah, Sallal Lahu Alaihi Wassallam.
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ABSTRACT

Inefficiency in secretarial services in the application of office automation software has been of great concern to both secretaries and their employers. This inefficiency causes unnecessary delays in information processing and dissemination in the organization. The problem is rooted from the secretaries’ lacking in appropriate application of cognitive skills, proficiency in information handling as well as working experiences, and these establish the problem statement of the study. One of the important gaps this study has bridged is establishing the key elements that can assist the secretaries to perform their office tasks effectively. Efforts made to identify similar studies on secretaries’ profession were to no avail perhaps due to its non-availability or absence. It was discovered that the secretary’s level of applying perception and attention during working hours is extremely limited which contributed to poor or slow pace of service delivery. The objectives of this study are to explore the secretaries office automation software cognitive task, to investigate elements of office automation software cognitive tasks that influence secretarial practice and to investigate how office automation software supports the secretaries in the execution of tasks. Snowballing sampling was used to identify participants who have fulfilled a criterion set out in the study. Therefore, twelve (12) UTHM secretarial staff who are using office automation software in their office duties were chosen to participate in the study. The study employs qualitative method, thus interviews were carried out to collect data. Thematic data analysis was done using card index. Findings revealed that the secretaries need short and long term training in order to be relevant in their working places as well as to be updated in the use of office automation software. Further results revealed that office automation software supports the secretaries in the execution of cognitive tasks. The result also revealed the development of components of office automation software cognitive tasks in secretarial practice. These components were used by the secretaries in the execution of tasks such as word processing, scheduling of appointments and other secretarial duties. Another important finding revealed that, technology has changed the working environment of the secretaries which has made it imperative for them to continue using office automation software in the execution of their tasks. This has brought the idea of how office automation software supports the secretaries in the execution of their office tasks.
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CHAPTER 1

INTRODUCTION

1.1 Introduction

A secretary is an assistant to an executive officer or a manager, the secretary is trained to type and perform many office duties and also possesses personal and business attributes. The secretary guards his professional ethics of confidentiality, good appearance and absolute loyalty (Onifade, 2010).

Okoro & Amagoh (2008) reported that, Office Technology and Management (OTM), is an effective and efficient, functional and productive education, which leads to self-reliance and employment. OTM, by its nature, scope and contents, help the recipients of the course-programme to acquire relevant knowledge and skills in order to satisfy themselves for self-development and self-reliance. Graduates in this field are referred to secretaries in the working environment.

The work of a secretary in an organisation is characterized by handling and processing of information. This brings the need to discuss Information and Communication Technology (ICT). However, in this study a segment of the ICT will be the subject of discussion. This segment of the ICT is the Office Automation Software (OAS). This is because the secretary uses the office automation software in the execution of tasks in the office (Idеле, 2013). OAS is defined as the tools, facilities, processes, and equipment that provide the required environment with the
physical infrastructure and the services for the generation, transmission, processing, storing and disseminating of information in all forms including voice, text, data, graphics and video (Asabere & Enguah, 2012).

From the above definition, it is clear that OAS is playing an important role in several spheres of human activity (Kuyoro et al., 2012). This activities, however, also includes the office technology and management contributions which the secretary gives as an employee in an organisation as well as the vital role the secretary plays in the achievement of the organisational goals and objectives. The tasks of a secretary in an organisation include the coordination and management of the office environment, the managing of the superior’s official activities and many other jobs that could be assigned to the secretary (Onifade, 2010). At this point, it is clear that the work of the secretary is characterized by receiving information, recording information, processing the information (within his office jurisdiction) and passing such information as appropriate.

Nowadays, the responsibilities of the secretary have advanced beyond typing, receiving and managing visitors coming into the organisation (Ejeka, 2010). Secretarial tasks have now advanced to a multi-line operation of office machines like the computers, the internet, photocopying machines, telephone handling, adding machines as well as organizing schedules and appointments for superior officers.

A large amount of resourceful initiatives is required from the secretary in dealing with information with regards to official tasks. The importance of information being an essential resource among several duties of the secretary has made it necessary for the secretary not to be left out of information and communication development. While in the past the secretarial profession was seen as playing a mere supporting role in the office, the present secretary has to stand up to the challenges of modern office needs, because low performance and inability to urgently meet up with the technological changes in the office could pose threat to the secretary’s career (Akpormi & Ordu, 2009). This shows that the secretaries are chief organizers of meetings, record keeping, handling of incoming and outgoing mails of the organisation and managers of various activities in the office, they should be up-to-date with the desired OAS skills as well as take some measures that could improve their skills and performance.
The secretary OAS cognitive tasks are essential in the improvement of the secretary’s performance. This is because the cognitive tasks lead to cognitive load and cognitive load resulted to performance. Cognitive load is an imaginary idea (Tollefson, 2000). Therefore, in this research work, it is intended to identify OAS cognitive task of the secretary in order to bring out the component with a view to enhance secretarial practice, which will in turn help the secretary to avoid cognitive overload for maximum secretarial service delivery. This study will identify some problems of OAS application related to the secretary’s OAS cognitive tasks.

