International Journal of Economics, Environmental Development and Society, 2025, 6(1), 26-37.



RESTRUCTURING SECONDARY EDUCATION CURRICULUM THROUGH DIGITALIZATION FOR SUSTAINABLE DEVELOPMENT IN RIVERS STATE, NIGERIA

Chinyere Catherine UKALA Department of Educational Management Faculty of Education University of Port Harcourt, Nigeria. <u>kateukala@gmail.com</u>

Franca Ginikachi ADIEME Department of Educational Management Faculty of Education University of Port Harcourt, Nigeria. <u>frankiegee24k@yahoo.com</u>

ABSTRACT

This study examined "Restructuring Nigerian Secondary Education Curriculum through Digitalization for Sustainable Development in Rivers State, Nigeria." Two research questions and two null hypotheses guided the study. The study adopted descriptive research design. The population comprised all the 7,418 principals and teaching staff in the 276 public senior secondary schools in Rivers State. Out of this population, 276 are principals (179 males and 97 females) while 7,142 are teachers (3,681 males and 3,461 females). Taro Yamane's formula was used to determine a minimum sample size of 380; hence, a. sample of 852 respondents (110 principals and 742 teaching staff), which represents 40% and 10% respectively, was drawn using both simple random sampling and proportionate stratified random sampling techniques. The instrument that was used for data collection was a self-designed 15-item questionnaire entitled: "Restructuring Secondary Education Curriculum through Digitalization for Sustainable Development Questionnaire (RSECDSDQ)." The questionnaire was structured after the four-point modified Likert rating scale, and duly validated by four experts. The reliability of the instrument was tested using the Cronbach's Alpha method to establish the internal consistency of the questionnaire items, and the coefficients of .78 and .73 were obtained for the two clusters respectively; hence, they were adjudged to be reliable for the field study. Mean and standard deviation were used to answer the research questions while z-test was used to test the null hypotheses at .05 level of significance. The findings of the study revealed, among others, that digital technologies and e-Learning software packages are integrated to low extent in the teaching-learning process in secondary schools in Rivers State. Based on the findings, it was recommended, among others, that educational planners should restructure the secondary education curriculum by digitalizing it so as to meet the needs and aspirations of the society for digitally competent and self-reliant students.

Keywords: Restructuring, Curriculum, Education, Digitalization, Technologies, Sustainable Development.

Reference to this paper should be made as follows:

Ukala, C. C., & Adieme, F. G. (2025). Restructuring secondary education curriculum through digitalization for sustainable development in Rivers State, Nigeria. *International Journal of Economics, Environmental Development and Society*, 6(1), 26-37.

Copyright © IJEEDS 2025 [ISSN: 2992-5614].

INTRODUCTION

Education, in today's knowledge-based economy is expected to be responsive to societal needs and aspirations for socioeconomic development, climate change, self-reliance of the citizens and above all, technological advancements. The impacts of digital technologies in this 21st century have increased the demand for the educational sector to prepare students who can thrive in a world where skills and knowledge they will need to excel are constantly changing. In an effort to meet these demands, Wolfenden et al. (2018), as cited in Butler et al. (2020) noted that many countries are restructuring or redesigning their national curricula so as to better prepare students now and in the future. In underscoring this, the Federal Republic of Nigeria (2014) stipulated in the National Policy on Education, that education is the most important instrument of change; hence, any fundamental change in the intellectual and social outlook of any society has to be preceded by an educational revolution. Obanya (2014) pointed out that students are no longer the people the Nigerian educational curriculum was designed to teach in this technology-based 21st century. In the same vein, Prensky (2001) noted that natives (students) are being taught by immigrants (teachers), who are neither speaking the digital language nor living within the same system of activity. Thus, there is need to restructure the curriculum for digitalized educational integration so as to enable students to be relevant in the interconnected-networked dynamic world.

