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UNLOCKING SMART EDUCATION IN FEDERAL UNIVERSITIES IN SOUTH-EAST FOR A PRODUCTIVE SOCIETY IN NIGERIA: AN IMPERATIVE FOR EDUCATIONAL MANAGERS

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ABSTRACT

Smart education has proven to be the transformative tool other nations have used to unlock productive society. However, empirical evidence on it in Nigerian universities remains underexplored. This study therefore, addressed this gap by investigating how smart education can be unlocked in federal universities in South-East for a productive society in Nigeria. A quantitative, cross-sectional descriptive research design was adopted. The population comprised 1,577 lecturers from the Faculties of Education in the five federal universities. A sample of 350 lecturers (135 males and 215 females), which represents 22% of the population was drawn using proportionate stratified random sampling technique. A self-developed 18-item questionnaire entitled: "Unlocking Smart Education for a Productive Society Questionnaire (USEPSQ)" was used for data collection, and it was duly validated by five experts. The internal consistency of the instrument was determined using Cronbach's Alpha method. Mean and standard deviation were used to answer the research questions while z-test was used in testing the null hypotheses at 0.05 level of significance. The findings of the study revealed, among others, that smart education is an integral part of learning in this digital era, and it is very vital in building a productive Nigerian society. It is therefore, concluded that the introduction of smart education in the university system will go a long way to moving Nigeria from a consumptive nation to a productive one. Based on the findings, it was recommended, among others, that educational planners should restructure the university curriculum by incorporating smart learning contents and pedagogy in order to meet the needs of Nigerian society.

Keywords: smart education, unlocking, productive society and digital learning.

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Introduction

A productive society refers to one that trains its workforce to use its available natural resources to manufacture goods, crops or commodities that can be sold to boost the nation's economy. Kien and Dung (2021) defined a productive society as one in which individuals are equipped with the prerequisite knowledge and skills required to contribute meaningfully to socioeconomic and technological development. Misenga (2023) described it as one that is constantly engaged in discussions about the issues that face it and comes up with ideas and solutions to solving the problems. Graham and Bivand (2018) viewed it as what people do to boost the economy and move it from a consumptive one to a productive one. Olga (2021) maintained that a productive society is dependent on productive workforce, who transforms it by applying their knowledge to solve problems, create value, adapt to changing circumstances and participate effectively in the world of work. The productivity of a society is therefore tied to the quality and relevance of the education provided to its citizens. Hence, a productive society is a product of the production of its workforce.

Productive societies invest heavily on education by mapping out sufficient funds that can take care of infrastructures, personnel, instructional materials, among others. P. Obi argued that the Nigerian society has been consumptive because it has failed to invest substantially in education (personal communication, June 30, 2024). In underscoring this assertion, Graham and Bivand (2018) conducted a study on skills to drive a productive society in the United Kingdom, and discovered that technological skill has made it possible for the workforce to seamlessly produce more goods and services that boost the economy. Ghavifekr et al. (2018) found that the Malaysian Government came out from its dwindling economy because it launched a smart school initiative in 1997 that trained digital workforce, who contributed positively to its economy. The Federal Republic of Nigeria also recognised the prominent role information and communication technology (ICT) plays in advancing knowledge and skills necessary for socioeconomic growth and development, and stipulated in its National Policy on Education that modern technologies shall be increasingly used and improved upon at all levels of the education system (Federal Republic of Nigeria [FRN], 2013). Hence, this makes it very necessary to introduce smart education in the Nigerian university education system so as to meet the needs of the digital age.

Education sector, in this digital age is expected to reflect the digital needs of the society by adapting to the new normal in order to develop individuals that will generate wealth and create jobs for national economic development. Lending credence to this assertion, the FRN (2013) mandated universities to intensify and diversify their programmes for the development of high-level manpower within the context of the needs of the nation. In corroboration, Jack and Adieme (2022) emphasised that in this rapidly evolving digital world, Nigerian universities need to be digitalised in order to develop digital-thinking workforce that

are considered as the most productive members of the society. Akuegwu and Uchendu (2014) asserted that any nation that understands the importance of a productive society will always invest heavily in university education so as to position it in a proper pedestal for producing vibrant skilled-manpower that can boost the economy. Universities play a strategic role in building a productive society as they are mandated to develop relevant manpower skills needed for national development (FRN, 2013). They are expected to foster creativity, critical thinking, problem-solving, digital competence, innovation, analytical thinking and the capacity to apply knowledge to real-life situations. Thus, since human capital has been proven to be an important asset of economic growth, universities must play a pivotal role in the realisation of a productive society.