Therefore, information is a vital tool which the secretary uses in performing his duties. Secretaries are playing a vital role in their respective organisations for a very long time, but practice in the profession is taking too much time to change (Onifade, 2010).

Oyeronke (2012) has reported that information accelerates the level of individual advancement as well as the level of corporate and educational development. Oyeronke (2012) further reports that, information is indispensable, and access to information is very crucial. Siang et al., (2009) also reported that information is a basic resource in today’s society. Therefore, from the above assertions, it is generally accepted that information is an essential resource and meaningful context which the secretary use in executing official duties. According to Adejimola (2008), information involves the transmission and reception of intelligence or knowledge. Nana (2008 & Education) views information as a mixture of data, images, texts documents, voices and many other items, intelligently organized to make meaning. James (2013), explains that information notifies, surprises, stimulates, reduces uncertainties, reveals available options, influences individuals and expresses feelings among other roles in order to make meaning.

1.2 Technical and Vocational Education and Training (TVET) and Office Technology and Management

Technical and Vocational Education and Training (TVET) includes formal, non-formal and informal learning that prepare people with the knowledge and skills required in organisations.
Malaysia is seeking to improve the quality of life in its society through developing their workforce to compete in the global economy. The Malaysian government is focusing to achieve this desire through technical and vocational education and training (TVET). During the past years, advances and improvements have been made to TVET through Malaysian education and industry for “greater economic and social development” (Kefela, 2010).

The Malaysian realised that, to become global player, there is the need to provide workers with new and broader skills than ever before in order to meet the challenges of today workplace. This also brought about changes in the employment paradigm of Malaysia due to globalization and a better understanding on how competent workers can reduce the cost of operations.

Universiti Tun Hussein Onn Malaysia (UTHM) has been very active in building the capacity in TVET. UTHM is a recognised university in Malaysia which was established in 2001. UTHM is a specialized university in TVET teacher training and other strategically important activities that include among others, enhancing bilateral relationship with several local, regional and international stakeholders in TVET. The determination of UTHM in enhancing bilateral relationship with TVET stakeholders has shown UTHM potentialities to become a leading provider and referral centre in TVET through deliberate effort of positioning the university in the centre of networks.

In Nigeria, there are five Federal Universities that offers Technical and Vocational Education and Training (TVET) programmes in Nigeria. These programmes were designed to provide high technological educations and skills for employment.

The TVET programmes offered at these universities included Business Education. The department of Office Technology and Management (Education) (OTME), is under the Faculty of Business Education. Formerly OTME was called Secretarial Education, however, after reviews of the nomenclature and curriculum, the name Office Technology and Management emerged. Secretarial studies is a segment of TVET under the department of office technology and management.
1.3 Problem Background

Inefficiency which signifies the inability to make best use of available resources is an interesting subject either in the private or public organizations. A nature of this predicament portrays low output resulting from the attitudes towards work that emanates within the organization as well as from the larger society. In relation to that concern low performance in handling of secretarial tasks is linked to the secretary’s work which is a component part of administrative service delivery. According to Chibuzo (2013), such attitudes have had the tendency of making the secretaries to be underutilized and forced them to perform below expectation.

Rapid changes in OAS has brought challenges to secretarial practice to measure up to the requirements of the day, as well as the secretary’s ability to learn new working skills so as to improve performance. These challenges as reported by Chibuzo (2013) could be attributed to the secretary’s lack of required training on newly introduced OAS. Another issue could be that of non-provision of OAS by the organisations where the secretaries work. It is essential to note that OAS facilitates the flow of work but it also requires self-placed learning which the secretary can explore in order to improve the secretarial tasks (Livingston & Tonia, 2012). It is a common feeling among secretaries as to other professions, that their work is a routine job and therefore is not challenging (Varsha, 2014). This argument discourages further education to people who see themselves as mere supporting staff in organisations (Akpormi & Ordu, 2009). To ensure efficient service delivery, the secretary needs to enthusiastic of learning new working skills and improved working competencies in order to cope and be able to handle OAS in performing their secretarial tasks.

Another important issue is linked to the career development of the secretaries is that, secretaries as skilled employees are concerned about their progress in terms of potentials for career placements. This means that the progresses the secretary made in the working places in terms of promotions and other benefits could be a source of motivation and likely affect progressive job performance (Agba et al., 2010).

