

Original Paper

Management of Innovative Education for the Achievement of Sustainable Development Goals (SDGs) in Universities in Delta State

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Abstract

The study examined how public universities in Delta State, Nigeria, managed innovative education to meet sustainable development goals. A descriptive survey design was chosen. The employees of Delta State's five public universities made up the study's population. Using stratified random selection procedures, a sample of 120 respondents from Federal Universities and 240 respondents from State Universities were chosen. Two research questions and two hypotheses were developed. The data was collected using an instrument called "Management of Innovative Education in Universities for Achievement of Sustainable Development Goals Questionnaire" (MEUASDGQ). Experts validated the instrument, and a Cronbach Alpha was used to calculate the reliability coefficient of 0.74. The Z-test statistics was employed to evaluate the hypotheses at 0.05 alpha level of significance, while the mean and standard deviation were utilized to address the study issues. The results showed, among others, that innovative education in universities is essential to meeting Nigeria's sustainable development goals and innovative education in universities can be managed by taking a more humanistic approach. The report suggested, among other things, that ICT centers be created in universities, faculty members receive frequent training via seminars and workshops, and that both digital and non-digital teaching techniques in learning should be adopted.

Keywords

innovative, education, sustainable, development, goals, universities, management

1. Introduction

The ability of a person or group of people to persuade and direct subordinates toward the accomplishment of the university's defined goals and objectives is known as university management. This calls for making wise and occasionally challenging decisions, developing and communicating a clear vision, setting realistic goals, and arming followers with the information and resources they need to meet those objectives (Chukwurah, 2011). Being an administrator at a university requires having sufficient knowledge of curriculum and instruction in addition to being able to advise staff members when they need it (Baholola, 2011). In order to engage students, staff members must conduct research on best practices and implement creative approaches. It also implies that university managers ought to have more time to interact with staff and get to know students.

At both community colleges and universities, university officials focus on preparing students for a range of professional opportunities. The administrators of the institution must ensure academic quality in order to accomplish these admirable goals (Ajayi & Haastrap, 2011). Academic excellence includes creative and innovative teaching and learning methods, developmental research, high-impact community initiatives, and the development of graduates' own independent economic abilities (Akpan, 2011). It also shows that both staff and students have acquired great moral discipline and scientific and technological competence.

Without a doubt, a university education is essential to the socioeconomic, political, environmental, and cultural development of a country. Empirical evidence and widespread consensus have demonstrated that rapid economic and social development cannot be ensured in a nation unless its citizens receive a good education and the necessary training (Ahmed, 2013). According to Oguzor (2011), the relevance, utility, and uniqueness of an educational system are directly correlated with a country's current state of national development. Universities should emphasize, exalt, and embody the fundamentally good human qualities and virtues—such as intellectual meritocracy, academic discipline, creativity, patriotism, academic excellence, self-reliance, and a strong sense of responsibility—and innovate in education to support sustainable development.

The 2030 Agenda for Sustainable Development, also referred to as the Sustainable Development Goals (SDGs) or “transforming our world,” is a meticulously crafted list of seventeen “Global Goals” that have been meticulously mapped out to cover 169 target areas with 244 indicators. These are broad objectives that address pressing global environmental, political, and socioeconomic issues. The Millennium Development Goals (MDGs) were superseded by the Sustainable Development Goals (SDGs). The MDGs were an international initiative to combat extreme poverty, hunger, and other diseases while also promoting gender equality, reducing child mortality, combating HIV/AIDS, malaria, and other diseases, and creating global partnerships for development (UNESCO, 2017). The agreement among developed, developing, and international agencies to work toward a world where development and poverty eradication would have the highest priority gave rise to the 21 targets that make up the

Millennium Development Goals. Nonetheless, this study's primary focus is on topics that overlap with creative teaching for sustainable development objectives.