The need for a productive society cannot be over emphasised as the realities of poverty and changing labour-market demands continue to affect the lives of the citizenries. Many Nigerian youths graduate with good degrees, but struggle to secure employment or create sustainable livelihoods (Nwideeduh & Adieme, 2023). Empirical evidence from recent studies conducted in Nigeria showed that there is a high rate of graduate unemployment, which not only related to lack of jobs but also lack of employable digital skills or competences that employers require (Oladokun & Olaleye, 2018; Suleiman, 2021; Pantami, 2023). Thus, when a nation's labour market loses confidence in the graduates that are produced, that nation obviously will remain a consumptive one because a chunk of the youths are idle. Employers of labour need workforce that is tech savvy, creative, critical thinkers, resourceful, resilient and problem solvers. The extent to which universities can achieve these expectations, however, depends on how they respond to the rapid technological change. Olga (2021) asserted that improving productivity in this digitalised world requires adopting smart technologies that align with university education.

The word, "Smart" in this context simply means anything that is technological. The world has become smart as virtually everything we use is now "smart." For instance, we have smart devices, smart leaders, smart learners, smart classrooms, smart phones, smart watches, smart boards, smart cars, smart televisions, among others. Smart education therefore is a novel concept which entails teaching with technologies and Internet resources. Olga (2021) defined smart education as an educational process which uses digital resources through wireless network to teach learners. Zhu et al. (2016) described smart education as intelligent systems and innovative pedagogical approaches in which the expectations of the technology-driven society are met. Demir (2021) viewed smart education as blended learning based on the use of interactive digital learning environment. Smart education can create learning environments in which students develop digital competencies and technology-enhanced learning experiences (Alnaqbi & Omar, 2022). According to United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2021), the

objectives of education in this digital age are to prepare future generations to deal with the rapid development of technologies; cope with the continuous access to vast amounts of new knowledge and information; foster critical thinking; creativity and collaboration skills to excel in digital economy. Hence, the goal of smart education is to provide learners with prerequisite problem-solving skills that will make them creators of jobs rather than job seekers in a digital evolving economy.

Studies have shown that smart education is an innovative trend that has gained wide attention in developed countries. Zhu et al. (2016) observed that smart education has been adopted in China, and it has proven to have answers to the numerous economic problems. Similarly, Hua (2012) noted that Singapore implemented the Intelligent (Smart) Nation since 2006, in which technology-supported education is an integral part of learning. Demir (2021) also reported that America has introduced a smart school programme which emphasises integrating technology into the classrooms and preparing students to participate in the 21st century economy. Choi and Lee (2012) pointed out that South Korea had the smart education project of which the major tasks are reforming the educational system and improving educational infrastructures. Alnaqbi and Omar (2022) reported that United Arab Emirates (UAE) invested in a smart learning program in 2012, which aims to shape new learning environment and culture in their national schools through the launch of smart classes. Kankaanranta and Makela (2014, as cited in Zhu et al. 2016) noted that Finland launched a smart education project, the on-going systemic learning solutions (SysTech) in 2011. The project aims at promoting 21st century learning with user-driven and motivational learning solutions.

Research has established that smart education is a pathway through which undergraduates are not only prepared for employment but also to create value and participate productively in society. Kim et al. (2013); Middleton (2015, as cited in Zhu et al. 2016) revealed in their various studies that smart education is learner-centred as the smart technologies or devices engage learners and increase their independence in more open, connected and collaborative ways that promote seamless learning. Merrill (2013) observed that smart education has the potential to increase engagement, individualise instruction, streamline administrative tasks and improve learning outcomes. In a related study, Zhu et al. (2016) discovered that smart education not only enables learners to access ubiquitous learning resources and interact with learning systems anytime and anywhere but also provides the necessary learning guidance, suggestions or supportive tools in the right form, at the right time and in the right place. Demir (2021) observed that smart education not only focuses on stimulating critical thinking and creativity but also considers the individual differences and learning styles among learners. The findings of Alnaqbi and Omar (2022) revealed that smart education helps to build learning experiences that incorporate both actual and virtual worlds. Hence, smart education is a transformative

strategy that makes a paradigm shift from the traditional methods of learning to a digital learning that is more encompassing.