Therefore, employee career development could be related to organizational efficiency, whereby the career planning activities could lead to a more committed
work force. While the secretary’s job academic requirement for employment in some developing nations is diploma in secretarial studies, other developing countries only require a certificate for employment. The acceptance of such unprofessional lower qualification by some organisations has contributed to the secretaries’ unwilling attitude towards advancing their academic qualifications; a phenomenon that is also contributing to their low performance due to the low level of the secretaries’ educational qualifications and skills.

Another important gap this study has bridged is establishing a study that would increase secretarial potentialities of the secretaries performance through the identification of the secretary’s cognitive workload tasks load. This is important because the cognitive workload of the secretary is the mental working memory used by the secretary to execute the cognitive tasks.

Furthermore, the secretarial practice has changed overtime far beyond typing and attending to visitors. The modern secretaries are secretaries that uses the OAS and other modern office equipment’s (Akpormi & Ordu, 2009). These modern secretaries of today create spreadsheets, compose correspondences, manage databases, and create presentations, reports, and documents using desktop publishing software and digital graphics (Adebayo & Akinyele, 2012). Unlike before, nowadays secretaries do less dictation and word processing tasks, and provide support to executive staff. In a number of organizations, they work in teams with a flexible schedule and share expertise. However, in developing nations, lack of the required working competencies have deprived secretaries the right to perform within their schedules of duties (ILO, 2008, Guttermaan, et al., 2009). In contrast, current practice in the advanced nations indicates that secretaries are given adequate chances to perform their full responsibilities and are seen as partners who contribute to the growth of the organization.

The changing trends of modern office operations have revolutionized the way secretarial practice is carried out, the way information is collected, processed and disseminated in a systematic way (Eze, 2000). The technical work of the secretary in relation to OAS, the absence of the secretary’s interest in the application of these software as well as the lack of proper management of the secretarial tasks could lead to problems in the dissemination of secretarial services.
Akpormi & Ordu (2009) stated that, the functions and effectiveness of the secretary in any organization depends on human and technological supports and the availability of office technologies as well as the skills and competencies of the secretary. This is a challenge to the secretary to change the lukewarm attitude of remaining in the back seat and move forward to attain new measures of modern secretarial practice. In developing nations, there are problems of poor funding and inadequate supply of technological facilities, poor level of computer literacy and lack of internet facilities awareness (Olson et al., 2011).

According to Kelechukwe & Alasa (1998) and Ogbonna (2003) these problems causes interruptions that maximises the use of OAS by secretaries, which affects their operational performance. In line with this argument, this work would address some cognitive tasks difficulties of the secretary in terms of perception and attention in the delivery of secretarial tasks. Cognitive workload of the secretary could be a problem towards service delivery even with the best OAS if not well managed.

Several studies on secretarial profession were mainly focused on relationships between the secretarial practice and OAS as a tool for the secretary in executing secretarial tasks, this means that the previous studies usually based discussions about the tool the secretary uses in executing the secretarial tasks.

There are numerous problems affecting the maximum application of OAS by secretaries in their respective organisations, for instance in Nigeria, there are several problems that affect the secretary’s operational performance (Murgor, 2015). These problems include poor and inadequate telecommunication facilities, poor level of computer literacy, absence of communication facilities, poor level of awareness of internet facilities and lack of importance of information to the organisation, as well as ignorance of policy makers’ decisions on the power of information network on the economic and industrial development of an organisation. Poor funding, provisions of communication facilities, poor power supply, poor computer literacy, and lack of OAS infrastructure are also problems identified that directly affect the secretary’s performance in using the OAS at their work place (Ogbonna, 2003; Gichoya 2005).

The above listed problems are the major barriers that contribute to the low secretarial service delivery causing much displeasure to organizations and employees.
On this background, the researcher intends to find out the causes and effects of the secretaries low performance with a view of offering strategies for improvements so as to place the secretaries on their appropriate position for maximum service delivery. This will be by exploring the secretaries OAS cognitive tasks with a view to identify how the OAS cognitive tasks support the Secretary as well as how the OAS influence secretarial practice.

1.4 Problem Statement

In line with the advancement of OAS, the introduction of new technologies into business offices has completely changed the modern office and as well transformed the perception of the secretaries towards their work. Office technologies are introduced in order to improve the quality of work and promote efficiency among workers.

On the other hand, the efficiency and effectiveness of secretarial service delivery in every organization depends on the combination of the office technologies and the required competencies of the secretary. Modern organisations have appreciated the role and relevance of the secretary as well as the need for the provision of the necessary OAS facilities.

