

## Digital Based Learning and the Sustainability of Office Technology and Management Education (OTM) among Tertiary Institutions Lecturers in Bayelsa State

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### **Abstract**

*The study examined Digital Based Learning and the Sustainability of Office Technology and Management Education (OTM) among Tertiary Institutions Lecturers in Bayelsa State. Two research questions and two null hypotheses guided the study. The study adopted descriptive survey research design. The population of this study consisted of 19 OTM lecturers from Niger Delta University, Amassoma and Federal University of Outueke, Bayelsa State. There was no sampling since the population is manageable and accessible to the researchers. A self-developed questionnaire titled "Digital Based Learning and the Sustainability of Office Technology and Management Education (DBLSOTME). With 12-item self-developed questionnaire face validated by three experts. The reliability of the instrument was established using pilot-testing approach and Cronbach Alpha calculation yielded an overall coefficient's value of .94 obtained. The mean and standard deviation were used to analyze the responses to the items in the questionnaire, while an independent t-test was used to test the hypotheses at the 0.05 level of significance. The decision level was based on a 2.50 cut-off point. Findings of the study showed that OTM lecturers in tertiary institutions in Bayelsa State do not adopted digital learning tools for the Sustainability of Office Technology and Management Education and OTM lecturers do not utilized digital learning tools for the sustainability of Office Technology and Management Education Based on the findings of the study, the researchers conclude that OTM lecturers do not adopt digital learning tools for the sustainability of OTM education and OTM lecturers was did not utilize digital learning tools for the sustainability of OTM education in tertiary institutions in Bayelsa State. It was recommended among others that; NUC should make regular digital technology training programs compulsory for all tertiary institutions in Nigeria.*

**Key Words:** Digital, Tool, Learning, Tools, Adaptability, And Sustainability

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## Introduction

Innovation is the only constant in daily life, and digital technology has enabled quick alterations in all parts of living. Significant societal advancements in the 21st century have resulted from the introduction of digital technology and talent in fields such as banking, healthcare, engineering, and education. Office Technology and Management (OTM) education prepares new students to adapt to the changing nature of the workplace. OTM education is a sort of business education program that teaches future secretaries and office managers the knowledge and skills required for effective performance in modern enterprises. Onojaife (2020) characterized OTM education as a highly successful educational approach that promotes mobility and personal growth. OTM gives students real-world skills for working in office-related vocations or launching their own businesses. The National Board for Technical Education (NBTE) (2014) identified four primary goals of OTM education: exposing graduates to working conditions so that they have the opportunity to put their expertise into practice; developing a job-related interest in learners; and providing learners with the understanding, abilities, and specific skills required to effectively presume positions as management and administrative assistants in various industries. The OTM program needs to be repositioned to align with digital surroundings in order to achieve the goals it sets in today's digital world.

The above-mentioned new situations have enhanced the necessity for OTM education in Nigeria to reconsider the skills supplied to students. According to Akeke, Atah, Undie, Ajuluchukwu, Ikpi, Kolo, Eleng, and Ben (2023), Nigerian higher education institutions must adapt to changing electronic technology in order to satisfy the needs of the 21st century classroom. According to Nwaosa, Ugbebor, and Alabi (2014), integrating digital-based learning in business education has the potency to equip graduates for greatness in the workplace of the 21st century. In agreement with the above statement, Atah, Akeke, Ajuluchukwu, Aderibigbe, Wonah, Udayi, Nwannunu, Olabisi, Anthony, Ititim, Godwin, Nnaji, Ben, and Ogbeche (2023) proposed the digitization of business school curricula to align with the shift toward ubiquitous online education. In conjunction with the aforementioned, the International Labor Organization, or ILO, (2021) stated that in developing countries such as Nigeria, higher education institutions should institutionalize digitalization in order to provide learners with digital skills and reap the benefits of digital-based learning. However, Nigeria's tertiary institutions have grown rapidly in order to fully realize the potential of this new trend in long-term education. To do this, Bessong, Nwosu, and Atah (2022). It was emphasized that there is an urgent need for the provision of digital-based learning aids in the teaching and learning of business curriculum content. According to the United Nations (2019), there are insufficient digital-based resources in training and educating learners in Nigerian higher institutions to improve graduates' digital capabilities to compete with others graduates' in the world of work.