Smart education equips students with digital skills that are needed to make them employable and job creators in this knowledge-driven economy. Zhu et al. (2016) posited that smart education represents a new approach to teaching-learning process that combines a physical classroom with many virtual learning environments to achieve positive learning outcomes. Makinde et al. (2024) revealed that learners in smart environments are exposed to digital problem-solving skills. Extant studies have established that smart education connects learning with the needs of society which result in wealth generations (Demir 2021; Graham & Bivand, 2018). Olga (2021) noted that in a smart learning environment, teachers cease to be the primary source of information as learners use the digital devices to access learning resources by themselves. Hoel and Mason (2018) observed that smart education has had a profound effect on the way teachers teach and how learners learn in Singapore. The findings of Obasi and Adieme (2023) revealed that technology enhanced student engagement as it can connect classroom learning to real-life situations through the use of interactive white boards.

There are numerous ways smart education can be adopted into the teaching-learning process in Nigerian Universities. Jack and Adieme (2022) posited that for smart education to be effectively adopted in the education system, universities must have a digital learning platform such as learning management system (LMS) where students can have access to relevant learning materials. Kummel et al. (2020) conducted a study on digital learning environments in Germany, and discovered that students have access to digital devices such as laptops, tablets, smart phones; Internet connection, e-Books, data projectors, interactive whiteboards or smart boards, among others. UNESCO (2021) emphasised the importance of governments and schools having a digital strategy that offers guidance on how to implement digital learning design and digital pedagogy. Olga (2021) maintained that for smart education to be effective, teachers must have the widest variety of multimedia and the ability to use different technologies to develop e-Books; design course contents; assess and evaluate students' tasks; conduct video conferencing and online classes, among others. In a related study, Hoel and Mason (2018) revealed that lecturers play significant roles in a smart education environment. They are responsible for selecting relevant courses, developing course contents, providing learning materials, designing learning activities and choosing appropriate technologies to facilitate learning. Thus, lecturers' roles have changed drastically in this 21st century. Their digital competency has become a criterion to remaining relevant in the digital knowledge economy.

Educational managers therefore have a major role in creating the conditions necessary for the adoption and effective utilisation of smart education. Adieme and Ukala (2025) asserted that educational managers, as change agents

are charged with the inundate tasks of adapting and adopting innovations that are geared towards meeting the demands of globalisation and societal expectations of schools. Similarly, Hu et al. (2021) emphasised that in a technology-driven classroom, school administrators are saddled with the responsibilities of resource mobilisation, technological infrastructure and institutional support. The Federal Ministry of Education (2015) stipulated that one of the guidelines for inclusive practices is ensuring that the classrooms of the 21st century are entirely technology-driven. In a related study, Rapanta et al. (2020) asserted that for an online learning to be effective, there must be an adequate availability of educational resources. Likewise, Mpungose (2020) noted that when majority of the teachers and learners lack the tools for online learning, it is practically impossible to embark on blended learning. In another study, Bernard (2020) postulated that teachers should be provided with relevant technological devices in order to solve the challenges of lack of relevant resources to adapt to the new normal. Maduakolam (2020) maintained that if teachers and other staff members do not understand how to use new technologies and integrate them into the classroom, it will lead to under-utilisation of the technological devices and a loss of return on investment in technology.

Smart education is an innovative reform that can transform the education process and produce critical thinking graduates that can move Nigeria's economy from a consumptive one to a productive one. It is pertinent to note that this smart age requires smart leadership in order to bring out the best from teachers. Hence, the Universities' Management has pivotal roles to play in harnessing the human resource to prudently utilise the educational resources in the teaching-learning process. Asikhia (2020) observed that Nigerian universities have more analogue lecturers than tech-savvy ones as most of them do not have access to the basic technological resources like laptops and digital mobile phones in this digital era. 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 underscoring this, Ukala and Adieme (2024) maintained there is need to restructure the university curriculum for digitalised educational integration so as to enable students to be relevant in the interconnected-networked dynamic world. Thus, universities are expected to provide supportive digital learning environments that will enable students to access knowledge and learning resources across different platforms and locations so as to be well-equipped in contributing to development of the society.

From the literature reviewed, smart education does not entirely phase out the traditional face-to-face method of learning; rather, it explores the possibilities of combining the traditional method of teaching with technologies to give students worthwhile learning experience. To support this, UNESCO (2021) asserted that there is a high demand for virtual modes (synchronous and asynchronous) of learning in higher education to support different learning styles. Zhu et al. (2016)

posited that with the introduction of smart education, students can learn asynchronously and also record or video lectures which they can replay during their personal study time. Hence, education as an activity, must be flexible and adaptive to change and innovations. Based on this premise, this study is conducted to respond to the needs of this digital age.

