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DIGITAL RESEARCH PROFICIENCY IN INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS EMPLOYED BY SECRETARIAL STAFF AND BUSINESS TEACHERS IN DAY-TO-DAY ADMINISTRATION AND TRAINING IN SECONDARY SCHOOLS

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Abstract

Not only does Information and Communication Technology (ICT) have the potential to increase the efficacy and efficiency of teaching and learning, it also has the potential to lessen administrative obligations. This study investigates the extent to which secretarial staff and business teachers use of digital research proficiency in information and communication technology skills in their day-to-day interactions in secondary schools in Benue State. Specifically, a descriptive survey research approach was used for this investigation.The study tested four hypotheses and answered four research questions at 0. 05 level of significance. The study's population was 53 respondents that comprised 38 business teachers and 15 secretaries from public secondary schools in zone C of Benue State which were drawn from 15 secondary schools that offer Business subjects through simple random sampling technique. The entire population of 53 respondents was sampled because of the manageability. A structured questionnaire was used to collect data. To answer the research questions, the collected data were analysed using mean and standard deviation while T- test statistics were used to test the null hypotheses at the 0.05 level of significance. It was suggested based on the findings that Business personnel can exchange diverse ideas using ICT without being constrained by any factor or area by adopting the relevant skills required for each task. The study findings also suggest that teaching can be improved once the students understand the mechanics of classroom-related technologies.

Keywords: Digital proficiency, Online research, Electronic mail set-up, Management, Online collaboration, Skill, Word processing.

Introduction

Information and communication technology (ICT) in the modern day broadens students' opportunities to get access to high-quality education and expands their horizons to develop skills that will serve them well now and in the future.Education has become a critical tool for national growth and individual socio-economic empowerment and with the development of ICT, the digital revolution has resulted in innovative teaching-learning techniques marked by shifting responsibilities for both instructors and students (Davis & Loveless, 2011). According to Naziev (2017), education is a socially structured and controlled process through which socially meaningful experience is continuously transferred from one generation to the next. In light of this, a 2016 report by Organization for Economic Co-Operation and Development (OECD) suggests that the society as a whole may benefit from education that emphasises the development of innovative thinking and the skills necessary to support it, particularly in secondary schools.

Moving on, Yusuf (2009) and Ige (2011) assert that the purpose of secondary education is to further a child's development beyond that of primary school, which is clearly inadequate to equip students with the reading, numeracy, and communication skills necessary for success in the modern world. It is that level of education that follows primary school and precedes higher, alternative education. In Nigeria, the National Policy on Education recognises the importance of secondary education in accomplishing its stated aims (NERDC, 2014; Kings, 2018). To that end, the Nigerian educational system has been rebuilt to include a 9-3-4 system, with 3 representing three years of senior secondary education. In addition, Amaechina and Alaubi (2018) affirm that the introduction of technical, commercial, and vocational courses in senior secondary education

strengthens the foundations of basic education with the goal of making secondary school pupils self-reliant and self-employed. This implies that it is one facet of education that equips recipients with the skills they need to find work and make important contributions to the economy. Nevertheless, at every educational level, Sisitka (2013) emphasises that improving educational management; infrastructure and equipment; teachingexpertise; curriculum and resource creation; as well as instructional techniques all play a role in enhancing the quality and value of education. Consequently, Abdullah, DeWitt, and Alias (2013) argue that using ICT in schools is essential for achieving all of these goals, in addition to using a learner-centred approach to instruction. Hence, many different kinds of technologies should be used in secondary schools for various purposes, including but not limited to communication, creation, distribution, storage, and management of information.

Notably, using ICT has been shown to reduce the likelihood of mistakes by standardising procedures and fostering confidence in the information used to make decisions throughout an organization. This, in the opinion of many scholars, is using ICT for data management in an organization. With regards to management, Drucker (2020) opines that it is something that every person does, whether at home, in their communities, in their governments, or in their businesses.It simply refers to a way of getting things done by meeting your own or other people's needs and providing them with challenges and experiences that help them develop and improve. From another perspective, Griffin and Van (2014) assert that management is the process of coordinating the use of an organization's resources (people, economic, material, and information) to achieve its goals in an effective and efficient manner. This implies that management needs scientific thought, exact planning and meticulous control in order to get faster and more efficient results. Similarly, Daft & Marcic (2017) contend that management is directing an organisation

toward its desired outcomes by means of strategic and methodical preparation, action, and monitoring of its resources. In this case, management can be seen as a specific strategy that incorporates planning, organizing, and acting in order to define and achieve goals via the use of humans and other resources. Having said that, it is critical to highlight that in today's competitive environment, secondary education objectives in Benue State may be unattainable unless appropriate management techniques are used. Consequently, as Ghavifekr, Afshari and AmlaSalleh (2012) points out, educational institutions that are charged with preparing students for life in "a knowledge society" should consider how they can best train their pupils to use ICT. This is because ICTs have altered almost every facet of human existence, from the ease with which we can share and gather information to the efficiency with which we can complete tasks at work or in business to our dealings with governmental bodies and the elegance with which we can manage our personal and social lives.While this is true, several studies have however, shown that in order for secondary schools to efficiently carry out these and other tasks, instructors also require training in the use of ICT (Ololube, 2006; Bhattacharjee & Deb, 2016; Cheok, Wong, Ayub, & Mahmud, 2017; Yuldasheva, 2021). This in the view of Arnseth and Hatlevik (2012) is because ICT is capable of delivering a flexible and dynamic teaching and learning atmosphere.

Several scholars have asserted that in recent decades, numerous resources for enhancing teaching and learning have become available thanks to technological advancements (Bruniges, 2005; Lefebvre, Deaudelin, & Loiselle, 2006; Bingimlas, 2009; Hamidi et al., 2011). This is because of the universal recognition that progress in information and communication technologies is crucial to the survival of civilization and the welfare of human kind as a whole. Several scholars have also emphasised the importance of ICT development in both developing and developed countries (Kpolovie & Awusaku, 2016; Walsham, 2017; Lwoga & Sangeda,

2019). Hence, in contemporary western education contexts, ICT is rapidly being employed to aid students and teachers with their work. This applies not only to university education but also to senior and junior secondary education as well as, to a lesser extent, primary education. Subsequently, with nodoubt, ICT has had an enormous impact on the educational sector in western countries, particularly on the ways in which students are taught and how academic inquiry is conducted. While this is true, Nwokeafor (2015) argues that this trend has not yet spread throughout Nigeria and other developing countries.This may be due, at least in part, to the fact that most teachers lack the necessary ICT skills to effectively implement the goal of ICT integration in the classroom.The goal of incorporating ICT (Information and Communication Technology) into today's classrooms goes beyond just instructing pupils in the basics of computer usage; it also involves preparing them to deal with the ethical and social issues that arise from activities like word processing, online research, teamwork, and the incorporation of icons into email signatures. This, in turn, would make the students' transition into higher education schools easier and make it possible for them to work together on research projects, assignments, and projects. As Einstein famously said, “If you can't explain it to a six-year-old, you don't understand it yourself”. That been said, it’s important to note that most secondary school teachers in Nigeria lack the skills necessary to carry out the aforementioned responsibilities, and as such it is imperative that they master ICT and effectively integrate it into their classrooms.