In a similar vein, it appears that Nigerian higher education institutions have been unable to adopt and sustain their educational curriculum in order to adequately prepare undergraduates for employment in the digital era after graduation. To enhance skill development, OTM learning needed to incorporate digital instructional objectives and use innovative approaches. According to Efanga (2017), the use of digital-based learning in education could lead to the establishment and creation of current educational courses that fit the new skills needs of the digital world. The adaptability of digital-based learning enables OTM learning to sense and

respond to digital needs (Akpomi, 2021). OTM institutions of learning that are adaptable anticipate and embrace change, are curiosity-driven, and remain contemporary (Cleverism, 2019).

According to Agim, Atah, and Ochui (2022), using Digital Based Learning to offer OTM courses has the potential to spur innovation in the execution of programs. This calls for a shift from traditional teaching methods to digital learning that integrates technology into the learning experience. Integration of digital innovations could help OTM lecturers better prepare students by educating them new and novel abilities required to find work and succeed in today's labor market. Digital advances in OTM education include the World Wide the World Wide Web, software, audio and video recordings, telephone/video teleconference capabilities, laptop/desktop devices, interactive whiteboards, digital printing and scanning machinery, spacecraft, telnet, as well as webmail.

According to Onwubuya, Agbobo, Ushie, Eleng, Atah, Ingwe, and Kolo (2023), one of the most significant impediments in Nigeria's higher institutions is the need to upgrade the rigid and outmoded educational curriculum. The writers emphasized that the world is changing quickly, and many lecturers lack motivation and perform much below their potential in the adoption and use of digital-based technologies for teaching and learning in the 21st century classroom. According to the aforementioned statement, Nigerian higher education institutions are required to be prepared to venture far outside their comfortable environs and abandon tried-and-true traditional delivery approaches, and digital-based learning is vital at this time for educators as well as learners to embrace. According to Agim, Atah and Ochui (2022), digital-based learning, when integrated into OTM curricula, has the potential to improve the development of skills among business education graduates, making them relevant in the 21st century workplace. In line with the preceding opinion, Idike, Nyiam, and Atah (2022) stated that the acquisition of digital skills among business education graduates will provide them with chances while also increasing their maximum productivity in the modern-day workplace. Atah and Ukah (2021) argue that the lack of digital learning tools in some Nigerian higher education institutions shouldn't serve as a barrier to the adoption of digital-based learning. They emphasize that OTM lecturers should engage in synergy and collaboration with business educators compared to other universities to create and disseminate real-world assets that benefit others as well.

According to Atah, Akeke, Ushie, Nwannunu, Anthony, Olabisi, Nnaji, Udayi E. Wonah, Aderibigbe, Anthony, and Ajuluchukwu (2023), digital-based learning has transformed the job market and the skills and talents necessary by OTM graduates for competitive advantage worldwide. Digital Based Learning is placing a significant burden on OTM education to realign and retain its programs in order to adjust to Digital Based Learning. OTM education should continue to be viable in building learners' digital skills and addressing the Digital Based Learning needs of Nigerian students. Luckily, these goals cannot be met unless the programme is changed to reflect twenty-first-century needs. OTM lecturers in Nigerian higher institutions may be in a bad situation. There is not enough infrastructure, as well as ICT laboratories and technology, to deliver skill training. Furthermore, there is an overemphasis on outdated teaching approaches, while the majority of OTM instructors lack the digital skills required to render the curriculum malleable for revision. Based on the aforementioned scenario, the researchers believe it is vital to conduct a study on the adaption

of digital-based learning and the sustainability of office technology and management education (OTM) among tertiary institution lecturers in Bayelsa State.

