



## **DIGITAL TECHNOLOGY SKILLS REQUIRED OF GRADUATING OFFICE TECHNOLOGY AND MANAGEMENT STUDENTS FOR EFFECTIVE PERFORMANCE IN THE CONTEMPORARY WORLD**

<sup>1</sup>Ademiluyi, Abosede, B. PhD  
[boseluyi@gmail.com](mailto:boseluyi@gmail.com)

<sup>2</sup>Adegboye, Adenrele O.  
[lekan7777@gmail.com](mailto:lekan7777@gmail.com)

<sup>3</sup>Akande, Risikat A.  
[akandeadeolarsk@gmail.com](mailto:akandeadeolarsk@gmail.com)  
Department of Office Technology and Management,  
Osun State Polytechnic, Iree,  
Osun State, Nigeria

### **Abstract**

*The study examined digital technology skills required of graduating Office Technology and Management students for effective performance in the contemporary world. Descriptive survey design was used for the study. Two research questions and two null hypotheses guided the study. The population of the study comprised 175 HND II students of Office Technology and Management Department in two tertiary institutions in Osun State offering HND OTM programme. Census survey was employed for the study. A structured questionnaire with 22 items was used to collect data from the respondents. The instrument was validated by two experts. The reliability of the instrument was ascertained using Cronbach Alpha method. A coefficient of 0.85 was obtained which indicated that the instrument was very reliable. Mean and standard deviation were used to analyze the data collected in order to answer the research questions while independent samples t-test was used to test the hypotheses at 0.05 level of significance. Based on the findings of the study, it was concluded that database ( $t_{150} = 1.062, P > 0.05$ ) and desktop publishing digital skills ( $t_{150} = 0.307, P > 0.05$ ) were indispensable and germane for effective performance in the contemporary world of work and business. It was recommended among others that NBTE should ensure regular review and update of OTM curriculum to reflect database digital skills required for effective performance in the global-driven world while tertiary institutions should provide adequate digital technology equipment with enabling environment that will enhance acquisition of necessary skills required for job effectiveness in contemporary world.*

**Key words:** *Digital, Technology, Skills and OTM*

### **Introduction**

Digital technology has led to the emergence of the digital world which in turn has brought about tremendous development to all fields especially education. Recently, digital technologies have developed rapidly, changing the way people access information as well as human interactions and communication. Most importantly, it has also transformed various jobs, thus impacting positively on



the economy and society. The use of digital technologies for pedagogical delivery has undoubtedly affected teaching and learning in every aspect. The integration of these technologies into educational system may help revitalize teachers and learners in skills acquisition and utilization. Educational practitioners observed that digital technologies have the prospects for improving teaching and learning as well as providing job opportunities for citizens (Ninlawan, 2015; Ido & Asuquo, 2014). However, it is obvious that the traditional educational method is not suitable for preparing learners to function effectively in today's digital world. As a result, educational institutions must adapt to the challenges of automation and digitization with a highly practical orientation and accelerated changes in vocational training to respond to evolving occupational profiles and skills requirements. Moreover, further training and retraining will also be important, since employees will have to engage in lifelong learning to be capable of responding as rapidly and effectively as possible to changes caused by digitization (Brandes & Zobrist, 2017).

Kalleberg and Dunn (2016) observe that digital skills have evolved from the use of computers to the use of mobile connected devices and embedded technologies. The International Telecommunication Union (2020) categorized digital skills into three levels: basic, intermediate and advanced, but emphasized that acquisition of digital skills facilitates accelerated development. For example, basic skills consist of entry-level proficiency; intermediate involves the use of ICT skills in meaningful and advantageous ways while advanced skills are required to perform specialized ICT and professional tasks. For this reason, Marie and Kaur (2020) explain that one must consider the type of digital skills needed and the level of digital skills required to participate and meet the organizational goals. Digital technology skills constitute one of the five foundational pillars of the Digital Economy for Africa initiative, launched by the World Bank, and are needed to mobilize digital innovations, transform economies, societies and governments in Africa. The other foundational pillars are digital technology infrastructure, digital technology platforms, digital technology financial services and digital technology entrepreneurship (World Bank Group, 2020). African economies require both digitally competent workforce as well as digitally literate citizens who could reap the benefits that the digital society brings.