Moving forward, ICT is also utilised by researchers to advance in knowledge and to make it easier to study, generate ideas, and create resources. It has influenced the nature of research by facilitating the growth of innovative services that facilitate researchers working together to achieve a common goal.Applied to the context of education,the need for a fully

integrated learning environment where students, instructors, and teachers can easily communicate and collaborate, share sensitive data in a safe and reliable manner around the clock, and eventually tap into a wealth of information outside the classroom walls is undeniable.In essence, ICT encourages teachers to take an active role in their students' learning and further their own education via research-based strategies.However, the intricacy of this approach is reflected on how effectively students can use their knowledge and abilities to analyse situations, reach informed judgements, conduct in-depth research, summarise results, design presentations, and initiate projects.

Although information and communication technology (ICT) is widely acknowledged as a key component of a 21st-century learning environment (Jegede, 2008), then, Lau and Sim (2008) noted that despite the apparent advantages of using ICT for educational purposes, research has demonstrated that in many situations, the learning potential of ICT is robbed as many instructors are still not completely ICT literate. Early studies indicate that secondary school teachers have difficulties with Internet availability, accessibility, and use, as well as a lack of library skills and an insufficient power supply, all of which may impede their capacity to properly educate (Mohammed, Maifata & Dan'azumi, 2019). Likewise, Abba, Ibrahim, Shehu & Saidu (2020) posits that a lack of financial resources is a barrier to the provision of some internet services that are equally crucial in an educational setting. Given this scenario, teachers and secretaries in Benue State already encounter difficulties due to a lack of digital literacy, self-awareness, and opportunities for professional development via on-the-job training, making mattersonly worse.

According to Ameen, Adeniji, and Abdullahi (2019), educators and students alike are uninformed when it comes to effectively implementing technology in the classroom. From another point of view, Adeshina, Udoh, Ndomi, & Aliyu (2013) opine that since both older and

younger secretarial educators lacked basic ICT skills, they are constrained in their ability to both obtain and upload high-quality content, as well as instruct their pupils on how to do so.Therefore, it's reasonable to say that the majority of teachers fail to adequately impart technological literacy. On the other hand, when these competencies are integrated into the educational experience, children are better equipped to study independently, work together on projects, and discover the world around them. For instance, a teacher can acquire up-to-date information, know what is occurring in his/her field of teaching elsewhere around the world, and share information with others utilizing the Internet's mailing list feature (Aderogba, Onojah & Olumorin, 2021).This simply means that teachers and secretaries who are digitally proficient, particularly in word processing, internet research, email management, and online collaboration, will be in high demand in the modern workplace.

The ability of an individual to use web-based learning platforms such as canvas and interactive video/audio conferencing technology such as Zoom to carry out online, virtual learning is referred to as digital proficiency (Deng &. Yang,2021). Similarly, Marques, de Oliveira Neto, and Marques (2013) defined digital proficiency as a collection of computer and internet knowledge and abilities that are both required and adequate for performing fundamental activities. Falloon (2020) argues that employees, specifically teachers and secretaries, who have digital competency can make use of new and developing technologies, software applications, and other resources to gather data, enhance their research abilities, and improve the quality of their teaching and management practises.Having said that, the main purpose of this study is to investigate on the extent digital research proficiency in information communication technology skills are employed by secretarial staff and business teachers in day-to-day interaction in secondary schools in Benue State, Nigeria Specifically, the study sought to determine the extent

to which word processing skill, online research management skill,online collaboration skill and e-mail management skill adopted by business teachers and secretaries in secondary schools in Benue state Nigeria

Research questions

1. To what extent are word processing skills adopted by business teachers and secretaries in day-to-day interaction in secondary schools in Benue state?
2. What is the extent of online research management skills adopted by business teachers and secretaries in day-to-day interaction in secondary schools in Benue state?
3. To what extent are online collaboration skills adopted by business teachers and secretaries in day-to-day interaction in secondary schools in Benue state?
4. What is the extent of E- mail management set-up skills adopted by business teachers and secretaries in day-to-day interaction in secondary schools in Benue state?

Hypotheses

HO_1: There is no significant difference in the mean response of business teachers and secretaries on the extent word processing skills are adopted in day-to-day interaction in secondary schools in Benue state

HO_2: There is no significant difference in the mean responses of business teachers and secretaries on the extent online research management skills are adopted in day-to-day interaction in secondary schools in Benue state

HO_3: There is no significant difference in the mean responses of business teachers and secretaries on the extent online collaboration skills are adopted in day-to-day interaction in secondary schools in Benue state

HO_4: There is no significant difference in the mean responses of business teachers and secretaries on the extent e-mail management skills are adopted in day-to-day interaction in secondary schools in Benue state

Literature Review

Acquisition and Competence in ICT Skill

Technology is undeniably utilised in today's society, especially in the realms of education and training; yet, questions still arise on how often it is employed?Several authors have emphasised how information and communication technologies (ICTs) have the potential to improve teaching and assist schools in making necessary changes, as well as to drive innovation; intensify, nourish, and develop deeper skills; motivate and engage students; help relate school experience to work practises; create financial viability for tomorrow's workers, and more (Azizollah, Mohsen, & Aboulghassim, 2012; Ogunji, 2013; Bassey & Ushie, 2013; Singh, 2014; Vitanova, Atanasova-Pachemska, & Pachemska, 2014; Matthew, Joro, & Manasseh, 2015; Aladesusi et al., 2021). As a result, when progressions in communication technology are integrated into education, teachers gain the knowledge and skills required to enhance educational system, which has social ramifications. Information and Communication Technology (ICT) is a term that refers to the use of technology to communicate and access information. ICT is described as the processing and exchange of information via the use of electronic information resources and devices such as computer systems, the online, and communications systems (Kaware & Sain, 2015; Heeks, 2018; Ukonu & Umar, 2022). Thus, it is generally agreed that ICT should play a crucial role in updating and reforming educational systems and practises.It pervades many parts of our day-to-day life and stores, recover, operate, or receive data in a digital format. ICT is one of the most vital tools used in today's corporate environment and being

familiar or proficient in the use of technologies (such as email, video chat, web browsing, tablet and smartphone usage, etc.) is referred to a having ICT skills (Ukonu & Umar, 2022).

Educational technology includes, among other things, desktop computers, mobile devices (such as laptops, tablets, and smartphones), communication and collaboration tools, and a variety of software programmes for teaching (Deng & Yang, 2021; Ukonu & Umar, 2022). Teachers who have ICT skills and are proficient with these technologies have an advantage in the classroom and provide their pupils with access to the digital world and the resources they'll need to succeed in the future. Suffice to say, skills are defined as the ability to perform tasks (Roddrigues, Fernández-Macías, Sostero, 2021). As opposed to inherent competency or mental representation, "skill" is simply the capacity to accomplish (Vanpatten & Benati, 2010) and involves the use of ones' knowledge effectively and readily in performing an act completely (Obi, 2006). Modern day survival requires students to be familiar with several forms of information and communication technology (ICT), such as word processors, software presentation, spreadsheets, databases, file management, email, and web browsers (Beck, Shulman, Dusaj, Anderson & Weiner, 2005). As a result, Zameni & Kardan (2010) asserts that the development of ICT skills in pupils was recommended as a means of preparing them to adapt to the new environment.