Curriculum can be viewed as a plan for learning, which guides teachers to give students worthwhile experiences in the school. An effective and relevant school curriculum must respond to changes in the society at any given point in time. Lunenburg and Ornstein (2012) defined curriculum as a plan for action or a written document, which includes strategies for achieving desired goals. Offorma (2005, as cited in Shaibu et al. 2020) also defined curriculum as planned learning experiences offered to the learner in the school. Bloom (2006, as cited in Ofojebe, 2014) viewed curriculum as dealing with all the experiences a learner has to undergo under the guidance of the school. Okoro (2013) described curriculum as the means by which school organisations seek to translate the hopes of the society into a concrete reality. Butler et al. (2020) asserted that a quality curriculum must support learners in acquiring the knowledge, competences and dispositions needed to be successful in this digital era. According to Kurasha and Chabaya (2013), a curriculum is either reviewed or restructured in response to quality education and societal needs of a particular time. Thus, this technology-based era urgently yearns for educational digitalized integration in the secondary education curriculum in order to produce young school leavers, who are well-equipped for higher education as well as possessing relevant functional skills needed for self-reliance in the society.

Restructuring entails changing, altering, modifying or transforming the original state of something. Curriculum restructuring, therefore is changing or modifying the curriculum both in contents and delivery processes. Shaibu et al. (2020) viewed curriculum restructuring as rearranging instructional methods in a new and different way from what the practice has been so as to enhance classroom instructions for modern demands and best practices. Uwadiegwu (2013) opined that restructuring in the Nigerian context can be changing or replacing a system or organization with something new and different. Fasae and Adeosun (2021) described curriculum restructuring as replacing the existing programme contents with something that is entirely new. Oghiagbephan (2015) observed that the reason for increasing level of unemployment in Nigeria is because the curriculum was designed for job seekers rather than job creators. The findings of Fasae and Adeosun also discovered that the Nigerian curriculum does not balance theoretical

training with skill acquisition for self-reliance. In a related study, Akudolu (2002), as cited in Okoro (2013) noted that there is a mismatch between the education children receive in Nigerian schools and the life activities they are expected to engage in. In another dimension, Kpee et al. (2012) discovered in their study that the Nigerian university education curriculum is centred on producing white elephant collar curricula which have led to production of white elephant collar graduates whose qualifications are not defendable in the labour market. Thus, the educational system is being pressurised to prepare graduates with the right skills they need to be relevant and contribute productively in the workplace.

Secondary education is the education children receive after primary education and before tertiary education. Secondary education in Nigeria is aimed at preparing young school leavers for useful living in the society, as well as higher education for sustainable national development and global competitiveness. The Nigerian Government promulgated that secondary education shall offer diversified curriculum to cater for the differences in talents, opportunities and future roles (FRN, 2014). However, these goals cannot be attained without the teachers, who are the catalysts and implementers of the curriculum. Sabola (2017) noted that technology is rapidly changing, and educational stakeholders are expecting teachers to have the necessary skills to compete in a digital-age economy. Osuji and Taiwo (2019) opined that this technological age requires new teacher roles. Shaibu (2020) and Falasteen (2018) posited that restructuring curriculum using Information and Communication Technology (ICT) to advance classroom instructions will result in learner-centred activities. Digitalized education-driven curriculum offers teachers the chance to design engaging learning opportunities in the subjects they teach, which makes learning more interactive in the classroom (Pettersson, 2021). Hence, restructuring the secondary education curriculum in such a way that every subject must be taught with digital technologies will go a long way to imparting in students the necessary skills that are needed for today's competitive world.

Sustainable development is defined as the development pattern which encourages and addresses the plethora of problems of the present, and also makes adequate plans for meeting future generation's needs (Nwideeduh & Adieme, 2017). Emeka-Nwokeji (2015) noted that the concept of sustainable development, which integrates the three pillars of economic growth, social development and protection of the environment, includes a long-term perspective to ensure the well-being of future as well as present generations. This calls for an urgent restructuring of the secondary education curriculum to reflect the 21st century skills needed by learners to succeed now and in the future. Education is expected to provide children with competencies they will need at the present and in the future to be able to apply digital technologies and modern pedagogical methods (Ilomaki & Lakkala, 2018). Fasae and Adeosun (2021) suggested that there is need for educational planners to ensure that the general course contents of the curriculum are structured to provide learners with functional knowledge for productive life and for contributing to national development. Kpee et al. (2012) posited that the curriculum of our dream should develop students to be abreast of economic, social, political, cultural and technological needs of the world as a whole and Nigeria in particular. Thus, the ongoing United Nations' Sustainable Development Goal 4 aims at quality education; hence, the emergence of digital technologies is instrumental for achieving the goal on or before the time bound of 2030.