### **Purpose of the Study**

The research objective was to ascertain the extent of adaptation of digital based learning and the sustainability of Office Technology and Management Education (OTM) among tertiary institutions lecturers in Bayelsa State. Specifically, the study sought to ascertain the extent:

1. Digital based learning tools adapted for the sustainability of OTM education among tertiary institutions lecturers in Bayelsa State
2. Digital based learning tool utilization for the sustain OTM education among tertiary institutions lecturers in Bayelsa State

### **Research Questions**

The following research questions guided the study;

1. To what extent are digital based learning tools adopted for the sustain OTM education among tertiary institutions lecturers in Bayelsa State?
2. To what extent does utilization of digital learning tools sustain OTM education among tertiary institutions lecturers in Bayelsa State?

### **Null Hypotheses**

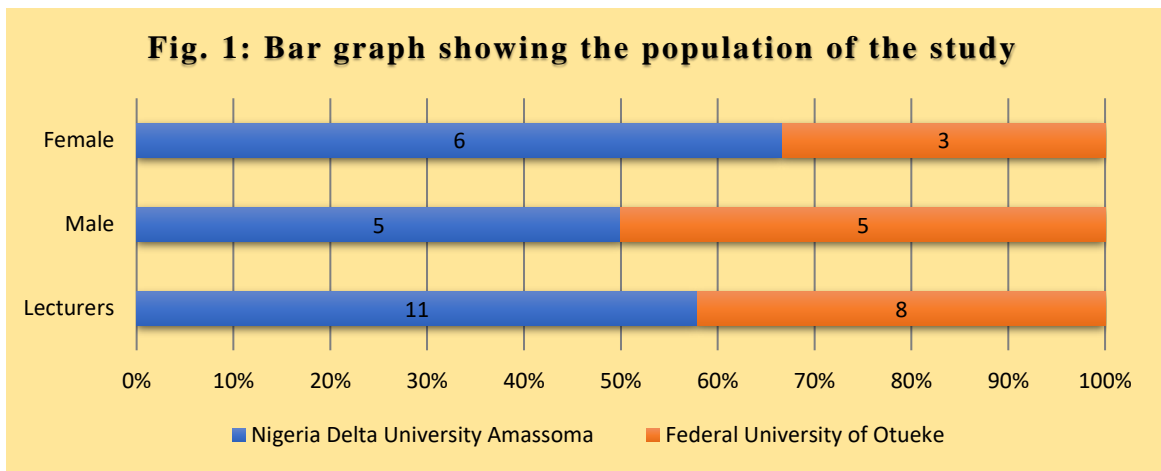
The following null hypotheses were tested at 0.05 level of significance;

1. There is no significant difference in the mean ratings of male and female OTM lecturers on the extent digital based learning tools adaptation for the sustainability of OTM education
2. There is no significant difference in the mean ratings of OTM lecturers with below 10 years of experience and those with 10 years of experience and above on the extent digital based learning tools utilization for the sustainability of OTM education

### **Research Methodology**

This study adopted descriptive survey research design. The study was carried out in Bayelsa State. The population of this study consisted of nineteen (19) Business Education (OTM lecturers) from Niger Delta University, Amassoma and Federal University of Outueke, Bayelsa State. There was no sampling since the population is manageable and accessible to the researchers. A self-developed questionnaire titled “Digital Based Learning and the Sustainability of Office Technology and Management Education (DBLSOTME). The questionnaire consisted of two sections; A and B. Section A contained one item on demographic information of the respondents such years of teaching experience while Section B contained 12 items in respect to the two research questions and structured on a four-point rating scale of Adapted (A) and Not Adapted (NA) for research question 1 and utilized (U) and Not Utilized (NU) for research question two respectively. The face and content validity of the instrument was determined using the opinions of two experts from Faculty of Vocational and Science Education and one expert from Measurement and Evaluation all from the University of Calabar, Nigeria. The reliability of the instrument was established using pilot-testing method and data collected were calculated with Cronbach Alpha which yielded coefficient values of .91 for cluster B1 to B2 respectively with an overall index of .95 obtained. The researcher with the help of two research assistants administered copies of the questionnaire to OTM lecturers in their institutions. On the spot distribution and collection of questionnaires was deployed and