Digital skills are broadly defined as the skills needed to use digital device, communication applications and networks to access and manage information from basic online searching to specialist programming and development. Lyashenko (2016) refers to digital skill as a continuum of skills to communicate, collaborate and solve problems for effective and creative self-fulfillment in life, learning, work and social activities. Sharma (2017) asserts that digital technologies denote a wide range of technologies, tools, services and applications using various types of hardware and software. Similarly, Bates (2016) views digital technology as electronic tools, devices and resources that generate, process or store data. These skills help people to communicate, collaborate, share digital content and solve problem anywhere in the world. They facilitate activities by electronic means to create, store, process, transmit and display information. In addition, these are the skills one needs to study and work in our fast-evolving digital world (Ademiluyi, 2019). It involves the capability to use digital devices, applications and software to find, review, organize and share information effectively. Furthermore, these skills are needed for day to day activities such as applying for jobs online, working online, banking, researching, e-mailing, chatting and shopping online among others.

The importance of digital technology skills to the development of individual and the nation cannot be over emphasized as it supports effective communication, increases efficiency, enables creativity, improves security and evaluate information among others. Digital skills can improve one's confidence to use technology for work, learning and daily life activities. Possession of digital skills involves a combination of digital competence, knowledge, practical ability, research, creativity digital learning and communication. According to Hirsch (2016), essential digital skills include: ability to use various devices for tasks, find information on the internet, communicate socially and professionally



using email and social media platforms, bank, shop, access services or apply for jobs on-line among others.

The rapid development of technology means that digital technology pervades the globe and it is imperative for the education sector to identify how digital skills can be acquired in teaching and learning process. Digital technology has immensely changed the pattern of work as well as teaching and learning processes. The integration of digital technologies into educational system can improve teaching and learning and provides effective interaction between teachers and students and thus giving room for acquisition of digital skills and knowledge. Similarly, the application of digital technology in educational field acts as a catalyst for change in education domain and they support independent learning, thereby ensuring effective individual and collaborative learning (Olise, 2014).

Hycinth (2013) defines technology as the study, development, application of devices and use of technologies for productive purposes. It involves the use of tools, machinery and procedures in achieving desired goals. Also, Atakpa (2013) describes technology as the use of machines in getting things done. According to Olayanju (2016), technology in education is the application of scientific knowledge and tools to solve practical problems. In addition, Nedum-Ogede (2016) views technology as the application of scientific method in solving problems regarding impartation of skills to meet the changing needs and demands of society. In a similar vein, Morrison, Ekwue and Crossdale-ovwido (2014) see technology as innovation and creativity aimed at advancing individuals in particular and society at large. Therefore, technology can be seen as creativity and application of concepts, principles, processes and procedures for the improvement of human life.

Skill is the ability to do something well, which is obtained education, training or experience. Collins (2014) defines skill as expertness, aptitude and competence appropriate for a particular job. Boyatzis (2015) sees skill as ability to demonstrate a system and sequence of behavior that is functionally related to attaining a goal. In order to acquire these skills, individual needs to acquire basic training and knowledge relating to the task to be performed.

Therefore, skill acquisition is the ability an individual acquires through training, education or experience, which enables individual to function effectively for the benefit of all and sundry. Acquisition of skills in any learning environment requires various training which invariably enables students to learn by improving their knowledge, skills and attitudes. Ezeani and Ogundola (2016) explain that lecturers do not adequately care if their students are actually learning new relevant skills and behaviours rather they laid emphasis on theory instead of practical. This implies that lecturers should inculcate the knowledge and skills required of students by employers of labour in today's digital world rather than concentrating on theory.

Office Technology and Management (OTM) is a recent nomenclature for Secretarial Studies programme in Nigeria. As the name implies, emphasis has shifted from the use of traditional tools to the use of new technologies in workplace. The programme is a comprehensive activity-based educational programme that is concerned with the acquisition of information technology skills, understanding, attitudes, work habits and competencies that are requisite to success in secretarial and office management occupations (Ojohwoh, 2014). Therefore, maximum acquisition of skills by OTM students tends to promote individual and economic developments.