Innovation is the part of educational change that entails modifying certain elements of curricula and methods. According to Osim (2012), educational innovations are comprehensive adjustments made to the educational system and management that lead to the use of systems for the quicker and simpler resolution of problems and concerns. According to Akimolafe (2011), educational innovation affects teaching and learning methods, strategies, and techniques by fostering a sustainable innovative environment. It also calls for the development of individual creativity. The main goals of innovations are the renewal of inputs, processes, and outputs, even though they are not as comprehensive as reforms. It brings about change by kicking off new initiatives within an establishment or organization. Living in such a dynamic environment has made innovation a necessity for human development and advancement in institutions. Because innovation is so dynamic, education as a human institution must adapt to the many issues that it faces on a daily basis in order to satisfy these demands (Mgbekem, 2004).

Universities need to provide creative project-based learning and entrepreneurship instruction. The project's goals are to engage staff and students in a practical manner with some of society's problems and work toward finding solutions, as well as to instill and develop in both a sense of responsibility for society and the fulfillment that comes from helping others. Practical projects typically involve manual labor and call for the application of skills learned in degree programs to benefit the community. Conversely, the goal of entrepreneurship education is to give students the information, abilities, and drive needed to support successful entrepreneurship. In a variety of contexts, entrepreneurship education also emphasizes the growth of abilities and qualities that facilitate opportunity realization through efficient use of the educational system and other available platforms. The foundational idea of entrepreneurship education calls for the deft arrangement of information in a given field in a way that highlights the latent potential in the fields of self-employment and job creation, along with a set of moral principles that aren't typically covered in a university curriculum (Uche, 2020).

According to Ojiako (2014), there are various ways that learning happens, so it is necessary to use a variety of teaching techniques, approaches, and guidelines. Graduates from universities need to be equipped to handle the ongoing, drastically changing changes in the educational system. Learning for life and through life is ensured through innovative education. It enhances the ability of recent graduates from universities to offer pertinent, expanded opportunities for the development of a stronger society. According to Achuonye (2002), problem-based learning (PBL), action learning (AL), contextual learning (CL), and work-based learning (WBL) are among the tactics for managing innovative education. According to Fadipo and Adepoye (2009), retraining lecturers, case studies, role-playing, and organizational leadership training are a few strategies that can encourage creative changes in the abilities of academic staff. These approaches typically stress active and in-depth learning and are learner-centered, problem-based, and group-based.

2. Conceptual Framework

The foundation of this work is Edwin Locke's (1986) Goal Theory, which Kpee (2015) cites. According to the theory, in order to reach the highest levels of innovation, objectives should be clear and there should be a clear path for individuals or groups to follow in order to become focused and realize their goals. When objectives are established, people are also pushed to consider alternative paths to reaching those objectives. The goal theory is based on the idea that conscious concepts control an individual's behavior. Goals serve two primary purposes, according to Locke: they guide behavior and serve as the foundation for motivation. The primary source of motivation to work is the intention to work toward a goal, since goals have an impact on performance when such goals are accepted by the individuals to be worth working for.

Additionally, Kaegon and Nwaeke (2021) claimed that in order for goals to be accomplished, they must be S.M.A.R.T. . . SMART means

S – Specific

M – Measurable

A – Attainable

R – Relevant

T – Time-bound

Therefore, it is generally expected that goals will satisfy the SMART requirements. In addition, the theory suggested that objectives should be measurable, challenging but not insurmountable, and have a deadline for completion.

Similarly, the 169 target areas help to clarify the broad sustainable development goals. Since achieving the 17 goals is challenging, countries, organizations, and non-governmental organizations have had to create action plans and blueprints in order to do so. Making an action plan guarantees that efforts are directed toward goal achievement rather than being squandered. In addition, the theory gives people a way to contribute to the creation of goals and gives them motivation to stick with it in order to reach those goals. The Sustainable Development Goals (SDGs) are time-bound, relevant to current global conditions, quantifiable, and specific. Since the SDGs have specific targets indicated, this theory is relevant to the study. It makes it possible for a country, groups, and individuals to understand expectations. It is extremely difficult since it addresses a wide range of international concerns, forcing countries to concentrate and direct their efforts in the proper ways in order to address them.