those who did not fill theirs immediately were revisited on another agreed date. The 19 copies of questionnaire distributed, 19 (100%) of the copies were correctly filled and returned. The mean and standard deviation were used to analyze the responses to the items in the questionnaire, while an independent t-test was used to test the hypotheses at the 0.05 level of significance. The decision level was based on a 2.50 cut-off point. Any item with a cluster means of 2.50 and above indicates agreement with the adaptation and utilization of digital based learning tools for the sustainability of OTM and any item below 2.50 indicates disagreement. A null hypothesis was rejected where the p-value is less than 0.05 level of significance; otherwise, the null hypothesis was accepted. The population of the study is shown in figure 1, using a bar graph.



## Result of the Findings

### Research Question 1

To what extent does digital based learning tools adopt for the sustainability of OTM education among tertiary institutions lecturers in Bayelsa State?

**Table 1: Respondents' mean ratings and standard deviation on the extent digital based learning tools adopted for the sustain OTM education among tertiary institutions lecturers in Bayelsa State**

S/No	Item Statement	N	Mean	Std. Dev.	Decision
1	Google presentation	19	3.2105	0.71328	Adopted
2	Artificial Intelligence (AI) tools	19	1.5789	0.76853	Not Adopted
3	Google classroom	19	1.3684	0.76089	Not Adopted
4	Interactive whiteboards	19	1.8421	0.89834	Not Adopted
5	Machine Learning tools	19	1.1579	0.37463	Not Adopted
6	Virtual Reality (VR) tools	19	1.4737	0.77233	Not Adopted
	<b>Grand mean</b>	<b>19</b>	<b>1.7719</b>	<b>0.7146</b>	<b>Not Adopted</b>

Data in Table 1 shows that out of 6 digital based learning tools listed for adopted for the sustainable OTM education, items 1, was adopted by OTM lecturers with mean scores of

3.2105 while items 2, 3, 4, 5 and 6 were not adopted for the sustainability of OTM education in tertiary institutions in Bayelsa State. The standard deviations for all the items are within the same range showing that the respondents are not wide apart in their ratings.

### Research Question 2

To what extent does utilization of digital learning tools sustain OTM education among tertiary institutions lecturers in Bayelsa State?

**Table 2: Respondents' mean ratings and standard deviation on the utilization of digital learning tools sustain OTM education among tertiary institutions lecturers in Bayelsa State**

S/No	Item Statement	N	Mean	Std. Dev.	Decision
7	Google presentation	19	3.3684	0.68399	Utilized
8	Artificial Intelligence (AI) tools	19	1.2632	0.45241	Not Utilized
9	Google classroom	19	1.4211	0.60698	Not Utilized
10	Interactive whiteboards	19	1.4211	0.50726	Not Utilized
11	Machine Learning tools	19	1.3684	0.76089	Not Utilized
12	Virtual Reality (VR) tools	19	1.4211	0.69248	Not Utilized
	<b>Grand Mean</b>	<b>19</b>	<b>1.7105</b>	<b>0.61733</b>	<b>Not Utilized</b>

Data in Table 2 shows that items 7 with the mean scores of 3.3684 was utilized by OTM lecturers for the sustainability of OTM education, while the items 8, 9, 10, 11 and 12 were not utilized for the sustainability of OTM education in tertiary institutions in Bayelsa State. The standard deviations for all the items are within the same range showing that the respondents are not wide apart in their ratings.