Statement of the Problem

We live in an evolving world driven by Fifth Industrial Revolution; as such, the education sector, like every other sector, is expected to evolve alongside the trend. As the world is increasingly being smart, interconnected, innovative and technology-driven, pressure is constantly mounted on the Nigerian higher education institutions, particularly, the universities, to adopt and integrate smart education into the teaching-learning process in order to equip learners with digital skills and knowledge needed for a productive society. It is a well-known fact that when a nation faces a problem, it runs to its education sector for a solution. One of the biggest challenges facing the Nigerian economy, which has remained a subject of national discourse, is low productivity. This is worrisome as it appears to have hindered our dear nation, Nigeria, from competing favourably in the global market. More worrisome is the fact that the country keeps borrowing money from developed countries and institutions such as World Bank, International Monetary Fund (IMF), among others without being able to either pay back the loans or service the debts. This "collect and consume" pattern of living has compelled concerned citizens to conclude that Nigeria has degenerated into a "feeding bottle" economy otherwise known as a consumptive nation.

Another aspect that is most worrisome is that a greater number of the human capital asset that is considered as the most productive members of the society are unemployed. Employers of labour have decried the unemployability of many Nigerian graduates because they lack the digital skills required to meet the demands of industries and the global economy. As technology keeps evolving and revolutionising the teaching-learning process, it becomes imperative for Nigerian universities, especially the public ones to adapt to and adopt the new normal – smart education. Smart education therefore is the key that unlocks a productive society by equipping the workforce, particularly youths, with the prerequisite digital skills to thrive and respond to the plethora of problems associated with a consumptive nation.

Aim and Objectives of the Study

This study examined how smart education can be adopted in federal universities in South-East for a productive society in Nigeria. Specifically, the objectives sought to:

1. determine the benefits of adopting smart education for a productive society in Nigeria; and
2. identify ways smart education can be adopted for a productive society in Nigeria.

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Research Questions

The following research questions guided the study:

1. What are the benefits of adopting smart education for a productive society in Nigeria?
2. In what ways can smart education be adopted for a productive society in Nigeria?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 alpha level:

Ho_1 There is no significant difference between the mean ratings of male and female lecturers on the benefits of adopting smart education for a productive society in Nigeria.

Ho_2 There is no significant difference between the mean ratings of male and female lecturers on the ways smart education can be adopted for a productive society in Nigeria.

Method

This study adopted a quantitative, cross-sectional descriptive research design. This design was suitable as it enabled the researcher to collect data from the respondents simultaneously without manipulating the variables. The population of the study comprised 1,577 lecturers from the Faculties of Education in the five federal universities in South-East Nigeria (South-East Academic Reports of Universities, 2023). The universities are: University of Nigeria, Nsukka, Enugu State; Nnamdi Azikiwe University, Awka, Anambra State; Michael Okpara University of Agriculture, Umudike, Abia State; Alex Ekwueme Federal University, Ndufu Alike-Ikwo, Ebonyi State and Alvan Ikoku Federal University of Education, Owerri, Imo State. Using simple random sampling technique, three universities (University of Nigeria, Nsukka, Nnamdi Azikiwe University, Awka and Alex Ekwueme Federal University, Ndufu Alike-Ikwo), were selected. Taro Yamane's formula was used to determine a minimum sample size of 319; hence, a sample of 350 lecturers (135 males and 215 females), which represents 22% of the population was drawn using proportionate stratified random sampling technique. The instrument that was used for data collection was a self-developed 18-item questionnaire entitled: "Unlocking Smart Education for a Productive Society Questionnaire (USEPSQ)." The questionnaire was structured on a four-point rating scale of Strongly Agree, Agree, Disagree and Strongly Disagree with weights of: 4, 3, 2 and 1 respectively.

The instrument was duly validated by five experts in Test and Measurement Department and Educational Technology Department of Faculty of Education, Federal University Oye-Ekiti. They examined the instrument for clarity, relevance, adequacy of content and appropriateness of the items in relation to the objectives of the study. The instrument was administered online through Google Forms. This approach facilitated access to the respondents across the sampled universities and enabled the researchers to collect the required data electronically. The internal consistency reliability coefficient of 0.83 for (USEPSQ) was computed using

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Cronbach's Alpha method. The subscales' reliability for benefits of smart education and ways smart education can be adopted are 0.86 and 0.79 respectively. These coefficients were considered acceptable because they exceeded the minimum acceptable reliability threshold of 0.70; hence, they were adjudged to be reliable for the field study. Mean and standard deviation were used to answer the research questions. Any mean score from 2.50 and above was agreed upon, and the mean below 2.50 was disagreed upon. z-test was used in testing the null hypotheses of no significant difference. The acceptance or rejection of the hypotheses was based on the critical value of z-test, which is ±1.96 at 0.05 level of significance.