2.1 Management

Every organization needs a person or group of people to manage its operations by organizing, directing and directing human activities towards the achievement of its objectives. These persons are referred to as supervisors, managers, administrators or leaders. Thus, management plays a major role in the effectiveness of the organization. According to Okwori (2011), management is the process of coordinating all activities of planning, organizing, directing and controlling in order to achieve the

objectives of the organization. According to Igbinedion (2016), management is a dynamic process that mobilizes human and non-human resources to achieve the goals and objectives of the institution.

The university administrator oversees decisions regarding the implementation of policies and programs within the university and is responsible for managing the affairs of the university system. Therefore, to achieve innovative university education in Nigerian universities, administrators must successfully plan and implement innovative policies and programs that would help students develop their minds and skills, which will ultimately help Nigeria to achieve its sustainable development goals. In fact, management is the effective arrangement and application of material and human resources within a specific system to achieve predetermined goals (Ofor-Douglas, 2020).

2.2 University Education

A university education is a higher education obtained after an individual completes primary and secondary school. It not only provides high-level skills for the labor market, but also the training necessary for teachers, doctors, civil servants, engineers, entrepreneurs and countless other workers. These individuals develop the capabilities and analytical skills that drive local economies, support civil societies, teach children, lead effective government, and make important decisions that affect entire societies. A university is a community of scholars and students engaged in the complex task of learning to which humanity looks toward overall human progress (Ofor-Douglas, 2020).

The goal of higher education is to optimally contribute to national development by intensifying and diversifying its programs for the development of a high workforce in the context of the country's needs (FRN, 2014). For university administrators in Nigerian universities to achieve such laudable goals and objectives, administrators need some strategies to face and solve challenges within the organization.

2.3 Sustainable Development Goals (SDGs)

The Sustainable Development Goals are frameworks for globally organized development that aim to create new projects focused on people's needs. It is a set of goals that address the world's most pressing political, socio-economic and environmental issues. The Millennium Development Goals (MDGs) have been replaced by the Sustainable Development Goals (SDGs). The MDGs were originally intended as an international initiative to combat extreme poverty, hunger and other diseases while promoting gender equality, reducing child mortality, combating HIV/AIDS, malaria and other diseases and creating global partnerships for development (UNESCO, 2017). There were twenty one goals in the Millennium Development Goals.

According to Uche (2020), the Sustainable Development Goals, on the other hand, are a set of 17 global goals created by the United Nations Assembly that prioritize a comprehensive strategy to achieve sustainable development for all. These goals include:

- A. End poverty in all its forms everywhere
- B. End hunger, achieve food security and better nutrition, and promote sustainable agriculture
- C. Ensure healthy living and promote well-being for all at all ages
- D. Ensure inclusive and equal education and promote lifelong learning opportunities for all

- E. Achieve gender equality and empower all women and girls
- F. Ensure availability and sustainable management of water and sanitation for all
- G. Ensure access to affordable, reliable, sustainable and modern energy for all
- H. Promote sustainable, inclusive and sustainable economic growth, full productive employment and decent work for all
- I. Build reliable infrastructure, promote inclusive and sustainable industrialization and promote innovation
- J. Reduces inequality within and between countries.
- K. Makes cities and human settlements inclusively safe, resilient and sustainable
- L. Ensure sustainable patterns of consumption and production
- M. Take urgent action to combat climate change
- N. Protect and sustainably use oceans, seas and marine resources for sustainable development
- O. Protect herd and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss
- P. Promote peaceful and inclusive societies for sustainable development, provides access to justice for all and build effective, accountable and inclusive institutions at all levels
- Q. Strengthen the means of implementation and revitalize the global partnership for sustainable development (UN, 2017).