### Hypothesis 1

There is no significant difference in the mean ratings of male and female OTM lecturers on the extent digital based learning tools adaptation for the sustainability of OTM education

**Table 3: Summary of t-test Analysis of significant difference in the mean ratings of male and female OTM lecturers on the extent digital based learning tools adaptation for the sustainability of OTM education**

Items	Category of Respondents	N	Mean	SD	t-cal	df	p-val.	Decision
Item 1	MALE LECTURERS	10	3.4000	.51640	1.238	17	.880	S
	FEMALE LECTURERS	9	3.0000	.86603				
Item 2	MALE LECTURERS	10	1.5000	.52705	-.462	17	.234	NS
	FEMALE LECTURERS	9	1.6667	1.00000				

Item 3	MALE LECTURERS	10	1.1000	.31623	-1.705	17	.017	NS
	FEMALE LECTURERS	9	1.6667	1.00000				
Item 4	MALE LECTURERS	10	1.9000	.31623	.288	17	.002	NS
	FEMALE LECTURERS	9	1.7778	1.30171				
Item 5	MALE LECTURERS	10	1.3000	.48305	1.858	17	.000	NS
	FEMALE LECTURERS	9	1.0000	0.00000				
Item 6	MALE LECTURERS	10	1.9000	.87560	3.075	17	.027	NS
	FEMALE LECTURERS	9	1.0000	0.00000				
	<b>MALE LECTURERS</b>	<b>10</b>	<b>13.5111</b>	<b>4.68413</b>	<b>0.715</b>	<b>17</b>	<b>0.193</b>	<b>NS</b>
	<b>FEMALE LECTURERS</b>	<b>9</b>	<b>10.1111</b>	<b>4.167734</b>				

Table 3 shows that the t-value of 0.715 with 17 degree of freedom has p-value of 0.193 which is greater than the alpha level of 0.05 ( $P\text{-value} = 0.193 > 0.05$ ). Therefore, the null hypothesis is accepted. This means that there is no significant difference in the mean ratings of male and female OTM lecturers on the extent digital based learning tools adaptation for the sustainability of OTM education

### Hypothesis 2

There is no significant difference in the mean ratings of OTM lecturers with below 10 years of experience and those with 10 years of experience and above on the extent digital based learning tools utilization for the sustainability of OTM education

**Table 4: Summary of t-test Analysis of significant difference in the mean ratings of OTM lecturers with below 10 years of experience and those with 10 years of experience and above on the extent digital based learning tools utilization for the sustainability of OTM education**

Items	Category of respondents	N	Mean	SD	t-cal	df	p-val.	decision
7	below 10 years of experience	7	1.8571	.89974	2.792	17	.001	NS
	10 years of experience and above	12	1.0833	.28868				
8	below 10 years of experience	7	1.0000	0.000	-2.115	17	.000	NS

	10 years of experience and above	12	1.4167	.51493				
9	below 10 years of experience	7	1.0000	0.000	-2.675	17	.000	NS
	10 years of experience and above	12	1.6667	.65134				
10	below 10 years of experience	7	1.0000	0.000	-3.539	17	.000	NS
	10 years of experience and above	12	1.6667	.49237				
11	below 10 years of experience	7	1.1429	.37796	-.986	17	.089	S
	10 years of experience and above	12	1.5000	.90453				
12	below 10 years of experience	7	1.5714	.97590	.713	17	.013	NS
	10 years of experience and above	12	1.3333	.49237				
	<b>below 10 years of experience</b>	<b>7</b>	<b>7.5714</b>	<b>2.2536</b>	<b>-0.97</b>	<b>17</b>	<b>.017</b>	<b>NS</b>
	<b>10 years of experience and above</b>	<b>12</b>	<b>8.6667</b>	<b>3.3442</b>				

The result in Table 4 shows that the t-value of -0.97 with 17 degree of freedom has p-value of .017 which is greater than the alpha level of 0.05 (P-value = .017 > 0.05). Therefore, the null hypothesis is accepted. This means that there is no significant difference in the mean ratings of OTM lecturers with below 10 years of experience and those with 10 years of experience and above on the extent digital based learning tools utilization for the sustainability of OTM education.