Previous studies have established the relevance of OAS in improving the competency of the secretaries. However, such studies have been criticized for giving much emphasis on the tools the secretaries use in performing their tasks rather than the person that do the job. Secretary’s perception and attention towards the job are equally important but have been ignored by several studies. Secondly, such studies also do not link the secretary’s OAS competency with optimal service delivery. In view of this, there is the need to study and explore the cognitive tasks of the secretary in relation to OAS competency, and how the secretaries cognitive tasks influence secretarial practice as well as to investigate how OAS support the secretary in the execution of tasks.

Low service delivery is viewed as employees performance indicator average below what performance could be attained by an employee and is actually being achieved by another employee because the employee is skilful and has the zeal to work. Therefore, in order to increase secretarial practice performance, there is the
need to go beyond the identification of the importance or relevance of OAS to the profession or looking at OAS as a tool, but rather to look at how the secretaries cognitive tasks in using OAS could be explored in order to address the issue of cognitive tasks load which will lead to identifying measures that could improve the secretaries output. Cognitive work load of the secretary is referred to the total amount of mental working memory being used by the secretary. Cognitive load theory as a theory that is largely about how information and learning flows, or how information and learning is restricted through the human brain. The secretary’s inability to comprehend and make quick decision in the execution of tasks or sometimes the miss-allocation of time and resources in executing tasks as a result of low mental energy of articulating measures to execute tasks which resulted to their low performance are some of the secretaries cognitive workload suffered by the secretaries.

Researchers need to pay close attention to cognitive task aspects of the secretaries in order to investigate some challenges in using the OAS with a view to developing measures that would enhance service delivery. Therefore, in this research work attention will also be paid to cognitive task aspects of the secretaries paid in order to investigate the challenges in using the OAS because OAS is the main tool the secretary uses to execute tasks in the office.

However, as mentioned in sub topic 1.3 above, there are many problems affecting the optimal application of OAS by secretaries in their working places which include poor and inadequate provision of office automation software facilities, and many other factors that include poor funding, inadequate power supply, lack of computer literacy, and lack of office automation software that directly affect the secretary’s performance in using the office automation software.

The identified listed problems highlighted above form a major barrier that rendered the secretary to perform below expectation in other countries especially Nigeria. However, in Malaysia the above stated problems do not exist. The problems identified in the area were this study was carried out is lack of proper application of the secretary’s OAS cognitive tasks in the execution of duties which resulted to low performance of the Secretaries.
On this note, this study intends to explore the secretary’s OAS cognitive tasks how this tasks effects the secretaries performance and how the OAS influence secretarial practice with a view to offering strategies for improvements.

Another gap this study will bridge is to conduct a research that deals with Office Automation Software Cognitive tasks of the secretary which several studies on secretarial profession do not addressed. Quite a lot of studies were mainly focused on relationships between the secretarial practice and OAS as a tool for the secretary in executing secretarial tasks, this means that the previous studies usually based discussions about the tool the secretary uses in executing the secretarial tasks.

1.5 Significance of the Study

Previous studies carried out on the secretarial profession were mainly focused on relationships between the secretary and OAS, the secretary and the office routine, the duties of the secretary and the relevance of OAS to the profession. There is no known study that deals with the exploration of secretary’s OAS cognitive tasks in order to reduce the secretary’s cognitive work load demands for effective and efficient secretarial management tasks delivery.

Secretaries and secretarial profession will immensely benefit from the study because it will upgrade their cognitive thinking required in order to perform their job and also assist the secretaries in reducing their cognitive workload stress. It is further hoped that secretaries would move towards upgrading their OAS skills for result oriented output.

The work is also going to be beneficial to the organisations where the secretaries work. This is by directly affecting the secretary’s general performance which will contribute to the achievement of the objectives of the organisation.

Another beneficiary of this project is the larger community. This is in a way that the positive performance of the secretary on the achievement of goals and objectives of their organisation will lead to efficient service delivery to the larger community which will promote socio-economic well-being of the society.
1.6 Objectives of the Study

The objectives of the study are:

(i) To explore the secretaries Office Automation Software cognitive tasks

(ii) To investigate elements of cognitive tasks that influence secretarial practice while using Office Automation Software.

(iii) To investigate how Office Automation Software support the secretary in the execution of tasks.

1.7 Research Questions

This study is guided by the following questions whereby the study would seek answers to the following research questions:

(i) What are the cognitive tasks of the secretaries in the use of office automation software?

(ii) How the elements of cognitive task influence secretarial practice?

(iii) How does office automation software support the secretary in the execution of tasks?

1.8 Conceptual Framework

The conceptual framework of this study was adapted from (Hendricks, 1999). The framework in this study is only focusing on two (2) elements which are attention and perception (Micheleon, 2006). He argues that cognition is how a person understands and acts. It is the set of abilities and processes that are part of every human action. (Micheleon, 2006) further argues that cognition has more to do with the processes of how an individual learns, remembers, solves problems and pays attention rather than with any actual knowledge. For instance, answering the telephone involves perception (hearing the ring tone), making decision (answering or not), motor skill
(lifting the receiver), language skills (talking and understanding language), social skills (interpreting tone of voice and interacting properly with another human being).