Goals 1 to 12 of the above “global goals” are people-centered and aimed at understanding the meaning of development. Goal 17 – focused on global partnership – reveals ways to achieve the other 16 goals, which are interdependent. Goals 13-16 are about promoting courses that would sustain the environment. This study focuses on topics that overlap with creative learning for the SDGs. As a result, lecturers should incorporate the SDGs into their lesson plans, and universities should prioritize integrating the goals into all their programs to instill a sustainable mindset in their students.

Universities can play a special and vital role in providing solutions for the SDGs, and forming partnerships to develop research is one of the best ways to do this. Universities can host stakeholder conferences where different collaborating organizations meet. This could be done with the intention of holding a student sustainability conference that would open dialogue on a variety of sustainable topics with stakeholders, including public art, activism, women’s health, youth development/empowerment, politics, and environmental issues. Universities play a key role in achieving the Sustainable Development Goals, which affect all aspects of higher education institutions, as well as their development partners and other stakeholders. More platforms must be developed and experts with experience in higher education must be available.

2.4 Innovation

It generally refers to the latest advances in processes, goods or services. It is the use of novel concepts to improve a product, process or service. The linked service refers to educational services offered by universities. Using innovation in education means making decisions based on what is best for the

curriculum, classrooms, students, and teaching methods. It is a broad concept that encompasses a range of pedagogical innovations, technologies and teaching and learning strategies, all aimed at improving the quality of education and its outcomes. It is often characterized as a departure from conventional teaching techniques and the adoption of cutting-edge strategies that encourage student engagement, critical thinking and creativity (Bechard, 2007). It requires the use of knowledge, logic and creativity. According to Apehinde (2013), innovation is the introduction of new concepts or methods. Akudo (2010) further stated that innovation is the application of new and improved ideas, knowledge, procedures, machines, tools, equipment and processes resulting in new and improved goods, services and procedures. Teaching innovation is the process of turning an idea, technology, or technique into a successful product, process, or service that meets the needs of students. It is technology that improves learning outcomes, collaborative relationships or systemic practices in schools. Because it seeks sustainability and improves student preparation through interaction and interactive learning, innovation in education is a purposeful effort to bring novelty to a specific context (Bechard, 2007). It is a tool designed with the intention of bringing something new into the world and putting it into practice to improve performance and growth through increased efficiency and effectiveness. According to Ogakwu and Isefe (2012), innovation is the process through which a new product is released, disseminated in the system and integrated into other operational practices. According to Olugboyega (2013), innovation can exist in various forms including:

- Process innovation, which includes changing and improving procedures; this leads to higher performance, lower costs and growth in demand.
- Product or service innovation opens up new markets and increases demand, which encourages investment and job opportunities.
- Innovation in the organization and management of work, as well as the use of human resources and the ability to anticipate strategies.

Innovative education is a dynamic field that offers promising methods for improving teaching and learning. It is the purposeful identification and application of concepts, knowledge, creativity and initiative to achieve better results. However, in order to be successfully implemented, careful planning, constant professional growth and consideration of the specific requirements and environment of the students are necessary.

2.5 Methods for Providing Innovative Education

A variety of learning models and strategies are included in innovative education, such as blended learning, flipped learning, and technology integration.

I. Integrating Technology: Integrating technology into the teaching and learning process is a key component of innovative education. The way educators interact with students and deliver content has changed due to digital trolls, online resources and learning management systems (Olugboyega, 2017). Technology-enabled learning enables individualized instruction, active learning, and better student outcomes.

- ii. Blended and Flipped Learning: In state-of-the-art education, blended and flipped learning models have gained acceptance. With the flipped classroom, students watch lectures or other materials on tape in advance and study the material on their own before engaging in discussions and activities in a live or virtual classroom. Blended learning allows for greater flexibility and customization of learning experiences by combining face-to-face learning with virtual components (Okoringa, 2016).
- iii. Project-based and experiential learning: Innovative education places a strong emphasis on these two approaches as useful tools to get students to solve real-world problems. These methods promote critical thinking, teamwork, and creativity by allowing students to apply theoretical knowledge to real-world situations (Mansur, 2020).
- iv. Personalized Learning: This dynamic field of education offers promising approaches to improving teaching and learning, but its successful implementation requires careful planning, ongoing professional development, and consideration of the unique needs and context of the learner. Personalized learning adapts instruction to the individual needs and preferences of students and often uses adaptive learning technologies (Ogakuwu & Isele, 2012).