## Discussion of Findings

Findings of the study revealed that digital based learning tools were not adopted for the sustainability of OTM education among tertiary institutions lecturers in Bayelsa State. This finding is in line with Bessong, Nwosu, & Atah (2022) who findings show the absent of the availability and adoption of digital technologies in teaching and learning of business education content in Nigeria universities. The implication this, could be the reason why many graduates of OTM programme lack the digital skills to fit into digital workplaces and the effect of this, is lack of job employment among business education graduates. However, the study of Onwubuya, Agbobo, Ushie, Eleng, Atah, Ingwe, Kolo, (2023), attributed the non adaptation of digital learning to inadequate ICT infrastructures. The findings equally should that, even though, the world is shifting rapidly and a lot of lecturers still lack the potency to adopt and the utilization of digital based tools for teaching and learning in the 21<sup>st</sup> century classroom. According to Istance's (2023) findings, OTM lecturers lack digital learning competencies and have a negative attitude towards adapting to global learning standards. However, the hypothesis investigation found no significant difference in the mean assessments



of male and female OTM lecturers about the level of digital-based learning tool adaption for the long-term sustainability of OTM training. This could be since both male and female OTM instructors are under pressure to adapt and implement digital-based learning in order to satisfy the demands of the 21st century classroom setting. According to Efanga (2017), the adaptation of digital-based learning for school purposes could include constructing and developing current educational courses to fit the modern skills needs of the digital world.

Findings of the study second research question revealed that, OTM lecturers were not utilized digital learning tools for the sustainability of OTM education in tertiary institutions in Bayelsa State. The findings are consistent with Agim, Atah, and Ochui (2022), who said that tertiary institution lecturers do not use digital learning tools due to the limited availability of digital learning resources. Nevertheless, Akpomi et al., (2021) suggested that the poor adoption of digital learning resources is due to OTM lecturers' failure to adapt to new techniques of teaching and learning in the twenty-first century. Perhaps the versatility of digital-based learning enables OTM to identify and respond to digital requirements. OTM instructors must prepare for and embrace change when it comes to adopting digital learning and incorporating tools into their teaching and learning procedures. This could be why Cleverism (2019) believes that the adaptability and use of digital learning-based can be acquired by increasing flexibility, using creative teaching approaches, and merging digital technology into OTM delivery. The hypothesis revealed that there is no significant difference in the mean evaluations of OTM lecturers with less than 10 years of experience and those with 10 years of experience or more on the level of digital-based learning tool use for the sustainability of OTM training.

## **Conclusion**

Based on the study's findings, the researcher realizes that OTM lecturers were unwilling to utilize digital learning tools for the sustainability of OTM education, and OTM lecturers did not use digital learning tools for the sustainability of OTM education at Bayelsa State's tertiary institutions. It is possible that OTM lecturers lack 21st century expertise in the use of digital learning tools in the 21st century classroom setting.

## **Recommendations**

Based on the results of the study, the researchers make the following recommendations:

1. Federal governments should supply business education Departments with more new digital technology to ensure effective programme implementation.
2. The National University Commission (NUC) should make regular digital technology training programs mandatory for all business education lecturers in Nigeria.