However, Micheleon (2006) identifies secretarial cognitive tasks on the perception of the secretary involve the ability to sustain concentration on a particular object, action, or thought, and the ability to manage competing demands in our environment and recognition and interpretation of sensory stimuli, smell, touch, and hearing.

Anderson (2004) has reported that attention is the behavioral and cognitive process of selectively concentrating on a discrete aspect of information. Anderson goes further to say that the process by which an individual allocates the limited processing resources, attends to instructions despite distractions is what is involved in attention.

Demuth (2013) recounts that perception is the ability to visually perceive objects around us in response to the patterns of light. Demuth (2013) goes further to say that perception involves the ability of an individual to interpret, organise and produce meaningful experience as it relates to his sensations on issues and instructions.

Hendricks’ (1999) theory of knowledge sharing on how the Office Automation Software (OAS) could effectively improve the quality of work and reduce some difficulties in the working environment is seen in this study as an alternative to guide the researcher.

Investigations on the secretary’s cognitive tasks in order to identify and improve the perception and attention of the secretary when combined with OAS as the tool for the secretary to carry out official duties. This will result in the delivery of efficient and effective secretarial services. Although there are several cognitive tasks aspects, this study is restricted to the 2 aforementioned features, the perception and attention. These are the main elements of cognitive that involves the secretaries in executing their tasks. Furthermore, these two elements of cognition were selected because the perception of viewing an image by the secretary is viewed by the researcher as an important aspect to the secretary in performing duties in the office. This is because, the perception of viewing images by the secretary does not only depends on the physical properties in the secretary’s working environment, but also depends on the perception and attention of the secretary in performing the secretarial
tasks (Rensink, 2013). The perception of viewing image by the secretary plays an important role in the development of cognitive work load of the secretary which is also an essential component of the secretary’s cognitive tasks.

The conceptual framework in Figure 1.2 shows the perception and attention of the secretary’s two main fields were the cognitive tasks of the secretary evolve. The figure also indicates that office automation software is the tool the secretary uses to execute the secretarial tasks. The importance of OAS as a tool to the secretarial profession has enhanced proficiency and general output of secretaries as well as enabled the secretaries to process accurate and relevant information within the shortest possible time (Nwaokwa & Okoli, 2012). In addition, the importance of OAS is viewed as technology which supports activities involving the creation, storage, retrieval and manipulation of information in a more systematic way which makes organisational operations easier (James, 2013).

Secretarial practice is the output produced from the combination of the secretary’s cognition and the working tools. The secretary has many duties such as typing, taking dictation and transcribing the notes with a computer, managing records, receiving, storing and retrieving information, arranging and attending meetings and answering telephone calls, attending to visitors and performing different tasks assigned by his superior (Onifade, 2009). These tasks revolve around the aforementioned two cognitive spheres as viewed in this study.

Figure 1.1: Conceptual framework of the study

Adopted from Hendricks, (1999)
1.9 Operational Definition

Cognitive Tasks - Amount of mental effort used in the working memory
Cognitive Work
Load - Mental working memory of an individual
Secretarial Practice - Performance of the secretary (output)
ICT - Information and Communication Technology
Modern secretary - Secretary that uses ICT facilities and modern office machines
Modern office - Offices that provide ICT facilities and modern office machines
Component - A part that combines with other parts to form something bigger
OAS - Office Automation Software
R - Participant
R1 - Participant 1
IQ - Interview Question
IQ. 1 - Interview Question 1
P1 - Participant 1
IQ 1 - Interview Question 1
I 1 - Interview No 1
CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter discusses literature review in which discussions are organized under headings and sub-headings. The discussions are arranged to give a preview and clear insight of the contents of the chapter. The chapter starts with introduction, followed by discussions on cognitive task theory, cognitive tasks analysis, secretaries cognitive abilities functions, types of secretaries, duties of the secretary, qualities of a good secretary, the nature and scope of OAS in the secretarial profession, OAS as a tool to the secretarial profession, the uses of OAS to the secretaries in the organisation, the advantages of OAS to the modern office, and problems of applying OAS faced by the secretaries in their organisations. The chapter ends with a summary of the literature review.

2.2 Cognitive Task Theory

Mehler et. al., (2000) have defined cognitive task as an approximation to human cognitive processes for the purpose of comprehension and prediction. Though comprehension and prediction are not always easily distinguishable, modelling is a form of learning where individuals ascertain how to act or perform by observing another individual. On this note, Hollands and Christopher (1999) perception on
cognitive tasks is indicating that a procedure could be anticipated by using human cognitive domain to make certain predictions on a specific task. These tasks could either be cognitive, affective or psychomotor. Based on the above cognitive task theories, this study intends to investigate the secretarial cognitive tasks using OAS in order to address some limitations and shortcomings of the secretaries in the area of managing secretarial tasks using. This will help to reduce the secretary’s cognitive workload demands which will later increase effectiveness, efficiency and optimal utilisation of the secretaries for an ideal service delivery.