Becoming an expert in a particular area requires a level of performance that is clearly superior than that of others as well as yields observable and measurable outcomes that can be repeated by others (Ericsson, Prietula, & Cokely, 2007). The use of ICT in education has made classroom instruction simpler and more efficient, making more and more competent teachers. However, in most schools in Nigeria, students and teachers only sometimes make use of technologically advanced teaching materials. This might be because most secondary school

teachers in Nigeria do not see the value in using ICT to better their professional practise, and hence are not willing to include ICT into their teaching. If secondary school teachers in Nigeria see the value in using technology in the classroom, they are more inclined to use it. According to a study that looked at teachers' confidence in implementing computer education in secondary schools, most teachers in Nigeria's Federal Government Colleges don't have experience using computers for educational or industrial purposes because they don't know the basics of computer operations(Yusuf 2005, cited by Ololube, 2006).Similarly, students are embracing ICT incorrectly, since they are not making the most of the internet's potential in their academic pursuits. This can be seen in how these students utilise the Internet, as they log extensive amounts of time on various social networking sites like Facebook and Yahoo Messenger. In light of this, Nwankwo (2015) argues that ICT skills include information processing and presentation, which leads to an ICT-based learning environment, establishing effective learning experiences, and developing rich learning experiences, all of which necessitate enhanced pedagogy.Hence, when ICT is incorporated into classes, students become more engaged with their work, and ICT helps to support student-centred methods to teaching and learning, which are signs of how successful these ICT skills are in improving pedagogy (Ukonu & Umar, 2022).This means that instructors and secretaries who are proficient in ICT, especially word processing, will be highly valued in the modern workforce.

Word Processing Applicability

Word processing enables users to easily produce and alter documents, such as inputting data, editing, and moving words using a variety of fonts and styles and layouts. Word processing, as described by Agomuo (2014), is analogous to an electronic version of a typewriter since it allows users to create written text, save and edit that text in files, and print out copies of those files. Word processing software allows for the simple creation, editing, storage, and printing of

text documents such letters, memos, forms, employee performance evaluation inquiries, reports, security polls, general safety checklists, safety manuals, books, articles, media releases, and speeches (Stark, 2020). It allows users to do more than merely type a document; but also gives them the opportunity to store a document for later use or reference; edit presentation materials to satisfy a wide range of special needs; automate processes such as page numbering and attribute generation; gain additional control over page layout as well as ensure that the text in your file is accurately typed (Agomuo, 2014). In addition, every page will have the right page number since the word processor keeps track of it (Egbunefu, Amadi & Nwobike, 2018). Hence, word processorsare primarily used to create long or short reports, format documents to make them appealing and easy to read, structure the information and create templates, thereby increasing productivity.

In the educational context, word processors are used by teachers for a wide variety of purposes, including but not limited to: creating and printing classroom bulletins; instructional aids; certificates of recognition, as well as creating and preparing transparent slides (Aladwan, 2021). In other words, word processors are used by educators and administrative staff to do anything from jot down a quick note to build elaborate PowerPoint presentations, charts, make forecasts, compile statistics, and design promotional materials for a wide range of extracurricular activities. Secretaries utilise word processors to do similar things, such as draft reports for students, layout cultural publications, and make instructional materials and graphics (Hassan, 2015 cited in Aladwan, 2021). Accordingly, ICT skills may be greatly enhanced if educators contributed ideas, thoughts, and information to the development of innovative word processing tools for teamwork. According to Khudair (2016), educators may utilise word processors for anything from composing and storing letters and reports to creating and storing lesson plans,

assessments, and other documents. In addition to the ability to create, modify, save, print, retrieve, and delete files as needed, it also allows for the insertion of letters, words, or lines between pre-existing data (Han, Dou, Zeng, Wang,Yu, Zeng 2015).

The National Teachers Institute has emphasised the importance of being able to use a computer to transform letters and numbers into meaningful words, phrases, and written documents using Microsoft Word. It has also been found by Egbunefu et al. (2018) that proficiency with Microsoft Word is in high demand, as measured by a high improvement need index. Similarly, according to research by Aladwan, (2021), using a word processor to teach spelling, grammar, and punctuation led to statistically significant improvements in student achievement (experimental group) and writing competency. Words, lines, paragraphs, and even large sections of text may be moved and copied inside a document (Levinson, 2016). To go even further, Riyadi and Wulandari (2017) in their research on the use of word processors for class management showed how a word processor can be used to adjust the on-screen presentation of a document by shifting the page up or down, flipping the screen for a single word or the whole page, and changing the font size and style. This leads Egbunefu, et al. (2018) to conclude that for teachers or secretaries to make the most of the features of Microsoft Office suite and ensure that their classrooms or offices run smoothly and efficiently, they need to acquire knowledge of information systems application skills connected to the use of this application software. Then again, according to Umezulike's (2021) study, business teachers only seldom make use of word processing abilities while instructing their students. This simply indicates that the anticipated advantages of word processors in the lives of students and educators are only partially realised since the majority of teachers of business studies only utilise these technologies in a limited capacity.

Use of Online research skill

Research is defined as an intellectual activity centred on material inspection to discover, create techniques, and systems to advance human understanding (Okafor, 2011). It's a structured process that calls for the researcher to hone certain very basic skills before any study can be considered a success (Odu, 2018). This type of expertise is most commonly seen in the scientific field, information gathering, and administration of document-writing standards and technology tools (Castillo-Martnez & Ramrez-Montoya, 2021). According to Hedengren (2004) and White (2007), developing a research necessitates fundamental understanding of certain research skills, which sometimes require formal training and time to perfect. Furthermore, Meerah & Arsad (2010) asserts that such skills including the use of appropriate methods and resources can be learned in part through the internet. Hence, one of the most valued ICT skill and outcome of secondary schooling is the development of students' ability to do independent research (Maddens, Depaepe, Janssen, Raes & Elen, 2021) which of course can only be achieved when teachers are able to carry out research as well.

Online research skills simply refer to and include the ability to search for, find, collect, analyze, interpret, and evaluate relevant information on the internet. Teachers and secretaries need these online research skills in order to advance in their daily activities in the schoolas well as in one’s career (DuBravac, 2013; Schleicher, 2012). According to Ukonu & Umar (2022) online research skills include the ability to carry out fundamental online information management skills such as search engine research, checking resources, FAQs, and online forums, among others. In light of this, several scholars place great emphasis on acquiring research skills that are deemed vital in the modern world (Deen & Lucas, 2006; Maher et al.,2009; Robertson & Blackler, 2006; Steigelmeyer & Feldon, 2009).Teachers may better prepare their students for success in higher education by helping them develop skills in online research management.