Database is an organized collection of data related to a particular field. It is an integrated collection of logically related records or files consolidated into a common pool that provides data for one or multiple uses (Elmasri & Navathe, 2011). It is a logically coherent collection of data with inherent meaning. A database is designed, built and populated with data for a specific purpose. In addition, a functional database, must not only store large amounts of records properly, but be accessed easily and quickly.

Fwangmut (2016) explains that database Management System (DBMS) is a general purpose software that facilitates the processes of defining, constructing, manipulating and sharing database among various users and applications. It is a collection of programs that enables users' to create



and maintain a database. Moreover, Alberto (2013) defines database digital skill as technical knowledge or ability to store, access and retrieve organized collection of data that are related to a particular field. The primary goal of a DBMS is to store, maintain and retrieve database information conveniently, quickly and efficiently. Database digital skills required to excel in digital world include: ability to identify fields, records, data attributes, insert, delete, and update record, use structured query language, web database programming, identify primary and foreign keys, create relationships, extract database objects, knowledge of disk storage, file systems and file structures among others. Ninlawan (2015) observes that the integration of database digital technology into Office Technology and Management curriculum has revitalized the programme and improved office functions performance. Karen's (2021) study revealed that DBMS can improve data processes and increase business value of organizational data assets, freeing workers from across the organization from repetitive and time consuming data processing tasks. This results in a more productive workforce, better compliance with regulations and better decisions. Similarly, it has also posed some challenges to both students and lecturers globally. Studies conducted by various researchers revealed that lecturers do not adequately embrace the acquisition and utilization of database technologies in the programme. This has resulted to inadequate skill acquisition and lack of knowledge or inability to utilize database digital technologies by the lecturers and students (Akhademe & Ojo, 2016.; Ido & Asuquo, 2014).

Desktop publishing (DTP) is the process of using computer and specific type of software to produce high-quality documents containing text and graphics formatted for publications. The software that supports desktop publishing has what you see is what you get (WYSIWYG) graphical user interface (GUI) to make the set-up for publishing as easy as possible (Williams, 2016). Desktop publishing is helpful as an independent publishing option and can be used to produce information on a variety of topics (Ademiluyi & Emode, 2019). The ultimate goal of desktop publishing is to deliver a document that looks as if it were originally created in the target language. It is also the method that enhances visual communication, streamlines the process of disseminating information of all kinds and ensures information reach destination in a timely manner.

*Dave (2014) observes that before the invention of desktop publishing software, the tasks involved in desktop publishing were done manually by people who specialized in graphic design, typesetting, and prepress tasks. Recently, only professional graphic designers used desktop publishing software. There was also consumer-level desktop publishing software and an explosion of people who did desktop publishing for fun and profit, with or without a background in traditional design. Today, desktop publishing is still a career choice for some, but it is also increasingly a required skill for a wide range of jobs and careers.*

Desktop publishing is a technology skill used for creating publications. Desktop publishing involves using the computer to create visual displays of ideas and information by combining images and text to produce an attractive layout and design to effectively communicate a message (Pratt, 2014). Students build desktop publishing skills by creating publications for a target audience such as greeting cards, posters, brochures, and newsletters among others. With desktop publishing, many students will automatically be able to make effective designs and their work will look fantastic. However, acquisition of desktop publishing skill may increase productivity, minimizes production cost, enhances the appearance of documents, improves the level of creativity, reduces the time taken for printing and produces customized documents. According to Agboola and Ademiluyi (2011), desktop publishing is one of the skills needed by OTM students to excel in the digital world. The authors describe DTP skills as indispensable to high level performance in office management tasks. Heinz (2020) also described DTP as indispensable to superior secretarial performance in the digital world. Some of the popular desktop publishing software includes: Adobe InDesign, Adobe FrameMaker, [Microsoft Publisher](#), QuarkXPress Istudio Publisher, Corel Ventura, Infinity Publisher among others. Therefore, desktop publishing digital skills required in the contemporary world of



work and business include: ability to arrange objects, create designs, scale graphics, wrap text, format font, align text to suit purpose among others.

The research institutions are Federal Polytechnic, Ede and Osun State Polytechnic, Iree. The former is owned by the federal government, the latter by Osun State Government. Ownership was used as a moderating variable because it is generally assumed that federal institutions are better funded and the perspectives of the graduates may differ from those in state institutions. It is also generally believed that males are more technology savvy than females, although this assertion has not been supported by empirical studies hence the use of gender as a moderating variable.