Digitalization in education simply entails the process of changing or converting from analogue to digital in the education system. Gurpreet Singh (2012) viewed digitalization in education as the process of using computers, mobile devices, the Internet, software applications, and other digital technologies to teach students in the classroom. Bates (2015, as cited in

Pettersson, 2021) considered digitalization to include all technological devices used to support teaching and learning. In another dimension, Witten and David (2003, as cited in Isah and Ojetunde, 2019) described digitalization as the process of converting printed materials to electronic formats where they can be stored, retrieved or manipulated by a computer. Thus, digitalization in education can be viewed as the use of hardware like: laptop and desktop computers, tablets, iPads, notepads, smart phones, among others, and the application of elearning software packages such as digital learning channels – Zoom, Google Classroom, Microsoft Teams, among others, to facilitate the teaching-learning process. However, Garry (2020) emphasised that digitalization is not only about learning with digital technologies but also about how the digital era impacts on all aspects of schooling. In the same vein, Butler et al. (2020) warned that focusing on one aspect of the system, such as classrooms without considering the education system as a whole is unlikely to bring about sustainable change in schools.

Digitalization process requires a systematic designing of digital platforms and digital educational resources that will facilitate teaching-learning process. Before digitalizing the education system, factors that influence digitalization and educational change in schools, including access to digital technologies, pedagogical digital competences of teachers, development of teaching-learning designs and organisational or institutional change must be put into consideration (Pettersson, 2021). In their study, Hakansson and Pettersson (2019) argued that digitalization that is not rooted in pedagogical objects and methods can fail to transform practice and enhance students' learning. Butler et al. (2020) posited that as part of the digital transformation of the education process, introduction and development of multimedia and computer-aided learning tools are prerequisites for creating digital educational environments such as flipped classrooms, blended learning classes, cloud technologies, tools for gamifications, augmented reality devices, among others. Isah and Ojetunde (2019) corroborated that digitalization of school activities require a wide range of modern devices such as scanners, which converts printed materials to a computer and hypertext markup languages (HTML) for conversion of materials to file formats. Thus, if adequate planning is not carried out, digitalization initiatives may not gain sustainability in schools.

In digitalizing the secondary education system, Ukala and Adieme (2021) pointed out that technology-supported learning application such as digital education platforms (DEPs), which are a collection of e-Learning software are extremely needed for online teaching and learning. Abdullahi and Tijani (2019) in their study described an ideal digitalized process, where Osun State Government, in 2013 distributed 30,000 e-Learning computer tablets to junior secondary school students. The device contained e-Book that comprises textbooks, study tips, integrated text zone which contains past questions and answers, solutions to standard examination questions, and virtual classroom where comprehensive school notes with illustrations and worked examples for the seventeen subjects that were offered in the schools were downloaded. Similarly, a study Pettersson (2021) conducted in upper secondary schools in Northern Sweden, vividly illustrated the digitalization concept, where teachers use their computers to browse the Internet for research for their lesson notes, exchange their books with digital learning materials and also present lessons using PowerPoint and projectors. Thus, digitalizing the education system will enhance technology-driven classrooms that the Federal Ministry of Education (2015) advocated for in this 21st century.

The emergence of new digital technologies and platforms has necessitated many countries to restructure their curricula in order to equip students with the basic digital skills that will enable them to be functional members of the society. Ming-Hung et al. (2017) noted that the

21st century education has witnessed an era of rapid revolution of computers, tablets, smart phones, the Internet and wireless communication technology, which have resulted in the emergence of various interactive multimedia networks and have made students active in technology-rich learning environments. Owan et al. (2021) posited that changing the traditional methods teachers adopt in teaching students, who are well-versed in technology usage nowadays, should be the ultimate goal of curriculum restructuring in this technological age. A study that was conducted by Garry (2020) revealed that in research and practice, digitalization processes are often times limited to implementation of digital technologies without pedagogical and organizational change. Having computers in the classrooms does not necessary mean using computers to teach. Obanya (2014) maintained that teachers require exposure to some technology-pedagogical knowledge and skills that will make them competent to transfer the kind of digital skills that today's graduates need to succeed, lead and contribute to nation building. Thus, this era of rapid technological change has resulted in the use of modern technological devices.