However, this can only be accomplished if teachers themselves possess these abilities. This is due to the fact that students learn best via practise, which means that instructors need to exhibit knowledge of research as well as the ability to apply research skills to get information.

With reference to the process of obtaining information, ICT also provides access to a vast amount of information through the use of search engines such as Google, Bing, and Yahoo, among others, the magnitude of which is beyond any kind of conception (Gavali, 2015).Browsers enable researchers to obtain information that may be restricted to the user due to geographical location or financial constraints, as well as access to more up-to-date information, comprehensive links to additional resources to relevant material, and assistance in tracking relevant information on a specific subject by using various search methods (Ogbole, 2017). Teaching students' online research management skills gives them the tools they need to find, evaluate, and use information available on the internet.A student's ability to acquire research skills is proportional to the degree to which their instructors presented the material in an in-depth manner. This is measured by how the instructors guided their pupils through the process of applying the acquired information and abilities, such as how to explore a problem, come to a conclusion, examine an idea, synthesise research, present results, and launch a project (Meerah & Arsad, 2010). However, Afolabi & Aragbaye (2022) revealed that teachers with the ability to identify and define information, skills to use, dispose of, and recognise the need for information, skills to communicate and present information, and skills to evaluate the reliability of information resources were increasingly scarce. Similarly, Adeshina, Udoh, Ndomi, and Aliyu (2013) found in their research that the same lack of IT skills prevented instructors from gaining access to the Internet and therefore obtaining vital information for successful instructional delivery.This simply implies that teachers and secretaries who know how to use numerous

internet methods can prosper both professionally and personally.Since it also expands the possibility of collaboration.

Adoption of online collaboration

Collaboration is essential in almost all stages of education, secondary, particularly in higher education, where students are sometimes required to work in a group as a team (Snyder, 2008 cited Seaba & Kekwaletswe, 2012). Likewise, secondary school teacher collaboration can provide a fertile environment for teacher professional learning (Jong, Meirink, & Admiraal, 2018). In a similar vein, Heidrich, Kasa, Shu, and Chandler (2015) confirm that the quality of the work students produce is a direct reflection of how well they are able to work together and effectively as a team. Online collaboration entails collaborating via the technology and web techniques and this might mean physically being in an office setting with other people, or it could mean working together with others in a virtual setting using tools like a chat room or a file sharing service. According to Laister & Kober (2005), online collaboration refers to collaborative work in online learning environments, which is one of the defining characteristics of the networked economy. Similarly, in line with Castell's vision of a knowledge society, online collaboration is credited for fostering in its students employable, transferrable, and "twentieth-century" abilities (Dron & Anderson, 2009; Facer 2011; Keane, Keane, & Blicblau, 2014; Webb 2014). Moreover, Elgort (2007) and Toth (2010) affirm that teachers can use this skill as well as various tools to create a virtual space for their students to participate in various projects and group activities. Learners on the other hand are also able to share ideas and viewpoints without being limited by time or location (Chen, Gonyea, & Kuh, 2008), which fosters knowledge co-construction (Brindley, Blaschke, & Walti, 2009), supports learners in participating in wider, more complex, and cognitively difficult conversations (Benbunan-Fich, Hiltz, & Turoff, 2003),

and increases the depth and quality of learning experiences, which leads to successful learning (Bernard, Rubalcava, & St-Pierre, 2000).

The term "online collaborative skills" refers to a condition wherein learners participate or seek to learn something together using digital skills. Teachers who are comfortable with technology are always on the lookout for new methods to incorporate real-world experiences into their lessons and collaborative gathering is one way for teachers to encourage students' creativity and productivity while they work as a team (Tseng, Wang, Ku & Sun, 2009). Thus, integration of online collaborative tools and skillsin the teaching and learning environment can deepen the knowledge as well as enable students to communicate, collaborate and engage fast and easily. In addition, by supporting instructional objectives, online collaboration also ensures that teachers can exchange diverse perspectives, and proper teaching and learning strategies are formulated and implemented without being limited by time or space (Chen, Looi, & Chen, 2009; Lai, 2011; Ferri, Grifoni, & Guzzo, 2020). This implies that online collaboration enhances the way teachers interact and solve problems, leading to more online research innovation, more efficient procedures, more success, and improved communication. Subsequently, students can swiftly learn and apply these skills from their teachers using collaborative technology, which in turn assiststhem in their academic studies and also in improving their research skills (Amaechi &; Opesade, 2021).This is evident in a study by Uribe, Klein, and Sullivan (2003) which revealed that participants in computer-mediated collaborative groups had more favourable views about learning in groups and did much better than those who worked alone. However, this ease with which new and existing information, operations, resources, and announcements become accessiblethrough collaboration leads to a greater reliance on e-mail.

Electronic mail: Set-up and Management

Electronic mail is one of the quickest modes of communication and has become the norm in almost all units in every organization. This is because individuals and businesses collaborate across physical distances and electronic means to create projects, generate innovations, solve complicated organisational challenges, propose new organisational strategies, develop new services, and manage both projects and businesses (Edmondson & Nembhard, 2009). Hence, in recent years, e-mail has become increasingly popular, particularly among teachers, principals, students, and secretaries in the educational system since itenables for the flow and exchange of information in big quantities and concurrently to numerous recipients, regardless of location, nearly instantly and at a cheap cost.E-mail, according to Pollock & Hauseman (2018), is a considerably more private method of communication since it allows administrators, teachers, students, and secretaries to send messages to a single recipient or a small number of recipients. This means that teachers may have assignments submitted to their account, graded, and then sent back to students' accounts.

Since the advent of electronic mail, several scholars claim that there has been as increase in the amount of information and contact sent and received by school administrators and other school personnel (Hines, Edmonson, & Moore, 2008).A schoolteacher who would be away from their workplace or school can access their emails, data, or establish a remote desktop session on their office PC using a secure Virtual Private Network (VPN) connection on the Internet (Aderogba et.al, 2021). Studies of e-mail communication have sparked interest and questions about the adequacy and effectiveness of electronic messages for information management (Mano & Mesch, 2010), with some scholars dismissing the fact that it still has a long way to go in terms of education. People also report that they become lost when checking their email (Hanrahan &

Pérez-Quiñones, 2015), which might lead to spending more time on email than necessary. Hence, organizations will need to learn more about email culture before they can reap the benefits of their employees relying on the platform (Quaresma, Silva, & Marreiros, 2012).

Managing and organising information and knowledge is clearly challenging (Storey & Quintas, 2001), and instantaneous methods of exchanging information, such as e-mail, will surely alter the way information is transmitted in all fields. Organizations need to establish a modernisation process, and ICTs (information and communication technologies) are crucial to the management of information and communication within that process (Quaresma, et al., 2012). Since e-mail has the potential to improve the quality, speed, and productivity of employees as well as the relationships between an organisation and its stakeholders, it is no surprise that Quaresma,et al., (2012) argue that it is one of the most used information and communication technologies by organisations. As shown in a research by Pollock and Hauseman (2019), e-mail communication has also increased the stress on modern principals and transformed the principalship into a nomadic career with irregular hours.