2.6 Challenges to Innovative University Education in Nigeria

In order to achieve Nigeria's sustainable development goals, innovative university education must overcome a number of obstacles. Including:

Energy-related issues: Most ICT and Internet devices require energy to operate effectively. However, Nigeria has failed to supply enough energy to its people. Douglas (2022) concurred with this line of thinking when she argued that Nigeria is struggling to meet the electricity needs of its citizens. Therefore, without adequate power supply, e-learning in Nigerian universities cannot function effectively.

Computer illiteracy: This is the inability of people to understand or use computer hardware and/or software appropriately. Many educators and students lack basic knowledge of programming and functions. This suggests that it will be challenging for students to pay attention to their teachers. According to Ogbundikpa (2015), if innovative education is to continue in Nigerian universities, adequate infrastructure and facilities should be provided to support and enhance effective ICT (e-learning) training for instructors and students. Godwin in Chigozie-Okwum (2018) suggested that teachers who are trained in ICT and have strong digital literacy can help students develop higher order thinking skills, which can have a significant positive impact on their education.

Low level of curriculum adaptation: The curriculum of most Nigerian universities is outdated and still relies on outdated teaching techniques such as lecturing students with blackboards and markers, taking notes in notebooks, handing in assignments and more. As a result, they are unable to meet the demands of current, innovative teaching and learning standards. The reason is that some of the administrative directors of these educational institutions are not willing to adopt 21st century e-learning practices. An educational environment that is not welcoming, receptive to new ideas and adaptable will be limited in

attempting to foster innovation. Consequently, it is imperative that Nigerian universities adopt innovative curricula.

Financial Problem: Inadequate funding of studies, initiatives or conferences focused on sustainable development goals would be detrimental to the governance of creative higher education in Nigeria. The amount and size of resources available for community development, teaching, and research can be influenced by the financial resources available within the university system.

According to Chukwurah (2011), university funding in Nigeria does not meet the United Nations Educational, Scientific and Cultural Organization (UNESCO) minimum recommendation of 26%. In support of the above statement, Khali (2013) argued that Nigeria spends a significantly smaller percentage of its annual budget on education than other sectors compared to other countries at the same level of development.

Inadequate ICT and Internet facilities: According to Okolocha and Okolocha (2012), Nigerian post-secondary institutions lack the tools and resources needed to equip their students with the skills and competencies they need. Accordingly, Nwana (2012) suggested that there is a serious lack of e-learning resources including digital libraries, e-mail services, multimedia computers, internet/internet connected computers and multimedia television. Without sufficient ICT resources and a reliable Internet connection, innovative university education cannot function effectively.

Lack of maintenance and security of facilities: Physical resources including computers, projectors and smart boards among others must be properly managed and maintained in Nigerian universities. According to Ofor-Douglas (2022), this would only be possible if enough money was available to maintain these facilities. Mismanagement of funds meant for the maintenance of facilities by some managers of universities in Nigeria has become a common practice. Another problem hindering the innovation of university education in Nigeria is the lack of security of ICT and e-learning facilities in the university environment. According to Jian and Reo (2011), security measures are in place to prevent theft and unauthorized entry into work areas. Several instructors and students have developed a habit of looting ICT resources. This immoral act has also led to a decline in e-learning resources, which hinders the development of excellence in teaching in Nigerian universities.