Cognitive work load refers to the total amount of mental effort being used in the working memory. Jones (2010) views cognitive load theory as a theory that largely is about how information and learning flows, or how information and learning is restricted through the human brain. In relating Jones (2010) views to this study, the secretary’s cognitive mental work load used in doing work in the office was investigated to go in accord with what Jones has described.

Therefore, the cognitive learning process in figure 2.1 illustrates how the secretary’s learning process is all about. Generally, according to Jones, this process is controlled by two main memory systems. First is the working memory which has limited capacity. Particularly, the rule is that an individual can remember not more than 7 (+/-2) items in any given situation (Mehler et. al., 2000). Once those working memory limits are exceeded, the learning process starts to go down. On the other hand, long term memory has an unlimited capacity but is primarily used for storage. Additionally, long term memory cannot engage in thinking or learning processes like working memory (Jones, 2010). This assertion brings to the researcher of this work the need for the secretary’s cognitive domain to have some supports in terms of identifying an appropriate cognitive task components for the secretary to perform tasks in a more conducive manner by relaxing and reducing the secretary’s cognitive thinking and energy. This is possible by identifying the OAS software’s used by the secretary during data collection and interviews. The Figure 2.1 below illustrates the two memory systems and the basic processes associated with the memory systems.

Galy & Claudine (2012) assert that cognitive load theory proposes to differentiate different load groups of working memory, in a context of instruction. Intrinsic load is inherent to task. Figure 2.1 shows the relations between image
viewing and perception in developing cognitive load for the secretary. Figure 2.1. therefore is related to the secretary from where the secretary deals with viewing images of difficult tasks as well as ensuring attention (alertness) in dealing with the task at hand.

Figure 2.1 Cognitive Learning Process
(Source: Jones, 2010)

This study is concerned with three main types of cognitive load Intrinsic, germane and extraneous load (Jones, 2010). All the three elements of cognitive are essential to the secretary for proper understanding of instructions and work performance as well as how the secretary can learn more about the office automation software and other working skills with the aim of understanding and utilising the software properly. The three types of cognitive workload are important to this study because it deals with the mental work or difficulty associated with the content of a given tasks. Therefore, this study is focused on identifying the contents of office automation software cognitive tasks as it affects the secretarial practice.

Furthermore, focus of this study was also placed on factors that determine the difficulty of understanding instructions and skills acquisition through training. Sweller, (1994) reported that when considering knowledgeable activities, automation is a primary mechanisms of learning. It is therefore important to discuss cognitive load theory in order to bring out the main story of this study. Cognitive load theory according to Sweller, (1994), in line with this study is concerned with the manner in
which the secretary’s cognitive resources are focused and used during learning while working and how the secretaries solve problems in their working places. Many learning and problem solving procedures encourage by instructional schemas results in individuals engaging in cognitive activities for removed from ostensible goals of the tasks.

The lack of concordance of cognitive demands of some tasks and the goals of those tasks first became apparent in studies concerned with relations between learning and problem solving. (Sweller, et al, 1982).

Cognitive load theory deals with learning and problem solving difficulty that is artificial in that it can be manipulated by instructional design. An instructional-design is a theory that offers explicit guidance on how to help individuals learn and develop. The kinds of learning and development may include cognitive, emotional, social, physical, and spiritual (Dick & Carey, 1996). Cognitivist view of instructional design is to construct new knowledge with their own experiences. This is where learners learn how to think and how to learn to solve their learning problems. This theory is essential to the secretary to use OAS as learning resources for acquiring new working skills. This is because, instructions deal with teaching and learning activities (Sweller & Chandler, 1991). These activities could assist secretaries to learn office automation software skills and move the knowledge from short term memory to long term memory. Effective instruction would enable secretaries acquire specified skills, knowledge, and attitudes (Sweller, et al, 1982).

Another important aspect in this study is the cognitive load theory (CLT). Cognitive load theory is concerned with skills for managing working memory load in order to facilitate the changes in long term memory associated with schema construction and automation (Sweller et al, 2004). CLT differentiates between three types of cognitive load: intrinsic, extraneous, and germane. Intrinsic load when the cognitive load is imposed by the number of information elements and their interactivity. If the load is imposed by the manner in which the information is presented to learners and by the learning activities required of learners, it is called ‘extraneous’ or ‘germane’. Whereas, extraneous or ineffective load is imposed by information and activities that do not contribute to the processes of schema construction and automation, germane or effective load is related to information and activities that foster these processes. Intrinsic, extraneous, and germane load are
considered additive in that, taken together, the total load cannot exceed the memory resources available if learning is to occur (Paas et al., 2003).