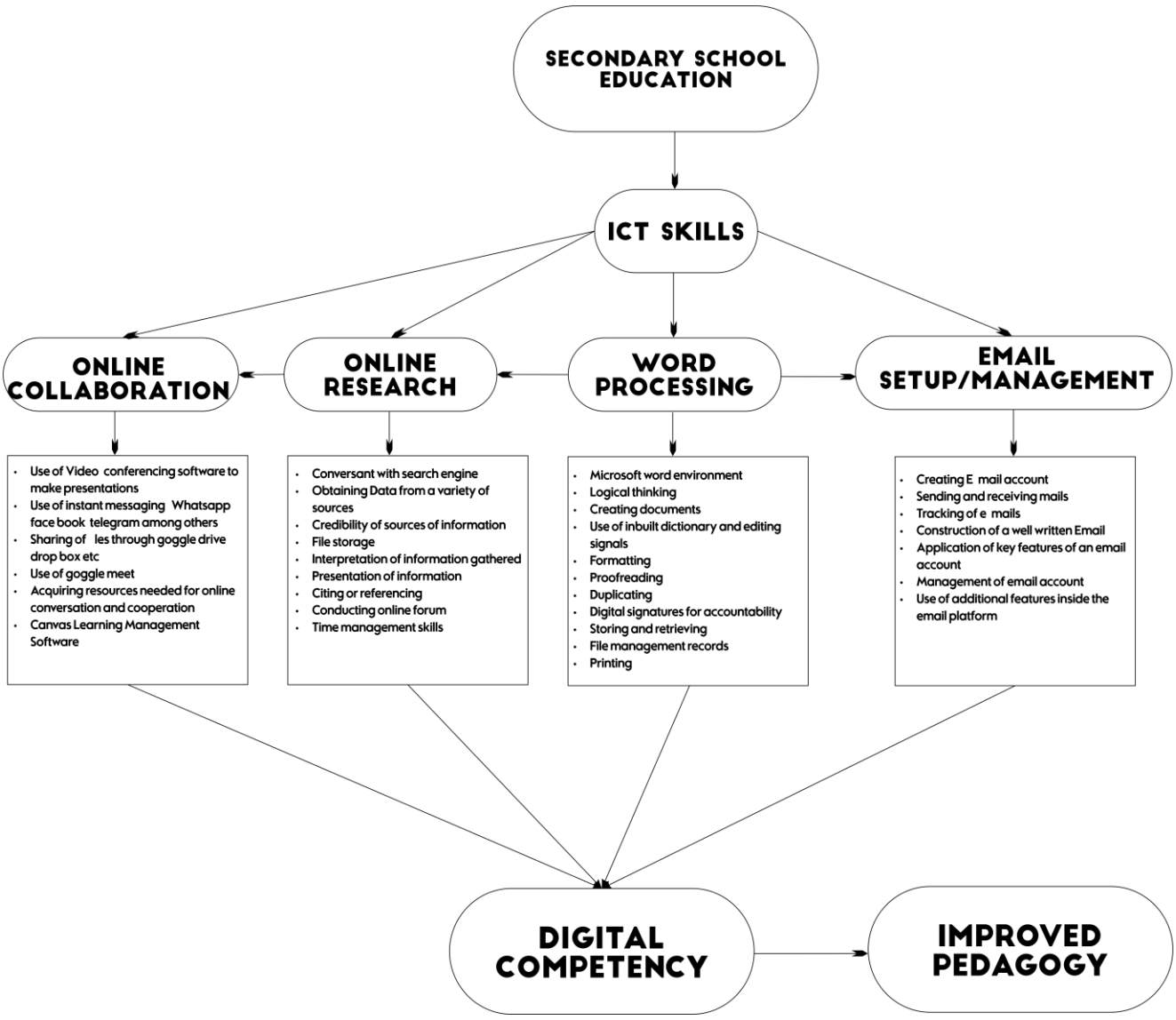


Figure 1 Conceptual Clarifications

3 Methodology

A descriptive survey was employed as the research method in this study. According to McCombes (2019) descriptive research is a type of research design that aims to accurately and systematically describe a population, situation or phenomenon. The descriptive survey method was chosen because it emphasizes on individuals and their characteristics, which might assist the researcher in eliciting information from the respondent involved in the study. This study was conducted in senatorial district of Zone C in Benue state, Nigeria. The population for the study

comprised of business teachers and secretaries of selected public secondary schools from Zone C in Benue State. Zone C comprised Apa, Oju, Obi-Agatu, Ogbadibo, Otukpo, Ohimini and Okpokwu. The population allocations were selected from Otukpo, Ohimini and Okpokwu Local Government Areas from the zone C using simple random sampling technique, where the schools were selected for the study. The population distribution shows that Otukpo has 17 secondary schools, Okpokwu has 13 secondary schools and Ohimini has 9 secondary schools (Universal Basic Education, Benue State). The sample for the study consists of all business teachers and secretaries of selected government owned secondary schools from zone C in Benue State. Simple random sampling technique was used to select the number of schools for the study. Through a lucky dip 5 secondary schools were picked from each local government given a total of 15 secondary schools involved in the study. Otukpo has 17 secondary schools out of which 5 secondary schools were selected for the study; Okpokwu has 13 secondary schools out of which 5 secondary schools were selected for the study; Ohimini has 9 secondary schools out of which 5 secondary schools were also selected for the study. Meanwhile the number of business teachers was 38 consisting of Otukpo, Okpokwu and Ohimini and number of secretaries was 15, one from each school making it a total of 53 respondents for the study. Therefore, the sample size was manageable. Mean was used to analyze research question 1-4, and standard deviation to determine the closeness or otherwise of the responses from the mean, represented in charts while T- test was used to test the hypotheses. The data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.

RESULTS

Analysis of Respondents' Demography

Table 1: Frequency and percentage of Respondents Demography

Variable	Frequency	Percentage
Local Government Area		
Okpokwu	16	30.2
Otukpo	20	37.7
Ohimini	17	32.1
Total	53	100
Designation		
Teachers	38	71.7
Secretaries	15	28.3
Total	53	100.0
Gender		
Male	36	67.9
Female	17	32.1
Total	53	100.0
Educational Qualification		
NCE/OND	6	11.3
Bachelor Degree	46	86.8
Masters Degree	1	1.9
Total	53	100.0
YearOfWorkingExperience		
1-10 years	21	39.6
11-20 years	22	41.5
21-30 year	10	18.9
Total	53	100.0
Age		
1-25	1	1.9
26-40	30	56.6
41-50	19	35.8
51 and above	3	5.7
Total	53	100.0

The above Table 1 shows that 16 respondents representing 30.2% are from Okpokwu LGA, 20 respondents representing 37.7% are from Otukpo while 17 respondents representing 32.1% are from Ohimini. The table also shows that 38 (71.7%) of the respondents were teachers while 15 (28.3%) of the respondents were secretaries. Additionally, the table showed that 36 (67.9 %) were male while 17 (32.1%) were female. The table indicates that 6 persons which represents 11.3% of the respondents are NCE/OND holders; 46 persons which represents 86.8% are

Bachelor Degree holders while only 1 person representing 1% of them have Masters qualification. With regards to the years of working experience of the respondents, 21 (39.6%) respondents have 1- 10 years of experience, 22 (41.5%) have 11 – 20 years of experience while 10 (18.9%) have 21 – 30 years of experience. Then, in regards to the age demographics of the respondents. It revealed that out of the 53 respondents, 1 person which represent 1.9% fall between 1-25 years of age; 30 respondents representing 56.6% fall between 26-40 years of age; 19 respondents representing 35.8% fall between the ages of 41-50; while 3 respondents representing 5.7% are 51 years of age and above.