### **Statement of the Problem**

It was observed that the advent of digital technologies has had a significant effect on all fields especially educational field. On this basis, there have been series of awareness and sensitization for students especially OTM students, to acquire skills in the use of digital technologies, in order to succeed in today's digital world. Generally studies revealed low acquisition of digital technology skills as well as low utilization of digital technology tools by OTM students in higher institutions of learning (Umoru, 2015). Despite the development brought by the use of digital technology and the huge investments in the purchase of these tools, the use of digital technologies seems to have little impact on the students especially OTM students. In addition, many of the students lack the knowledge and skills to utilize digital technology tools effectively and also students are not enthusiastic about the changes due to inadequate training to meet up with technological flux. Therefore, the concern of this study is to examine the digital technology skills required of OTM graduating students for effective performance in the contemporary world.

### **Research Questions**

The following research questions guided the study:

1. What are the database digital technology skills required of OTM graduating students for effective job performance in the contemporary world?
2. What are the desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world?

### **Hypotheses**

The following null hypotheses guided the study:

- H<sub>01</sub>: There is no significant difference between the mean ratings of male and female respondents on database digital technology skills required of OTM graduating students for effective job performance in the contemporary world.
- H<sub>02</sub>: There is no significant difference between the mean ratings of respondents in federal polytechnic and those in state polytechnic on desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world.



### Methods

Descriptive survey research design was adopted because the study sought the opinions of respondents on the digital technology skills required of OTM graduating students for effective job performance in the contemporary world. The study was conducted in the two public polytechnics in Osun State offering Office Technology and Management programme: Osun State Polytechnic, Iree and Federal Polytechnic, Ede. The population of the study comprised 175 HND II students 2021/2022 academic session of the two institutions. Osun State Polytechnic, Iree had 86 HND II OTM students while Federal Polytechnic, Ede had 89. Census survey was employed for the study. Two research questions and two null hypotheses guided the study. The instrument used for data collection was a 22-item structured questionnaire titled: Digital Technology Skills Required of OTM Students Questionnaire (DTSROSQ) generated from the research questions and reviewed related literature. The questionnaire was divided into two sections. Section A sought the demographic data of the respondents while section B consisted of questions designed to extract information needed on the research questions. The questionnaire was face-and-content validated by two experts in the Department of Business and Entrepreneurship Education, Kwara State University, Malete, Kwara State. The instrument was designed to elicit the ratings of respondents on a 4-point modified Likert-rating scale of: Highly Required (HR) - 4 points, Required (R) -3 points, Slightly Required (SR) -2 points and Not Required (NR) -1 point. A pilot study was conducted in Ibadan Polytechnic using 20 HND II OTM students. Cronbach Alpha method was used to establish the internal consistency of the items and the result of the reliability test yielded a coefficient of 0.85 which indicated that the instrument was reliable.

One hundred and seventy-five copies of the questionnaire were distributed by the researchers, out of which 152 were returned representing 87% return rate. Mean and standard deviation were used to analyze the data collected, while t-test was used to test the null hypotheses at 0.05 level of significance. The decision rule for the research question was that any item with a mean score of 2.50 and above was regarded as required (R) while below 2.50 was regarded as not required (NR). In the test of hypothesis, a null hypothesis was to be retained when the p-value value was equal to or greater than 0.05 level of significance and where the p-value was less than 0.05 level of significance, the null hypothesis was to be rejected.

### Results

#### Research Question 1

Research Question 1: What are the database digital technology skills required of OTM graduating students for effective job performance in the contemporary world?