2.7 Problem Statement

Innovative education in Nigerian universities is essential for achieving the Sustainable Development Goals (SDGs) due to factors such as technologies integration, information technology (IT), flipped and blended learning, students' digital literacy, large school enrollment, changes in curriculum content, new research findings, the recent global pandemic (COVID 19), and government educational policies and directives. In this era of rapid technological advancement and information communication technology compliance, outdated skills and knowledge are not appropriate. Education stakeholders are deeply concerned about the current state of Nigerian university education, which is plagued by poor infrastructure, inadequate information technology facilities, a lack of professionally trained staff, poor research skills, poor communication skills, brain drain syndrome, ineffectiveness, and low staff

productivity. It is now necessary for the researcher to start this study, which focuses on managing creative education in universities to help public universities in Delta State, Nigeria, achieve sustainable development goals.

2.8 Purpose of the Study

Examining how universities in Delta State, Nigeria, manage creative education in support of sustainable development goals is the primary goal of this research. The study specifically aimed to:

- 1). Determine how innovative education can be managed in universities to support Delta State's sustainable development goals.
- 2). Determine the best management practices for innovative education in universities to help Delta State meet its objectives for sustainable development.

2.9 Research Issues

To direct the investigation, the following research questions were developed:

- 1). How can innovative education be managed in universities to help Delta State, Nigeria, achieve its goals for sustainable development?
- 2). What are the strategies for managing innovative education in universities for the achievement of sustainable development goals in Delta State, Nigeria.

2.10 Hypotheses

The research investigated the subsequent null hypotheses:

- 1). There is no significant difference between the mean rating of lecturers at federal and state universities on the ways of managing innovative education in Universities to facilitate the achievement of sustainable development goals in Delta State, Nigeria.
- 2). There is no significant difference between the mean ratings of lecturers at federal and state universities regarding the strategies of managing innovative education in universities for the achievement of sustainable development goals in Delta State, Nigeria.

2.11 Methodology

The survey design used in this study was descriptive. Five public universities in Delta State made up the study's population (Federal and State Universities). They included the Deans, Provosts, Directors, Assistant Bursars, Lecturers, Registrars, Librarians, HODs, Vice Chancellors, Deputy Vice Chancellors, Bursars and Lecturers. 360 respondents made up the sample size, and they were chosen using a proportionate stratified random sampling technique. There were 240 respondents from state universities and 120 respondents from federal universities in this survey. Data were gathered using a self-created tool called the "Management of Innovative Education in Universities for Achievement of Sustainable Development Goals Questionnaire (MIEUASDGQ)." Experts from the University of Delta, Agbor departments of measurement and educational administration validated the instrument. When the instrument's reliability was assessed using the Crunbach Alpha, a reliability value of 0.74 was found, indicating that the instrument is extremely reliable. There were two sections on the instrument: A and B. The respondents' personal information is covered in Section A. Items in Section B were created to elicit

data related to addressing the research questions and validating the hypotheses. Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) was the format for the response options. The weights are 1, 3, 2, and 4, in that order. Three research assistants and the researcher administered the instrument. With a criterion mean of 2.50, the research questions were addressed using the mean and standard deviation. The hypotheses were tested at the 0.05 level of significance using the Z-test statistics.

3. Presentation of Results

3.1 Research Question 1: How can innovative education be managed in universities to help Delta State, Nigeria, achieve its goals for sustainable development?

Table 1. Mean Score and Standard Deviation on Ways Innovative Education Can Be Managed in Universities to Facilitate the Achievement of Sustainable Development Goals

S/N	ITEMS DESCRIPTION	Federal Universities No: 120			State Universities No: 240		
		x	Std	Decision	X	std	Decision
1.	Raise skill level of teachers	3.29	0.30	Agree	3.34	0.20	Agree
2.	Build students capacity for job opportunities	3.23	0.28	Agree	3.13	0.20	Agree
3.	Improve teachers knowledge in delivering quality instruction	3.18	0.28	Agree	3.26	0.20	Agree
4.	Facilitate greater students participation in learning process	3.20	0.28	Agree	3.18	0.20	Agree
5.	Expose students to real-life situations	3.40	0.30	Agree	3.19	0.20	Agree
6.	Enhance the quality of students	3.33	0.30	Agree	3.16	0.20	Agree
Grand Mean and std		3.27	0.29		3.21	0.20	