Research Question One: To what extent are word processing skills adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state?

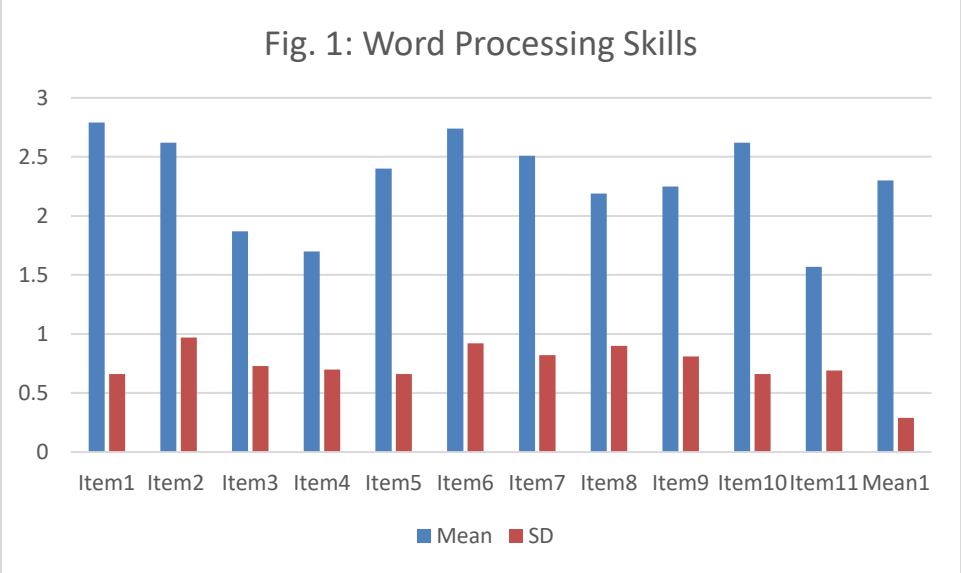
Table 2: Mean and Standard Deviation of responses of respondents on the extent to which word processing skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remark
1	Ability to make use of Microsoft word environment	2.79	0.66	HE
2	Ability to manipulate the keys of the keyboard	2.62	0.97	HE
3	Ability to place the right fingers to the allotted keys	1.87	0.73	LE
4	Ability to attain keyboarding speed of 50 words in a minute	1.70	0.70	LE
5	Skillfulness in operating computer for effective file management	2.40	0.66	HE
6	Average in the skills of spelling, grammar and punctuation where necessary	2.74	0.92	HE
7	Ability to make use of inbuilt dictionary and editing signals to avoid spelling errors and grammar free	2.51	0.82	HE
8	Ability to make use formatting skills to avoid spelling errors and grammar	2.19	0.90	LE
9	Ability to make use of proofreading skills to avoid unambiguously message	2.25	0.81	LE
10	Ability to make use of logical thinking skill to solve operational problems	2.62	0.66	HE
11	Ability to create and use digital signatures for accountability	1.57	0.69	LE
	Grand Mean and Standard Deviation	**2.30**	**0.29**	**LE**

Note: $\bar{X}$ = Mean, SD = Standard Deviation, HE = High Extent, LE = Low Extent

Table 2 shows that the word processing skills in item statement 1, 2, 6, 7 and 10 with a mean range of 2.51 – 2.79 are adopted to a high extent while skills in item statement 3, 4, 5, 8, 9 and 11with a mean range of 1.57 –2.40 are adopted to a low extent. Similarly, with grand mean of

2.30 and standard deviation of 0.29, the Table 2 indicated that generally, word processing skills were adopted to a low extent by business teachers and secretaries on digital research proficiency in ICT skills in Benue state. Likewise, standard deviation ranged from 0.66 – 0.97 indicating that the responses of the respondents were close to one another with regards to word processing skills. Figure 1 presents the mean and standard deviation in a bar chart.



Hypotheses One:

Ho_1: There is no significant difference between the mean responses of teachers and secretaries on the extent to which word processing skill are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Table 3: t-test analysis on the mean responses of teachers and secretaries on the extent to which word processing skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

Variable	N	Mean	Std. Dev.	Df	Mean diff.	t-value	p-value	Sig. Level	Remark
Teachers	38	2.30	0.33	51	.01	.16	.88	.05	NS
Secretaries	15	2.28	0.19						

Key: S = Significant, NS = Not Significant.

Result on Table 3 shows t (2, 51) = .16, P = .88 >.05. The table showed t-value of .16, at 51 degree of freedom and p-value of .88 which is greater than .05. Therefore, the null hypothesis was not rejected. Thus, there is no significant difference between the mean responses of teachers and secretaries on the extent to which word processing skills were adopted among business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Research Question Two: What is the extent of online research management skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state?

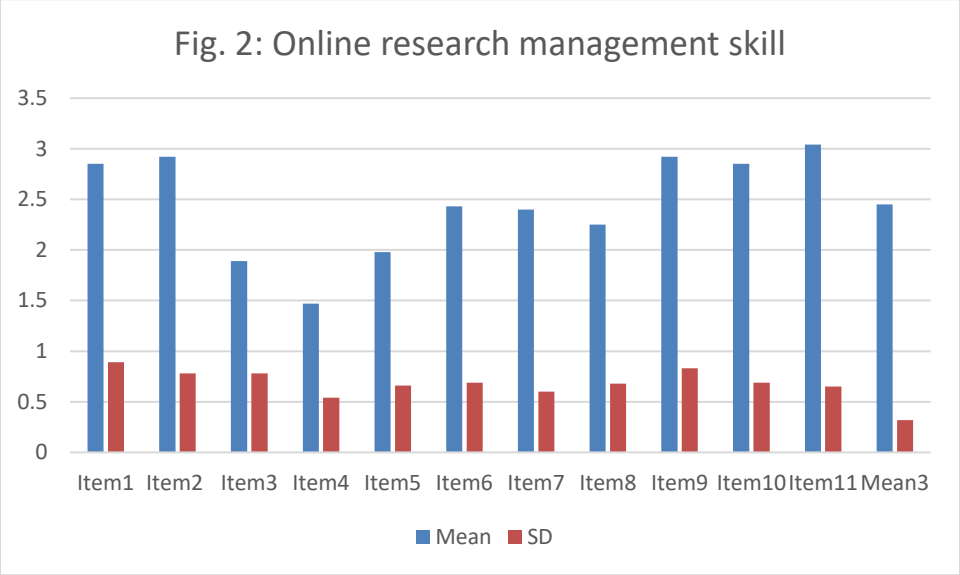
Table 4: Mean and Standard Deviation of responses of respondents on the extent to which online research management skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remark
1	Ability to select search engine for accessing web pages	2.85	0.89	HE
2	The ability to use different search engines to find information	2.92	0.78	HE
3	Ability to make use of goggle drive for file storage	1.89	0.78	LE
4	The ability to use google drive for slide show presentations	1.47	0.54	VLE
5	Ability to check sources with search engines for credibility	1.98	0.66	LE
6	Ability to credit other researchers during information searching	2.43	0.69	LE
7	Ability to create online forum for meeting	2.40	0.60	LE
8	Ability to use power point in research presentation	2.25	0.68	LE
9	Ability to gather information and put it in a folder or a file	2.92	0.83	HE
10	Ability to communicate results from the information gotten from the web page	2.85	0.69	HE
11	Being mindful of time management skills when conducting online research	3.04	0.65	HE
	Grand Mean and Standard Deviation	**2.45**	**0.32**	**LE**