Quite a number of researchers have discovered various benefits that are accrued to adopting digitalization in the education system. Guedes and Milton (2018) conducted a study in secondary schools in Mozambique and discovered that software application has helped to engage students in the learning process by making them interact with contents, keep on task, elicit sustained and classroom interactions. Falasteen (2018) observed that digitization in education has transformed the traditional methods of teaching to more engaging experiences that have enabled students to attain the educational goals and objectives in Palestine. The findings of Pettersson (2021) in upper secondary schools in Sweden revealed that teachers described digitalization as a relief, and it has enhanced their workload by giving them better opportunities to teach and communicate with students. Abdullahi and Tijani (2019) applied digitalization in Early Childhood Education in Nigeria, and observed that it encourages democracy of knowledge where education becomes a collaborative and self-driven enterprise. Gurpreet Singh (2021) discovered that digitalizing the education process has enabled Indian students to improve on their academic performance because they record the class activities in their tablets, which they play and replay severally while studying at home. Manyengo (2021) discovered that gamification, one of the important trends in digitalization, which is used to facilitate blended learning in primary and secondary schools in Tanzania has improved education delivery and quality.

The need for national curricula to reflect the changes that are taking place in the digitalized world outside school has been on the front burner of the national discourse for quite some time now. With the labour markets increasingly demanding skills in the use of digital technologies, pressure is constantly mounted on the Nigerian schools, particularly, secondary education which is seen as a bridge between primary and higher education, to change the methodologies in the teaching and learning process. In order to adapt to the changing context, the Federal Republic of Nigeria introduced ICT Policy to support the adoption of digital technologies in the education system, as well as teach it as a subject. In underpinning this, the Rivers State Government built ICT laboratories and equipped them with desktop computers. In spite of the adoption of digital technologies in the education system, it appears teachers left teaching with technologies entirely for the ICT teachers, who because of time and space, end up teaching a particular class five times in a whole term.

This is worrisome because some public secondary schools in the rural areas that do not offer ICT subject due to insufficient ICT teachers may end up graduating the students without

exposing them to the basic digital skills needed in the world of work. More worrisome is the fact that the students, who are opportune to be taught by the ICT teachers are not engaged with hands-on tasks using computers, due to their teeming population and few available computers. These raise the question: how can digital technologies be integrated in the education system to provide both students in the rural and urban areas with uniform basic digital knowledge and skills they need to be self-reliant in Rivers State? This unanswered question underscored this study.

The aim of this study was to examine how restructuring of Nigerian secondary education curriculum through digitalization can enhance sustainable development in Rivers State, Nigeria. Specifically, the study sought to:

- Find out the extent deployments of digital technologies in Nigerian secondary education curriculum restructuring can enhance sustainable development in Rivers State; and
- Ascertain the extent applications of digital learning software in Nigerian secondary education curriculum restructuring can improve sustainable development in Rivers State.

Research Questions

The following research questions guided the study:

- To what extent do the deployments of digital technologies in Nigerian secondary education curriculum restructuring enhance sustainable development in Rivers State?
- To what extent do the applications of digital learning software in Nigerian secondary education curriculum restructuring improve sustainable development in Rivers State?

Hypotheses

The under listed hypotheses further guided the study:

- There is no significant difference between the mean ratings of principals and teachers on the extent digital technologies can be deployed in Nigerian secondary education curriculum restructuring for sustainable development in Rivers State.
- There is no significant difference between the mean ratings of principals and teachers on the extent of applications of digital learning software in Nigerian secondary education curriculum restructuring for sustainable development in Rivers State.