**Table 1: Mean and standard deviation of responses on database digital technology skills**

S/ N	Items	$\bar{X}$	SD	Remark
1.	Ability to identify fields with unique values	3.04	0.73	Required
2.	Ability to harmonize and refine database design.	2.98	0.64	Required
3.	Ability to create database tables and record data.	3.16	0.87	Required
4.	Knowledge of file security and security techniques in managing database.	3.04	0.68	Required
5.	Ability to use Structured Query Language (SQL) effectively.	3.01	0.65	Required
6.	Ability to query different data attributes from a database.	3.14	0.71	Required
7.	Ability to extract database objects.	3.43	0.89	Required
8.	Ability to use web database programming effectively.	3.31	0.82	Required



9.	Knowledge of inserting, updating and deleting record in a database.	3.37	0.84	Required
10.	Knowledge of information systems and system structure.	2.95	0.63	Required
<b>Grand Mean</b>		<b>3.14</b>	<b>0.75</b>	<b>Required</b>

Source: Field Survey, 2022

Table 1 analysis shows that all the items were rated required. The standard deviation ranges from 0.63 to 0.89 which suggests that respondents were close to one another in their mean responses. The Grand mean was 3.14, which indicates that in the respondents' opinions, database digital technology skills are required for effective job performance in contemporary world.

### Research Question 2

Research Question 2: What are the desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world?

**Table 2: Mean and standard deviation of responses on desktop publishing digital technology skills**

S/N	Items	$\bar{X}$	SD	Remark
11.	Ability to arrange objects attractively on the page	3.25	0.92	Required
12.	Creating simple designs	3.18	0.87	Required
13.	Scale graphics to enhance balance	2.99	0.72	Required
14.	Ability to wrap text around graphics	3.02	0.74	Required
15.	Layout text to leave white space	2.87	0.71	Required
16.	Format font size and type to suit purpose	3.54	0.95	Highly Required
17.	Inserting pictures from various sources	3.35	0.89	Required
18.	Knowledge of how to create pages that are visually appealing, legible and easy to read	2.97	0.73	Required
19.	Moving and changing the size of displayed graphics	3.12	0.82	Required
20.	Using freehand drawing tools	3.08	0.79	Required
21.	Filling and shading using different colours	3.56	0.93	Highly Required
22.	Ability to design greeting cards, magazines and flyers	3.22	0.89	Required
<b>Grand Mean</b>		<b>3.18</b>	<b>0.83</b>	<b>Required</b>

Source: Field Survey, 2022

Table 2 shows that only two of the items were rated highly required while all the other items were rated required. The standard deviation ranges from 0.71 to 0.95 which suggests that respondents were close to one another in their mean responses. The Grand mean was 3.18, which indicates that in the respondents' opinions, desktop publishing digital technology skills are required for effective job performance in contemporary world.

H<sub>01</sub>: There is no significant difference between the mean ratings of male and female respondents on database digital technology skills required of OTM graduating students for effective job performance in the contemporary world.



**Table 3: t-test of the difference between the mean responses of male and female respondents on database digital technology skills**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Males	68	3.08	0.48	1.062	150	0.290	NS
Females	84	3.22	0.46				

Source: Field survey, 2022

$P > 0.05$

The data in Table 3 reveals that there was no significant difference between the mean responses of male and female respondents on database digital technology skills required of OTM graduating students for effective job performance in the contemporary world. Therefore, the null hypothesis was retained. This implies that male and female respondents did not differ significantly in their responses regarding database digital technology skills required of OTM graduating students for effective job performance in the contemporary world.

### Hypothesis 2

H<sub>02</sub>: There is no significant difference between the mean ratings of respondents in federal polytechnic and those in state polytechnic on desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world.

**Table 4: t-test of the difference between the mean responses of respondents in federal polytechnic and those in state polytechnic on desktop publishing digital technology skills**

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Federal	74	3.32	0.46	0.307	150	0.760	NS
State	78	3.35	0.41				

Source: Field survey, 2022

$P > 0.05$

Table 4 indicates that there was no significant difference between the mean responses of respondents in federal polytechnic and those in state polytechnic regarding desktop publishing skills required of OTM graduating students for effective job performance in the contemporary world. Therefore, the null hypothesis was retained. This implies that respondents in federal polytechnic and those in state polytechnic did not differ significantly in their responses regarding desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world.

### Discussion of Findings

The study examined digital technology skills required of OTM students for effective performance in contemporary world. Findings on Research Question revealed that database digital technology skills are required for effective job performance in today's global world. This is in agreement with the position of Ninlawan (2015) that the integration of database digital technology into Office Technology and Management curriculum has revitalized the programme by enabling students to store, maintain and retrieve database information conveniently, quickly and efficiently. The author further explained that database digital technologies in OTM programme have posed some challenges to lecturers and students, thus hindering them from adequately embracing the acquisition and utilization of these technologies. The finding also corroborates the view of Fwangmut





(2016) who stated that database digital technology facilitates the processes of defining, constructing, manipulating and sharing database among various users, thereby enabling them to create and maintain database effectively.