The difficulties faced during learning new knowledgeable tasks can fluctuate dramatically. Learning can vary from being easy to hard. Some of the reasons for variations in simplicity of acquisition, such as changes in amount of information, are obvious. In other cases, two tasks may appear to have roughly similar amounts of information but differ completely in the effort required to achieve perfection. The way in which the information is processed can either be controlled or automatic.

Schemas provide the basic unit of knowledge and through their operation a substantial proportion of learning mediated intellectual performance could be explained. Any cognitive activity that requires deliberate thought is being processed in a controlled fashion. Readers thinking about the contents of this research work are engaged in controlled processing. On the other hand, automatic processing occurs without conscious control. Well learned material can be processed automatically without conscious effort allowing attention to be directed elsewhere.

2.3 Cognitive Task Analysis

Cognitive task analysis is the analysis of how tasks are accomplished, including a detailed explanation of both manual and mental activities, task and element durations, task frequency, task allocation, task complexity, environmental conditions, necessary clothing and equipment, and any other unique factor(s) involved in or required for one or more people to perform a given task (Kirwan, 1992). Cognitive task analysis (CTA) was used in this study because CTA provides a variety of interview and observation strategies that capture descriptions of knowledge on how experts perform complex tasks (Richard, et al., 2006). This study had extracted description of how the secretaries use their cognitive knowledge to do their work using OAS. This is to find out how they have problems when the tasks are not managed well and how the OAS help their cognition in managing their tasks.
2.4 Cognition and Secretaries Cognitive Abilities Functions

Cognition has to do with how a person understands and acts in the world; it is the set of abilities or processes that are part of nearly every human action (Micheleon, 2006). Cognitive abilities are brain-based skills needed to carry out tasks from simple to the most difficult. This has more to do with the processes of how an individual learns, remembers, solves problems, and pays attention rather than with any actual knowledge. For instance, answering the telephone involves at least: perception (hearing the ring tone), decision making (answering or not), motor skill (lifting the receiver), language skills (talking and understanding language), and social skills (interpreting tone of voice and interacting properly with another human being).

The secretary performs several functions in the office. These functions as described by (Luria, 1966; Shallice, 1982) is the capacity that allows an individual to control and coordinate thoughts and behaviour which include selective attention, decision-making, voluntary response inhibition and working memory. Each of these executive functions has a role in cognitive control, for example filtering out less important information, holding in mind plans to carry out some functions in the future and inhibiting impulses (Sarah. & Suparna, 2006).

Collina (2006) cites that cognition is not merely a process, but a “mental” process. In other words, cognition refers to the mental process by which external or internal input is transformed, reduced, elaborated, stored, recovered, and used. As such, it involves a variety of functions such as perception, attention, memory coding, retention, and recall, decision-making, reasoning, problem-solving, imaging, planning and action execution.

Such mental processes involve the generation and use of internal representations to varying degrees, and may operate independently at different stages of processing. However, Table 2.1 below illustrates some cognitive tasks in which the secretary’s cognition is involved while discharging secretarial duties (Micheleon, 2006).

The table illustrates how the secretary’s mental processes by which external or internal input is transformed and uses as it involves various secretarial tasks that involves the secretary’s perception and attention for instant decision-making in execution tasks.
Table 2.1: Secretaries' Cognitive Abilities and Brain Function

<table>
<thead>
<tr>
<th>Cognitive Ability/Brain Function</th>
<th>Skills involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abilities that enable goal-oriented behavior, such as the ability to plan, and execute a goal.</td>
<td>Ability to sustain concentration on a particular object, action, or thought. Ability to manage competing demands in our environment</td>
</tr>
<tr>
<td>Secretaries’ Cognitive Tasks</td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>Recognition and interpretation of sensory stimuli (smell, touch, hearing, etc.)</td>
</tr>
<tr>
<td>Perception</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Micheleon, 2006

Cognitive psychology can be studied from diverse points of view. While discussing perception and attention in psychology, it is important to first of all discuss cognitive psychology in order to give readers the conceptual idea of the research on the two phenomena.

Savannah et. al., (2013) explain that cognitive psychology is the study of how people think, remember, perceive, speak, and solve problems. Therefore, as this research is focusing towards investigating cognitive task of the secretaries in order to enhance the secretary’s work with the support of OAS, the concept of perception and attention in this study is based on how the secretary remembers and perceives instructions and solves problems using the OAS (Savannah et. al., 2013). In addition, Gerrig & Philip (2002) have reported that cognitive psychology is the study of mental processes such as "attention, language use, memory, perception, problem solving, creativity, and thinking.