METHODS

This study adopted descriptive research design. The population comprised all the 7,418 principals and teaching staff in the 276 public senior secondary schools in Rivers State. Out of this population, 276 are principals (179 males and 97 females) while 7,142 are teachers (3,681 males and 3,461 females). Source: Rivers State Ministry of Education (2020). Taro Yamane's formula was used to determine a minimum sample size of 380; hence, a. sample of 852 respondents (110 principals and 742 teaching staff), which represents 40% and 10% respectively, was drawn using both simple random sampling and proportionate stratified random sampling techniques. The instrument that was used for data collection was a self-designed 15-item

questionnaire entitled: "Restructuring Secondary Education Curriculum through Digitalization for Sustainable Development Questionnaire (RSECDSDQ)." The questionnaire was structured after the four-point modified Likert rating scale of Very High Extent = 4 points, High Extent = 3 points, Moderate Extent = 2 points = and Low Extent = 1 point. It was duly validated by four experts: two from Department of Educational Technology and two from Department of Test and Measurement, Faculty of Education, University of Port Harcourt respectively. The reliability of the instrument was tested using the Cronbach's Alpha method to establish the internal consistency of the questionnaire items, and the coefficients of 0.78 and 0.73 were obtained for the two clusters respectively; hence, they were adjudged to be reliable for the field study. Mean and standard deviation were used to answer the research questions while z-test was used to test the null hypotheses at 0.05 level of significance.

RESULTS

Research Question One: To what extent do the deployments of digital technologies in Nigerian secondary education curriculum restructuring enhance sustainable development in Rivers State?

Table 1: Mean Scores and Standard Deviations on the Opinions of Principals and Teachers on the Extent of Deployments of Digital Technologies

S/N	The Extent of Deployments of Digital Technologies	Principals = 110		Teachers = 742			
		\overline{X}_{1}	SD ₁	\overline{X}_{2}	SD ₂	$\overline{X}_{1}\overline{X}_{2}$	Decision
1.	The integration of computers in making presentations on a topic to complement lessons has engaged students more actively in class activities.	2.63	0.70	2.57	0.27	2.60	High Extent
2.	The use of scanners to convert printed scarce resource materials to digital format such as eBooks, which teachers can access has improved instructional delivery.	2.80	0.69	2.77	0.27	2.79	High Extent
3.	The deployment of tablets as digital textbooks has enabled students to have access to all the recommended textbooks for every subject.	2.32	0.74	2.30	0.28	2.31	Low Extent
4.	The use of smart phones has enabled teachers to surf the Internet for more research on topics before preparing for the lesson notes.	2.98	0.67	2.97	0.26	2.98	High Extent
5.	The use of smart boards to display lesson notes, videos, pictures, etc during lessons has offered interactive experiences to students.	2.47	0.72	2.46	0.28	2.47	Low Extent
6.	The deployment of augmented reality (AR) devices as a teaching aid gives students real life experiences of the subject matter.	1.26	0.83	1.32	0.32	1.29	Very Low Extent
7.	The use of digital cameras to snap three-dimensional objects, which can be displayed on a screen during lessons has reduced the stress of drawing pictures on cardboards as teaching aids.	2.64	0.70	2.56	0.27	2.60	High Extent
8.	The use of digital projectors to display class activities has reduced teachers' workloads by making them talk less during class activities.	2.82	0.68	2.78	0.27	2.80	High Extent
	Aggregate Mean and SD	2.49	0.71	2.47	0.28	2.48	Low Extent

NB: Very High Extent = 3.00-4.00; High Extent = 2.50-2.99; Low Extent = 2.00-2.49; Very Low Extent = 0.00-1.99

Table 1 shows the mean responses of principals and teachers on the extent they deploy digital technologies in secondary schools in Rivers State. Their responses indicate that they deploy items: 1, 2, 4, 7 and 8 to high extent, items 3 and 5 to low extent and item 6 to very low extent. Their aggregate mean scores of 2.49 and 2.47 respectively, reveal that the integration of digital technologies in the teaching-learning process is to low extent.

Research Question Two: To what extent do the applications of digital learning software in Nigerian secondary education curriculum restructuring improve sustainable development in Rivers State?