Note: $\bar{X}$ = Mean, SD = Standard Deviation, HE = High Extent, LE = Low Extent

Table 4 shows that the online research management skills in item statement 1, 2 and 9 – 11 with mean range of 2.85 – 3.04 were adopted to a high extent while the skills in item statement 3, 5 –8 with a mean range of 1.89 - 2.43 were adopted to a low extent. However, skill in item 4 was adopted to a very low extent. Similarly, with a grand mean of 2.45 and standard deviation of 0.32, the Table indicated that generally, online research management skills were adopted to a low extent by business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Moreover, standard deviation ranged from 0.54 – 0.89 indicating that the responses of the respondents were close to one another with regards to online research management skills. Figure 2 presents the mean and standard deviation in a bar chart.



Hypotheses Two:

Ho_2: There is no significant difference on the mean responses of teachers and secretaries on the extent to which online research management skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Table 5: t-test analysis on the mean responses of teachers and secretaries on the extent to which online research management skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

Variable	N	Mean	Std. Dev.	Df	Mean diff.	t-value	p-value	Sig. Level	Remark
Teachers	38	2.42	0.35	51	-.14	-1.38	.17	.05	NS
Secretaries	15	2.55	0.23						

Key: S = Significant, NS = Not Significant.

Result on Table 5 shows t (2, 51) = -1.38, P = .17 > .05. The table showed t-value of -1.38, at 51 degree of freedom and p-value of .17 which is greater than .05. Therefore, the null hypothesis was not rejected. Thus, there is no significant difference between the mean responses of teachers and secretaries on the level at which online research management skills were adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Research Question Three: To what extent are online collaboration skills adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state?

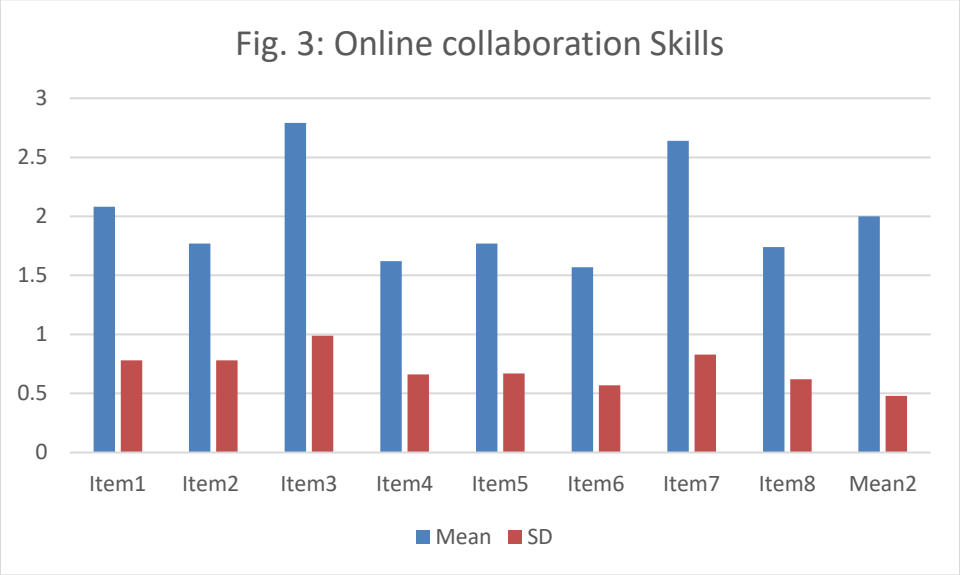
Table 6: Mean and Standard Deviation of responses of respondents on the extent to which online collaboration skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remark
1	Ability to make use of Video-conferencing software	2.08	0.78	LE
2	Ability to make use of Skype to make presentation	1.77	0.78	LE
3	Ability to make use of instant messaging (Whatsapp, face book, telegram among others)	2.79	0.99	HE
4	Ability to share files through goggle drive, drop box etc	1.62	0.66	LE
5	Ability to make presentation through zoom	1.77	0.67	LE
6	Ability to make use of goggle meet eg voice calls, video calls	1.57	0.57	LE
7	Ability to communicate and interact with other ICT users through the use of internet	2.64	0.83	HE
8	Ability to make use of canvas learning management system	1.74	0.62	LE
	Grand Mean and Standard Deviation	**2.00**	**0.48**	**LE**

Note: $\bar{X}$ = Mean, SD = Standard Deviation, HE = High Extent, LE = Low Extent

Table 6 shows that the online collaboration skills in item statement 3 and 7 with mean of 2.79 and 2.64 respectively are adopted to a high extent while the other 6 presented skills in item statement 1, 2, 4 – 6 and 8 with a mean range of 1.57 – 2.08 are adopted to a low extent. Similarly, with a grand mean of 2.00 and standard deviation of 0.48, the table indicated that generally, online collaboration skills were adopted to a low extent by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

Also,, standard deviation ranged from 0.62 – 0.99 indicating that the responses of the respondents were close to one another with regards to online collaboration skills. Figure 2 presents the mean and standard deviation in a bar chart.



Hypotheses Three:

Ho_3: There is no significant difference between the mean responses of teachers and secretaries on the extent to which online collaboration skills are adopted by business teachers and secretaries on digital research proficiency in information communication technology skills in Benue state.

Table 7: t-test analysis on the mean responses of teachers and secretaries on the extent to which online collaboration skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

Variable	N	Mean	Std. Dev.	Df	Mean diff.	t-value	p-value	Sig. Level	Remark
Teachers	38	1.99	0.51	51	-.04	-.26	.80	.05	NS
Secretaries	15	2.03	0.43						

Key: S = Significant, NS = Not Significant.

Result on Table 7 shows t (2, 51) = -.26, P = .80 >.05. The table showed t-value of-.26, at 51 degree of freedom and p-value of .80 which is greater than .05. Therefore, the null hypothesis was not rejected. Thus, there is no significant difference between the mean responses of teachers and secretaries on the extent to which online collaboration skills were adopted among business teachers and secretaries on digital research proficiency in ICT skills in Benue state.