Results

Table 1: Mean Scores and Standard Deviations on the Opinions of Male and Female Lecturers on the Benefits of Adopting Smart Education for a Productive Society in Nigeria

S/N	Benefits of Adopting Smart Education Include:	Male Lecturers			Female Lecturers		
		$\overline{X}_1$	SD_1	Decision	$\overline{X}_2$	SD_2	Decision
1.	Smart education prepares workforce to meet the challenges of the 21st century.	3.12	0.59	Agreed	3.10	0.47	Agreed
2.	It builds learning experiences that incorporate virtual world with real-life situations.	3.17	0.59	Agreed	3.13	0.47	Agreed
3.	It fosters critical thinking, creativity, collaborative learning, etc among students.	3.01	0.60	Agreed	3.04	0.48	Agreed
4.	It seamlessly meets students' different learning styles through individualising instruction.	3.09	0.60	Agreed	3.02	0.48	Agreed
5.	It combines a physical classroom with many virtual learning environments to achieve positive learning outcomes.	2.76	0.63	Agreed	2.85	0.49	Agreed
6.	It enables students to access ubiquitous learning resources.	3.07	0.60	Agreed	2.91	0.48	Agreed
7.	It reduces the cost of buying physical books as they can be easily accessed via online.	3.03	0.60	Agreed	3.10	0.47	Agreed
8.	It promotes learner-centred classroom where learners engage in activity-based tasks.	2.95	0.61	Agreed	2.86	0.49	Agreed
9.	It encourages students to learn at their convenient time anywhere they are.	2.81	0.62	Agreed	2.73	0.50	Agreed
10.	It develops digitally competent students that can thrive in building a productive society.	3.05	0.60	Agreed	2.73	0.50	Agreed
	Aggregate Mean/Standard Deviation	**3.01**	**0.60**		**2.97**	**0.48**	

Legend: mean below 2.50 =disagreed; mean above 2.50 = agreed

Data in Table 1 presents the mean responses of male and female lecturers on the benefits of adopting smart education for a productive society in Nigeria. Their responses indicate that they agreed that smart education is critical in building a productive society in Nigeria. This is

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evidenced in their aggregate mean scores of 3.01 and 2.97 respectively.

Table 2: Mean Scores and Standard Deviations on the Opinions of Male and Female Lecturers on Ways Smart Education can be Adopted for a Productive Society in Nigeria

S/N	Ways Smart Education can be Adopted Include:	Male Lecturers $\overline{X}_1$	SD₁	Decision	Female Lecturers $\overline{X}_2$	SD₂	Decision
11.	Restructuring the university curriculum contents to incorporate digital pedagogy.	3.13	0.59	Agreed	3.08	0.47	Agreed
12.	Having a learning management system (LMS) where students can have access to varieties of learning materials.	2.92	0.61	Agreed	2.98	0.48	Agreed
13.	Ensuring the availability of digital learning devices students can assess.	3.01	0.60	Agreed	2.80	0.49	Agreed
14.	Ensuring that lecturers are trained to be digital competent.	3.06	0.60	Agreed	3.09	0.47	Agreed
15.	Installing Internet of Things (IoT) enabled devices in the classrooms.	3.10	0.60	Agreed	3.04	0.48	Agreed
16.	Giving data palliatives to lecturers that can enable them to use their devices to surf the Internet for open education resources (OERs).	3.15	0.59	Agreed	3.07	0.47	Agreed
17.	Providing constant power supply by installing solar panels to enhance seamless learning.	3.11	0.59	Agreed	3.07	0.47	Agreed
18.	Designing hands-on projects that can develop students' critical thinking, analytical and problem-solving skills.	3.14	0.59	Agreed	3.17	0.47	Agreed
	Aggregate Mean/Standard Deviation	**3.08**	**0.60**		**3.05**	**0.48**	

Legend: mean below 2.50 =disagreed; mean above 2.50 = agreed

Table 2 shows the mean responses of male and female lecturers on ways smart education can be adopted for a productive society in Nigeria. Their responses indicate that they agreed that smart education can be adopted in the universities for a productive society in Nigeria. This is evidenced in their aggregate mean scores of 3.08 and 3.05 respectively.