Table 2: Mean Scores and Standard Deviations on the Opinions of Principals and Teachers on the Extent of Applications of Digital Learning Software

S/N	The Extent of Applications of Digital Learning Software	Principals = 110		Teachers = 742			
		\overline{X}_{1}	SD ₁	\overline{X}_{2}	SD ₂	$\overline{X}_{1}\overline{X}_{2}$	Decision
9.	The application of word processing software in typing lesson notes, which teachers can either display on smart boards or share to students via their emails has lessen the stress of copying notes on whiteboards.	2.80	0.69	2.75	0.27	2.78	High Extent
10.	The use of PowerPoint software in presenting lessons has offered better engaging class activities to students.	2.92	0.68	2.84	0.26	2.88	High Extent
11.	The use of spreadsheet software in computing students' results has enhanced teachers' productivity in class because it saves them the time they spend calculating the scores.	2.77	0.69	2.63	0.27	2.70	High Extent
12.	The deployment of database software in record keeping enhances data storage, easy retrieval of file documents, backups, among others.	3.07	0.66	3.04	0.26	3.06	Very High Extent
13.	Google Classroom application gives teachers the opportunity to adopt blended learning in class, which fosters collaborative learning among students.	2.39	0.73	2.27	0.28	2.33	Low Extent
14.	The application of Flipped Classroom as an instructional strategy that makes students prepare ahead of a lesson has improved students' engagement.	2.43	0.73	2.36	0.28	2.40	Low Extent
15.	The application of Cloud Servers enables teachers to post learning materials via online platform that they want students to access remotely.	2.40	0.72	2.35	0.28	2.38	Low Extent
	Aggregate Mean and SD	2.68	0.70	2.61	0.27	2.65	High extent

NB: Very High Extent = 3.00-4.00; High Extent = 2.50-2.99; Low Extent = 2.00-2.49; Very Low Extent = 0.00-1.99

Table 2 displays the mean responses of principals and teachers on the extent they apply digital learning software in secondary schools in Rivers State. Their responses indicate that they apply items: 9, 10 and 11 to high extent, item 12 to very high extent and items 13, 14 and 15 to low extent. Their aggregate mean scores of 2.68 and 2.61 respectively, show that the application of e-Learning software in the teaching-learning process is to high extent. These include: word

processing, spreadsheet, PowerPoint and database software. Conversely, the applications of Google Classroom for blended learning, Flipped Classrooms and Cloud Servers are to low extent.

Hypothesis One: There is no significant difference between the mean ratings of principals and teachers on the extent digital technologies can be deployed in Nigerian secondary education curriculum restructuring for sustainable development in Rivers State.

Table 3: z-test on the Difference between the Mean Ratings of Principals and Teachers on theExtent Digital Technologies are Deployed in Secondary Schools in Rivers State

Status	Ν	\overline{X}	SD	Df	z-cal	Critical Value	Remarks
Principals	110	2.49	0.71				
				850	0.29	±1.96	Not Significant
Teachers	742	2.47	0.28				
P < .05							

Table 3 reveals the z-test analysis on the difference between the mean ratings of principals and teachers on the extent digital technologies are deployed in secondary schools in Rivers State. The result shows that z-calculated value of 0.29 is less than the critical value of ± 1.96 ; therefore, the null hypothesis is accepted at .05 alpha level. Thus, there is no significant difference on the mean ratings of principals and teachers on the extent digital technologies are deployed in secondary schools in Rivers State.

Hypothesis Two: There is no significant difference between the mean ratings of principals and teachers on the extent of applications of digital learning software in Nigerian secondary education curriculum restructuring for sustainable development in Rivers State.

Table 4: z-test on the Difference between the Mean Ratings of Principals and Teachers on theExtent of Applications of Digital Learning Software in Secondary Schools in Rivers State

Status	Ν	\overline{X}	SD	Df	z-cal	Critical Value	Remarks
Principals	110	2.69	0.70				
				850	1.86	±1.96	Not Significant
Teachers	742	2.61	0.27				
P < .05							

Table 4 shows the z-test analysis on the difference between the mean ratings principals and teachers on the extent of applications of digital learning software in secondary schools in Rivers State. The result shows that z-calculated value of 1.86 is less than the critical value of ± 1.96 ; therefore, the null hypothesis is accepted at .05 alpha level. Thus, there is no significant difference on the mean ratings of principals and teachers on the extent of applications of digital learning software in secondary schools in Rivers State.