Results of Research Question 2 revealed that desktop publishing digital skills are essential for effective performance in today's global world. The finding is in line with the views expressed by Dave (2014) that desktop publishing digital skills are increasingly a required skill for a wide range of jobs and careers. It also supports Agboola and Ademiluyi (2011) that desktop publishing is among the skills needed by OTM students. The acquisition of these skills may enable students to create different publications for a target audience, thus enabling them to function optimally in contemporary world of work and business.

The results of Hypothesis One revealed no significant difference between the mean responses of male and female respondents regarding database digital technology skills required of OTM graduating students for effective job performance in the contemporary world. ( $t_{150} = 1.062$ ,  $P > 0.05$ ). Therefore, the null hypothesis was retained. This implies that male and female respondents did not differ significantly in their responses regarding database digital technology skills required of OTM graduating students for effective job performance in the contemporary world.

Also, the results in Hypothesis Two revealed no significant difference between the mean responses of respondents in federal polytechnic and those in state polytechnic regarding desktop publishing digital skills required of OTM graduating students for effective job performance in the contemporary world. ( $t_{150} = 0.307$ ,  $P > 0.05$ ). Therefore, the null hypothesis was retained. This implies that respondents in federal polytechnic and those in state polytechnic did not differ significantly in their responses regarding desktop publishing digital technology skills required of OTM graduating students for effective job performance in the contemporary world.

Generally, the research results affirm that database and desktop publishing digital skills are indispensable in today's technological world and acquisition of these skills are increasingly becoming necessary to function optimally and succeed in the contemporary globalized environment. The researchers are of the view that those skills should be embedded into OTM curriculum and be taught by qualified personnel to ensure that students are well equipped with the right knowledge and skills which would make them more competitive and successful in this era of globalization.

### **Conclusion**

The study concluded that digital technology skills especially database and desktop publishing skills are useful tools in today's contemporary world of work and business. It was also discovered that acquisition of these skills have improved the quality of students outcome especially in OTM programme. However, OTM students must match acquisition of relevant skills with intellectual and academic prowess to enable them gain and maintain competitive advantage over others.

This implies that OTM students must strive to acquire the relevant digital technology skills aimed at improving the quality of their knowledge, skills and attitude needed for survival in a digital technology-driven world.

### **Recommendations**

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

1. The National Universities Commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE) should ensure that OTM curriculum is regularly reviewed and updated with inputs from academia and industry to reflect database digital skills required for effective performance in the contemporary world.



2. Management of tertiary institutions should provide adequate digital technology equipment, infrastructure and create enabling environment that will enhance the acquisition of desktop publishing digital skills by OTM students.