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Table 3: Summary of z-test on the Difference between the Mean Ratings of Male and Female Lecturers on the Benefits of Adopting Smart Education for a Productive Society in Nigeria

Gender	N	$\overline{X}$	SD	df	z-cal	Critical Value	Remarks	Decision
Male Lecturers	135	3.01	0.60	348	0.65	±1.96	Ho_1 not significant	Failed to reject the null hypothesis
Female Lecturers	215	2.97	0.48					

P< 0.05

Table 3 reveals the z-test analysis on the difference between the mean ratings of male and female lecturers on the benefits of adopting smart education for a productive society in Nigeria. The result shows that z-calculated value of 0.65 is less than the critical value of ±1.96; therefore, the null hypothesis is accepted at 0.05 alpha level. Thus, there is no significant difference on the mean ratings of male and female lecturers on the benefits of adopting smart education for a productive society in Nigeria.

Table 4: Summary of z-test on the Difference between the Mean Ratings of Male and Female Lecturers on the Ways Smart Education can be Adopted for a Productive Society in Nigeria

Gender	N	$\overline{X}$	SD	df	z-cal	Critical Value	Remarks	Decision
Male Lecturers	135	3.08	0.60	348	0.49	±1.96	Ho_2 not significant	Failed to reject the null hypothesis
Female Lecturers	215	3.05	0.48					

P< 0.05

Table 4 shows the z-test analysis on the difference between the mean ratings of male and female lecturers on the ways smart education can be adopted for a productive society in Nigeria. The result shows that z-calculated value of 0.49 is less than the critical value of ±1.96; therefore, the null hypothesis is accepted at 0.05 alpha level. Thus, there is no significant difference on the mean ratings of male and female lecturers on the ways smart education can be adopted for a productive society in Nigeria.

Discussion

The finding of this study revealed that smart education, which is an integral part of learning in this digital era, is very critical in building a productive society in Nigeria. This implies that unlocking or introducing smart education in the university system of education will develop critical-thinking and problem-solving youths who can contribute in building a productive society. This finding agrees with Graham and Bivand (2018),

who conducted a study in the United Kingdom, and discovered that smart education has made it possible for the workforce to seamlessly produce more goods and services that boost the economy. It is also in line with Ghavifekr et al. (2018), who found that the Malaysian Government came out from its dwindling economy because it launched a smart school initiative that trained digital workforce, who contributed positively to its economy. It is also in collaboration with Demir (2021), who observed that the smart school programme America introduced has helped to prepare students to participate actively in the 21st century economy. It is also in consonance with Alnaqbi and Omar (2022); Choi and Lee (2012); Hua (2012); Zhu et al. (2016), who discovered in their various studies that the introduction of smart education contributed to a large extent on the developmental strides Asian countries are making.

Another finding of this study revealed that lecturers agreed that smart education can be adopted in the universities for a productive society in Nigeria. This result has implication for educational policies and educational managers as the university curriculum can be restructured to incorporate smart education and implemented effectively. The finding is in agreement with Jack and Adieme (2022); Kummel et al. (2020); Rapanta et al. (2020), who found in their various studies that smart education, can be effectively adopted in the university system by providing supportive digital learning environments and platforms such as learning management system (LMS). It is also in line with Asikhia (2020); Hoel and Mason (2018); Olga (2021); Mpungose (2020), who observed that lecturers' digital competency has become a criterion to remaining relevant in the digital knowledge economy. The finding also corroborates with Ukala and Adieme (2024), who maintained there is need to restructure the university curriculum for digitalised educational integration so as to enable students to be relevant in the interconnected-networked dynamic world. The result of the hypothesis agrees with Demir (2021); Graham and Bivand (2018); Makinde et al. (2024), who revealed that adopting smart education entails reforming the educational processes to meet the needs and demands of the knowledge-based society.

Conclusion

Based on the findings of this study, it is therefore concluded that the introduction of smart education in the university system will go a long way to moving Nigeria from a consumptive nation to a productive one. Thus, it is an indisputable fact that any country in this evolving technology-driven era, whose workforce are digitally incompetent will keep depending on other nations for its survival. Smart education therefore, is the key that will unlock productive society and development in Nigeria.

Recommendations

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

1. Educational planners should restructure the university

curriculum by incorporating smart learning contents and pedagogy in order to meet the needs of Nigerian society.

2. Federal Republic of Nigeria should transform the educational system by providing supportive digital learning environments that will enhance the effective implementation of smart education in the universities.

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