DISCUSSION

The finding of this study revealed that the integration of digital technologies in the teachinglearning process is to low extent in secondary schools in Rivers State. The implication of this study is that students are not being exposed and equipped with the basic digital skills needed in this digitalized world. This finding is in line with Hakansson and Pettersson (2019), who observed that digitalization that is not rooted in pedagogical competent can fail to transform practice and enhance students' learning. The finding is also in agreement with Garry (2020), who revealed that in research and practice, digitalization processes are often times limited to implementation of digital technologies without pedagogical and organizational change. In corroboration to the finding, Pettersson (2020) emphasized that before digitalizing the education system, factors that influence digitalization and educational change in schools, including access to digital technologies, pedagogical digital competences of teachers, development of teachinglearning designs and organisational or institutional change must be put into consideration. Thus, the fact that students can manipulate digital devices nowadays does not make them digitally competent. The integration of digital technologies in teaching will go a long way to making them meet societal expectations on them.

Another finding of this study revealed that the applications of digital learning software in the teaching-learning process are to some extent high in secondary schools in Rivers State. These include: word processing, spreadsheet, PowerPoint and database software. Conversely, the applications of Google Classroom for blended learning, Flipped Classrooms and Cloud Servers are to low extent. This implies that teachers are still stuck to only the traditional methods of teaching in this digitalized era. The finding agrees with Obanya (2014), who maintained that teachers require exposure to some technology-pedagogical knowledge and skills that will make them competent to transfer the kind of digital skills that today's graduates need to succeed, lead and contribute to nation building. The finding is also in consonance with Owan et al. (2021), who discovered that changing the traditional methods teachers adopt in teaching students, who are natives nowadays, should be the ultimate goal of curriculum restructuring in this technological age. Hence, if teachers do not adopt blended learning in the teaching and learning process, digitalization initiatives may not gain sustainability in schools.

CONCLUSION

From the findings of this study, it can be concluded that digital technologies and e-Learning software packages are integrated to low extent in the teaching-learning process in secondary schools in Rivers State. It is pertinent to note that digitalization will be sustainable only when teachers have changed their traditional methods of instructional delivery.

Recommendations

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

• The Rivers State Government should ensure that teachers have access to digital devices in the classroom, and also train them for pedagogical digital competences.

• Educational planners should restructure the secondary education curriculum by digitalizing it so as to meet the needs and aspirations of the society for digitally competent and self-reliant students.

REFERENCES

- Abdullahi, N. J. K., & Tijani, A. A. (2019). Digitization in education system and management of early childhood care education in Nigeria. *Southeast Asia Early Childhood Journal*, 8(2), 28-42.
- Butler, D., Twining, P., Fisser, P., Leahy, M., Shelton, C., Forget-Dubois, N., & Lacasse, M. (2020). Developing a quality curriculum in a technological era. *Educational Technology Research and Development*, 69, 2285-2308.
- Emeka-Nwokeji, N. A. (2015). Restructuring accountancy program of Nigerian universities for the changing environment: Strategies for sustainable development. *European Journal of Business, Economics and Accountancy, 3*(2), 38-57.
- Falasteen, N. (2018). The implementation of digitalization system in education in Palestine. International Journal for Information, 11(2), 1749-1754.
- Fasae, B. K. & Adeosun, O. A. (2021). Restructuring the business/accounting education curriculum for sustainable development: Instilling entrepreneurial consciousness into students in tertiary institutions. *International Journal of Humanities, Social Sciences and Education*, 8(9), 1-10.
- Federal Ministry of Education (2015). *National policy on special needs education in Nigeria*. NERDC.
- Federal Republic of Nigeria (2014). National policy on education (6th ed.). NERDC.
- Garry, F. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68, 2449-2472.
- Guedes, C., & Milton, A. Z. (2018). Use of digital technologies in secondary schools in the City of Nampula Mozambique. *The European Journal of Educational Research*, 1(1), 57-75.
- Gurpreet Singh, B. S. (2021). Traditional v. Digital learning: It's utility and efficiency An empirical insight. *International Journal of Creative Research Thoughts (IJCRT)*, 9(5), 275-278.
- Hakansson, L. M., & Pettersson, F. (2019). Digitalization and school leadership: The complexity of leading for digitalization in school. *International Journal of Information and Learning Technology*, 36(3), 218-230.
- Ilomaki, L., & Lakkala, M. (2018). Digital technology and practices for school improvement: Innovative digital school model. *Research and Practice in Technology Enhanced Learning*, 13 (25), 403-420.
- Isah, E., & Ojetunde, S. M. (2019). Digitalizing secondary school activities in Ibadan Metropolitan secondary schools, Oyo State, Nigeria. *Journal of Interprofessional Education and Practice*, 10(4), 76-90.
- Kpee, G. G., Oluwuo, S. O., & Baridam, D. M. (2012). Academic renewal and relevance in South-South Nigerian universities: Curriculum prospects and challenges. *Global Voice of Educators*, 1(1), 1-9.
- Kurasha, P., & Chabaya, A. R. (2013). Curriculum development and implementation: Factors contributing towards curriculum development in Zimbabwe higher education system. *European Social Sciences Research Journal*, 1(1), 55-65.