### **References**

- Ademiluyi, L. F. & Emode, P. J. (2019). Computer application and Microsoft access competencies needed by polytechnic office technology and management students for computer aided instructions. *African Journal of Applied Research*, 5(1), 33-45.
- Ademiluyi, L. F. (2019). Adequacy and utilization of ICT resources for teaching business subjects in secondary schools. *African Journal of Teacher Education*, 3(8), 139-148.
- Agboola, J. O. & Ademiluyi, L. F. (2011). Communication competencies needed for successful entrepreneurship: The polytechnic implication. *Business Education Journal*, VIII(1), 155-168.
- Akhademe, A. E. & Ojo, E. O. (2016). New technologies in teaching and learning of office technology and management. *Nigerian Journal of Business Education*, 3(2), 89-98.
- Alberto, A. (2013). Improving learning in a database course using collaborative learning techniques. *International Journal of Engineering Education*, 2(4), 1-12.
- Atakpa, R. A. (2013). New technologies in business education used by secretaries in offices. *Business Education Book of Readings*, 3(1), 83-89.
- Bates, T. (2016). Understanding web 2.0 and its implications for e-learning. *Journal of Information Science*, 2(3), 86-95.
- Boyatzis, D. (2015). Beyond the frame of management competencies: Towards a contextually embedded framework of managerial competence in organizations. *Journal of European Industrial Training*, 5 (1), 26-33.
- Brandes, D., & Zobrist, L. (2017). Key competencies needed in the digital age. Accessed from <http://www.deloitte.com/content> on 25<sup>th</sup> August, 2022.
- Collins, H. (2014). *Collins English dictionary* 12<sup>th</sup> edition. Collins-Harper Publishers.
- Dave, J. (2014). Digital skills: Preparing young people for the future of work in the digital economy. Accessed from <https://www.org.decentjobsforyouth> on 18<sup>th</sup> August, 2022.
- Elmasri, R. & Navathe, S. B. (2011) *Fundamentals of database systems*. Wesley: Pearson Publication.
- Ezeani, N. S. & Ogundola, M. C. (2016). Business education programme in Nigeria: Past present and future in the 21<sup>st</sup> century. *Nigerian Journal of Business Education*, 3(1), 17-33.
- Fwangmut, N. M. (2016). *Teach yourself computer: A practical approach*. JOS: Cocin Printing Press.
- Heinz, N. (2020). Influence of Digital Skills on Students Socio-Economic Background. *Journal of Sociology of Education*, 6(2), 36-48.
- Hirsch, K. H. (2016). Digitization of industrial work: Development paths and prospects. *Journal of Labour Market Research*, 4(1), 1-14.
- Hycinth, I. O. (2013). Quality assurance and new technologies if office technology and management education. *Business Education Book of Readings*, 3(1), 61-67.
- Ido, C. & Asuquo, E. E. (2014). New technologies in business education: A challenge to business subject teachers in secondary schools in Akwa Ibom State. *Nigerian Journal of Business Education*, 2(1), 20-28.
- International Telecommunication Union (2020). *Digital skills insights*. Geneva: ITU Publication.
- Kalleberg, A. L., & Dunn, M. (2016). Good and bad jobs in the gig economy. Accessed from <http://www.org.content> on 23<sup>rd</sup> August, 2022.
- Karen, V. (2021). Digital Technology in the Global World. *Journal of Digital Learning in Education*, 2(1), 76-88.



- Lyashenko, M. S. (2016). Implementation of web-based technologies into teaching and learning practices in universities. *International Journal of Information and Education Technology*, 6(3), 243-249.
- Marie, A., & Kaur, P. (2020). Digitizing the teaching process to best meet the needs of generation: A study in understanding the importance of digitizing education to match generation needs. *International Journal of Scientific and Technology Research*, 9(1), 321–332.
- Morrison, U. I., Ekwue, K. C. & Crossdale-ovwido, J. (2014). Curbing the challenges in new technologies in business education through mentoring. *Nigerian Journal of Business Education*, 2(1), 39-51.
- Nedum-ogbede, P. O. (2016). New technologies in business education: Challenges and way forward. *Nigerian Journal of Business Education*, 3(2), 99-106.
- Ninlawan, G. (2015). Factors affecting teachers professional development in teaching innovation and educational technology in the 21<sup>st</sup> century. *Journal of Social and Behavioural Sciences*, 1(7), 32-39.
- Ojohwoh, R. (2014). Emerging challenges in the use of new technologies in implementing office technology and management programme in polytechnics. *Nigerian Journal of Business Education*, 1 (3), 333-341.
- Olayanju, U. T. (2016). The challenges of new technologies on secretarial profession. *Nigerian Journal of Business Education* 3(2), 73-80.
- Olise, J. M. (2014). New technologies used by business education in producing Nigerian office workers. *Nigerian Journal of Business Education*, 1(3), 249-258.
- Pratt, D. D. (2014). Effective integration of information communication technology in blended learning programmes. *International Journal of Learning*, 2(2), 89-103.
- Sharma, M. (2017). Teacher in a digital era. *Journal of Global Computer Science and Technology*, 2(1), 58-71.
- Umoru, T. A. (2015). Challenges and opportunities of utilization of social media by business education students in Nigerian universities. *International Journal of Educational and Pedagogical Sciences*, 9(11), 369-378.
- Williams, R. (2016). *Advances in Computer Graphics III* Accessed from <https://www.org.britannica.com> desktop-publishing on 20<sup>th</sup> July, 2022.
- World Bank Group (2020). Digital dividends: World development report. Washington, DC: World Bank.