## REFERENCES

- Agim, V. U.; Atah, C. A. & Ochui, M. O. (2022). Influence of e-mail and youtube platform utilization on academic performance of business education students in University of Cross River State: *Academic Journal of Current Research*. 9, (2), 72-76. Retrieved from <https://cirdjournal.com/index.php/ajcr/issue/view/167>
- Akeke, M.N.G., Atah, C.A., Undie, S.P., Ajuluchukwu, N. E., Ikpi, I. O., Kolo I., Eleng, E. & Ben, A. O. (2023). Electronic infrastructure and the sustainable development of Business Education Programmes in the 21st Century. (2023). *Academic Journal of Interdisciplinary Studies*, 12(5), 321. <https://doi.org/10.36941/ajis-2023-0147>
- Akpomi, M. E., Ben-George, I. & Wolugbom, K. R. (2021). Adaptability to evolving office technology amongst office management and technology graduates of Rivers State Universities. *Nigerian Journal of Business Education (NIGJBED)*, 8(2), 175- 186.
- Atah, C. A. & Ukah, T. A. (2021). Synergy and collaboration among business educators in Universities in Cross River State, Nigeria. *International Journal of Education and Evaluation* Vol 7 (3) 149-159
- Atah, C. A., Akeke, N.G. M. Ushie, G. B., Nwannunu, B. I., Anthony, G., Olabisi, B. C. Nnaji, E. S., Udayi E. A. A. O. Wonah, F. A., Aderibigbe, S. A., Anthony, O. B. & Ajuluchukwu, E. N. (2023). Analysis of E-Learning platform utilization and business education curriculum content delivery in River State Universities (RSU), Nigeria. *Journal of Innovation*, 74(5) 1476-1491 <https://journal-innovations.com/>
- Atah, C. A.; Bessong, E. B. & Ititim, D. U. (2022). Influence of students' self-esteem and students' locus of control and acquisition of employability skills among Business Education students in Federal Universities South-South Geopolitical Zone of Nigeria. *Academic Journal of Current*, 9 (8), 1-11 <https://cirdjournal.com/index.php/ajcr/article/view/799>
- Atah, C.A., Akeke, M.N.G, Ajuluchukwu, E. N. Aderibigbe, S. A., Wonah, F. A., Udayi, E.A.O. Nwannunu, B., Olabisi, B.C., Anthony, G.B., Ititim, D.U., Godwin B. U., Nnaji, E. S., Ben, A. O. & Ogbeche M. M. (2023). Digitalization of business education curriculum for the 21st Century for global relevance in Nigeria, *Journal of Innovation*. 74 (5) 1457-1466 <https://journal-innovations.com/>
- Bessong, E. B., Nwosu, B. & Atah, C. A. (2022). Extents of availability and utilization of microsoft team technologies in teaching and learning of business education: *British International Journal of Education and Social Sciences*, 9, (10) 101-111 <https://cirdjournal.com/index.php/bijess/article/view/955>
- Cleverism, (2019). Adaptability skills. Retrieved from <https://www.cleverism.com/skills-andtools/adaptability-skills/>, April 7th, 2020.
- Efanga, S. I. (2017). Repositioning education planning in Nigeria in the 21<sup>st</sup> century. *Global Academic Group*, 3(5), 4-10.

- Idike, I. M.; Nyiam, P. A. & Atah, C. A. (2022). Graduates' e-competencies required for maximum productivity in the 21st century office: *International Journal of Economics and Business Management (IJEBM)* 8(5) 49-55
- International Labour Organization (2021). Digitalization of national TVET and skills systems: Harnessing technology to support LLL. An enquiry and action framework. [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---emp\\_ent/documents/publication/wcms\\_826682.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_826682.pdf)
- Istance, D. (2023). Approaches to pedagogical innovation and why they matter. *Education Plus Development*. <https://www.education-plus-development/2019/01/23/approaches-to-pedagogical-innovation-and-why-they-matter/>
- Nwaosa, I. P.; Ugbebor, E.I.; & Alabi, E.B. (2014). Improving the teaching and learning of office technology and management (OTM) in Nigeria polytechnics
- Oguejiofor, C. S. (2020). Integrating e-commerce in business education curriculum for global competitiveness. *Nigeria journal of business education*. 7(1), 27-32.
- Onwubuya, U. N., Agbobo, R. A., Ushie, P. U., Eleng, S.N., Atah, C.A., Ingwe. M. O., Kolo, I. (2023). Business educators' perceptions of the barriers associated with business education curriculum implementation in Nigeria. *Journal of innovation* 75 (2) 153-162  
<https://journal-innovations.com/current-issue>
- United Nations (2019). The digital economy for structural change and equality. <http://www.cepal.org/socinfo>.