Research Question Four: To what level are E- mail management and set-up skills adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state?

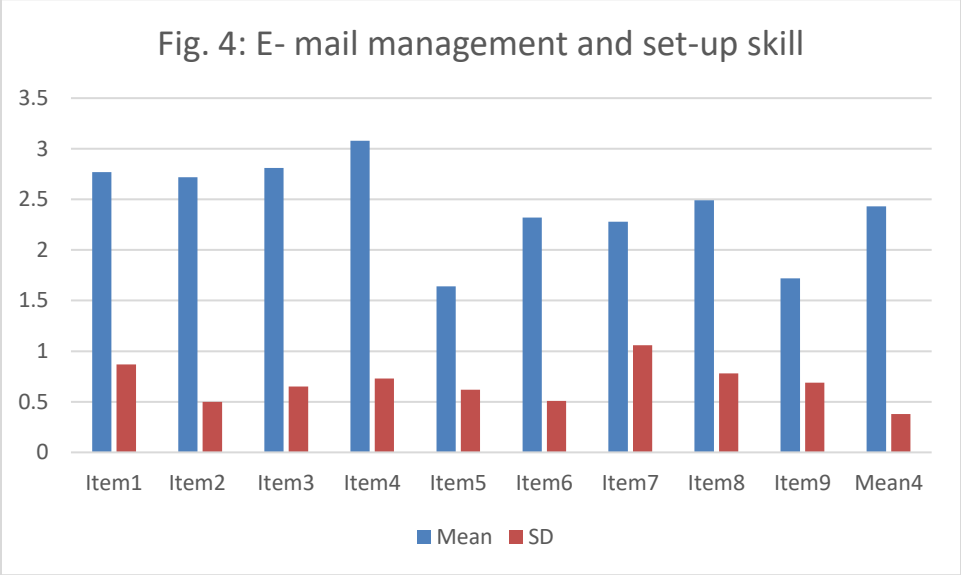
Table 8: Mean and Standard Deviation of responses of respondents on the extent E- mail management and set-up skills are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

S/N	ITEM STATEMENT	$\bar{X}$	SD	Remark
1	Ability to create E-mail account	2.77	0.87	HE
2	Knowledge of sending and receiving mails	2.72	0.50	HE
3	The ability to track your e-mails through your email account	2.81	0.65	HE
4	Construction of a well written communication for good messages	3.08	0.73	HE
5	Capability to use key features of an email account such as charts, video calls, calendars, spam filters, and drafts, among others.	1.64	0.62	LE
6	Ability to manage your email account	2.32	0.51	LE
7	Ability to organise and find important emails, as well as read and draft emails, spam among others	2.28	1.06	LE
8	Ability to sign in and out of an email account	2.49	0.78	LE
9	Possibility of using other tools in an email account, such as a translator, smart compose, schedule etc	1.72	0.69	LE
	Grand Mean and Standard Deviation	**2.43**	**0.38**	**LE**

Note: $\bar{X}$ = Mean, SD = Standard Deviation, HE = High Extent, LE = Low Extent

Table 8 shows that the E- mail management skills in item statement 1 – 4 with mean range of 2.72 – 3.08 were adopted to a high extent while the skills in item statement 5 – 9 with a mean range of 1.64 - 2.49 were adopted to a low extent. Similarly, with a grand mean of 2.43 and standard deviation of 0.38, the Table indicated that generally, E- mail management skill were adopted to a low extent by business teachers and secretaries on digital research proficiency in information and communication technology skills in Benue state

Furthermore, standard deviation ranged from 0.51 – 1.6 indicated that the responses of the respondents were close to one another with regards to E- mail management skills. Figure 4 presents the mean and standard deviation in a bar chart.



Hypotheses Four:

Ho_4: There is no significant difference between the mean responses of teachers and secretaries on the level to which E-mail management and set-up skills are adopted by business teachers and secretaries on digital research proficiency in information communication technology skills in Benue state

Table 9: t-test analysis on the mean responses of teachers and secretaries on the extent to which E-mail management and set-up skill are adopted by business teachers and secretaries on digital research proficiency in ICT skills in Benue state

Variable	N	Mean	Std. Dev.	Df	Mean diff.	t-value	p-value	Sig. Level	Remark
Teachers	38	2.41	0.41	51	-.05	-.40	.69	.05	NS
Secretaries	15	2.46	0.32						

Key: S = Significant, NS = Not Significant.

Result on Table 9 shows t (2, 51) = -.40, P = .69>.05. The table showed t-value of -.40, at 51 degree of freedom and p-value of .69 which is greater than .05. Therefore, the null hypothesis was not rejected. Thus, there is no significant difference between the mean responses of teachers and secretaries on the extent to which E-mail management and set-up skills is adopted by business teachers and secretaries on digital research proficiency in information communication technology skills

Discussion of Findings

Analysis of research competency in ICT skills with regards to adoption of word processing skills the findings in Table 2 indicate that generally, word processing skills were adopted to a low extent among business teachers and secretaries on digital research proficiency in information communication technology skills. This finding supports those of Egbunefu, et al. (2018) who found that secretaries who want to do their jobs well and help their offices run smoothly and efficiently should learn how to use the Microsoft Office suite of programmes and other digital applications. The finding also agrees with Umezulike's (2021) who revealed that business subject teachers employ word processing skills to a limited extent when teaching business subjects.

The finding in Table 4 indicated that online research management skills were adopted to a low extent among business teachers and secretaries on digital research proficiency in information communication technology skills in Benue state. The finding is in line with Afolabi et al. (2022) who reported that teachers in selected secondary schools had a poor degree of self-efficacy when it comes to information resources.

The finding in Table 6 indicated that online collaboration skills were adopted to a low extent among business teachers and secretaries on digital research proficiency in information communication technology skills. This finding corroborates with the finding of Amaechi and

Opesade (2021) that students can swiftly learn and apply skills from their teachers using collaborative technology, not only assisting them in their academic studies, but also to research abilities.

Similarly, Table 8 indicated that E- mail management skills were adopted to a low extent among business teachers and secretaries on digital research proficiency in information communication technology skills in Benue state. The findings contradict with Pollock and Hauseman's (2019) that e-mail communication has raised the strain on today's principals and changed the principalship into a mobile profession with unpredictable work hours.

Conclusion

ICT has become an essential component of many parts of people's daily lives, not only education. The findings of this study will assist every educational system since ICT plays a critical role in changing and upgrading present educational institutions and modes of learning. As a result, it has become critical for individuals to modify their ways in response to technological innovation. Teachers might supplement traditional teaching methods with a range of applications or rely on internet resources to keep students interested. Teachers may save a lot of time by using virtual lesson preparation, grading tools, and even online examinations which have been inculcated in some of the external examination (Joint Admission Matriculation Examination JAMB). As a result, Technology digital proficiency in the classroom may promote student engagement, assist instructors in improving lesson preparation, and encourage tailored learning, all of which will improve student performance, teacher competency, and regular effective training. This can also aid with administrative activities like as information storage, organisational learning, and strategic planning, providing for greater flexibility and agility.

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