- Lunenburg, F. C., & Oenstein, A. C. (2012). *Educational administration (6th ed.)*. Wadsworth Cengage Learning.
- Manyengo, P. R. (2021). Digitalization in teaching and education in the United Republic of Tanzania. *International Journal of Education and Development*, 12(1), 107-128.
- Ming-Hung, L., Huang-Cheng, C., & Kuang-Sheng, L. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *EURASIA Journal of Mathematics, Science and Technology Education*, 13(7), 3553-3564.
- Nwideeduh, S. B., & Adieme, F. G. (2017). Unlocking lean management practices: A new approach to financing university education for sustainable development in Rivers State. *Journal of Educational Administration and Planning*, *18*(4), 12-27.
- Nwideeduh, S. B., & Adieme, F. G. (2021). Application of digital surveillance as a managerial tool for quality assurance in secondary schools in Rivers State, Nigeria. *The International Journal of Business and Management*, 9(3), 9-15.
- Obanya, P. (2014). Educationeering. HEBN Publishers.
- Ofojebe, W. N. (2014). Imperatives of curriculum development, management and improvement in the Nigerian educational system. In G. O. Unachukwu & P. N. Okorji (Eds.).
- Educational management: A skill building approach (pp. 434-466). Rex Charles & Patrick.
- Oghiagbephan, A. D. (2015). Restructuring educational goals for national and economic development in Nigeria. *IOSR Journal of Research & Method in Education*, 5(4), 8-14.
- Okoro, J. (2013). Ideal quality of university business education curriculum required for successful graduates' employment as perceived by lecturers. *Journal of Education and Practice*, 4(15), 114-118.
- Osuji, C. O. & Taiwo, A. O. (2019). Restructuring teacher education in Nigeria towards the challenges of the 21st century teaching and learning process. *World Journal of Innovative Research (WJIR)*, 6(3), 48-54.
- Owan, V. J., Agurokpon, D. C. & Udida, J. U. (2021). Curriculum restructuring and job creation among Nigerian graduates: The mediating role of emerging internet applications. *International Journal of Educational Administration, Planning & Research, 13*(2), 1-18.
- Pettersson, F. (2021). Understanding digitalization and educational change in school by means of activity theory and the levels of learning concept. *Education and Information Technologies*, 26, 187-204.
- Prensky, M. (2001). *Digital natives, digital immigrants.* <u>http://www.marcprensky.com/writing/Prensky%20%20Digital%20Natives,%20Digital%</u> <u>20mmigrants%20-%20Part1.pdf</u>
- Sabola, B. C. (2017). Managing the implementation of a school curriculum in Malawi: Challenges and policy implications. *Texila International Journal of Management*, 3(2), 137-158.
- Shaibu, J. S., Obajemu, G. O., & Abubakar, Y. I. (2020). Restructuring social studies curriculum through information communication technology for national sustainability. *African Journal of Educational Archives*, 6(1), 1-7.
- Ukala, C. C., & Adieme, F. G. (2022). Management of hidden costs of technology in post COVID-19 twenty-first century for teacher engagement in senior secondary schools in Rivers State, Nigeria. *Journal of the Nigerian Academy of Education*, 18(1), 339-356.
- Uwadiegwu, I. O. (2013). The challenging issues in restructuring Nigeria certificate in education (N.C.E.) vocational and technical education programmes. *Journal of Resourcefulness and Distinction*, 6(1), 1-8.