This second definition by Gerrig & Philip (2002) conveys to the researcher the importance of discussing cognitive psychology in this study as it relates to the secretary’s attention and perception. Even though there are more mental processes involved in the execution of cognitive tasks, this study is only limited to perception and attention. Furthermore, another important aspect of this research is not only to
present a package basic facts and theories, but also to justify the importance and consequential impact of the secretary’s perception and attention to the secretarial job.

2.4.1 Attention

Unfortunately, attention is a concept that psychologists have been particularly reluctant to define (Elizabeth, 2005). She views the difficulty in defining attention because the phenomenon is not a single concept. Despite Elizabeth’s view, Galen et al, (2005) have also reported that attention is commonly considered as the first step in perception. A common view is that attentional processes are required because the environment contains more information than can be processed and comprehended at any given time. Shaun et al. (2003) explains that attentional processes can be viewed as protecting an organism from information overload and are selective in that they allow processing of some stimuli while disregarding others.

Attention is defined as the behavioral and cognitive process of selectively concentrating on a discrete aspect of information, whether deemed subjective or objective, while ignoring other perceivable information (Anderson, 2004). Attention has also been referred by Anderson to be the allocation of limited processing resources.

As reported by Anderson (2004), the processes by which secretaries are able to attend to tasks and listen to instructions despite distractions from visitors or colleagues, discard redundant information and then quickly turn towards their work and then manage to keep away from the distractions is what involved attention.

In the context of human information processing, attention is the process that, at a given moment, enhances some information and inhibits other information. The enhancement enables the secretary to select some information for further processing, and the inhibition enables the secretary to discard or set some information aside according to its importance or urgency.
2.4.2 Perception

Lindsay & Norman (1977) have reported that perception is the process by which organisms interpret and organise sensation to produce a meaningful experience of the world. The adjustment to reality is what is perceived as perception (Yakup & Diyarbakirloglu, 2011). In other words, it is a situation a person is confronted with a situation or stimuli, the person interprets the situation into something meaningful based on previous experiences. However, what an individual interprets or perceives may be substantially different from reality. In his remark, Demuth (2013) refers perception as the ability to visually perceive objects around us in response to the patterns of light of what those objects caste on our eyes.

Therefore, this research is going to focus on the secretary’s perception towards using OAS as it relates to how the secretaries interpret and organise their sensation in order to produce meaningful experiences.

There could be more human cognitive ability functions that would be identified to be relevant to the secretaries as mentioned by Schneider & McGrew (2012) as follows:

(i) Induction: the ability to observe a phenomenon and discover the underlying principles or rules that determine its behaviour

(ii) General Sequential Reasoning (RG): the ability to reason logically using known premises and principles. This ability is also known as deductive reasoning or rule application.

(iii) Working Memory Capacity (WM): the ability to direct the focus of attention to perform relatively simple manipulations, combinations, and transformations of information within primary memory while avoiding distracting stimuli and engaging in strategic and controlled searches for information in secondary memory.

This study, however, is restricting itself to the two (2) aforementioned secretarial cognitive abilities functions that is perception and attention. Further
studies can be made for more knowledge sharing. However, research question 1 of this study which is to investigate the cognitive tasks of the secretaries in the use of office automation software would be answered in relation to literature reviews so that interview questions would be formulated to answer the research questions appropriately. In addition, research question 2 which is investigated how do cognitive task influence secretarial practice will also be addressed in this chapter from available literatures that will support and provide elements of developing interview questions that relate to cognitive tasks of the secretary in this study.

### 2.5 Types of Secretaries

There are different types of secretaries such as the personal or private secretary, company secretary, secretary of a club, secretary of a co-operative society and many more. This study is going to discuss the Personal or Private Secretary. Personal Secretaries are secretaries who generally work with high profile officers like ministers, political leaders, lawyers, doctors, Vice-chancellors, Deputy Vice-Chancellors, Deans and Deputy Deans of Faculties, Provosts and many senior officers in the public and private Sectors (Onifade, 2010). The personal or private secretary that works in an organisation under the supervision of a superior officer is what this research is focusing on.

### 2.6 Office Automation Software as a Tool in the Secretarial Profession

Information and Communication Technology is very wide and has no limit in scope, thus. its definition is imprecise. Kobayashi (1988) and Okoro (1989) explain that ICT embraces all modern systems for processing information and communications in the form of data, text, image and voice. Kroenke et al., (1993) define ICT as all about information systems, which is more than a computer. It is the technology that supports the secretarial tasks which involves the execution of word processing tasks, scheduling of appointments tasks, managing meetings and creation, storage, retrieval, manipulation (principally, computing electronic communication) together with their
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