Table 1 demonstrates that every item on the list of strategies for managing innovative education in universities to help Delta State meet its sustainable development goals was approved by the respondents. The mean ratings for state universities (3.21) and federal universities (3.27) were all higher than the 2.50 criteria mean. This suggests that the respondents agreed that innovative education can be managed in universities for the achievement of sustainable development goals in Delta state, Nigeria. They also agreed that increasing teacher skill levels, preparing students for career

opportunities, improving teachers' knowledge in delivering quality instruction, facilitating greater student participation in the learning process, exposing students to real-life situations, and enhancing the quality of students are some of the ways.

3.2 Research Question 2: What are the strategies for managing innovative education in universities for the achievement of sustainable development goals in Delta State, Nigeria?

Table 2. Mean and Standard Deviation on the Strategies for Managing Innovative Education in Universities for the Attainment of Sustainable Development Goals

S/N	ITEMS DESCRIPTION	Federal Universities No: 120			State Universities No: 240		
		x	std	Decision	X	std	Decision
1.	Strategic fund raising programmes	2.99	0.26	Agree	3.27	0.20	Agree
2.	University industry collaboration	3.19	0.28	Agree	3.04	0.17	Agree
3.	Technology integration	3.08	0.26	Agree	3.19	0.20	Agree
4.	Project-based and Experimental learning	3.18	0.28	Agree	2.91	0.17	Agree
5.	Blended learning	3.34	0.30	Agree	3.19	0.20	Agree
6.	Flipped learning	3.39	0.30	Agree	3.31	0.20	Agree
Grand Mean and std		3.19	0.28		3.15	0.19	

According to Table 2 above, all of the items are strategies for managing innovative education in universities for Delta State's sustainable development goals, as agreed upon by the respondents. This is due to the fact that the federal universities' and state universities' grand mean responses (3.19) and (3.15) exceeded the 2.50 criterion mean. This suggests that strategies for managing innovative education in universities for the accomplishment of sustainable development goals in Delta state include fund-raising campaigns, university-industry collaboration, technology integration, project-based and experimental learning, blended learning, and flipped learning.

3.3 Hypothesis 1:

There is no significant difference between the mean ratings of lecturers in Federal and State Universities on the ways innovative education can be managed in Universities to facilitate the achievement of sustainable development goals in Delta State, Nigeria.

Table 3. Summary of Z-test Analysis on the Mean Ratings of Federal and State Universities Lecturers on the Ways Innovative Education Can Be Managed in Universities for Sustainable Development Goals

Respondent	No	x	std	z-cal	z-critical	Decision
Federal Universities	120	3.27	0.29	0.42	1.96	Accept
State Universities	240	3.21	0.20			

Significant at 0.05

Table 3 presents an overview of the average evaluations, standard deviation, computed critical ratio test, and disparity between federal and state university lecturers regarding how to manage innovative education in universities to help Delta State meet its sustainable development objectives. The null hypothesis, which states that there is no significant difference between the mean ratings of lecturers in federal and state universities on ways innovative education can be managed in universities to facilitate the attainment of sustainable development goals in Delta state, Nigeria, is hereby accepted. The data indicates that, at the 0.05 level of significance, the z-calculated value of 0.42 is less than the z-critical value of 1.96.

3.4 Hypothesis 2:

There is no significant difference between the mean ratings of lecturers in Federal and State Universities on the strategies for managing innovative education in Universities for the achievement of sustainable development goals in Delta State, Nigeria.

Table 4. Summary of the Z-test Analysis on the Mean Ratings of Federal and State Universities Lecturers on the Strategies for Managing Innovative Education in Universities for the Achievement of Sustainable Development Goals

Respondent	No	X	std	z-cal	z-critical	Decision
Federal Universities	120	3.19	0.28	0.29	1.96	Accept
State Universities	240	3.15	0.19			

Significant at 0.05

In Table 4, the methods for managing innovative education in universities for the accomplishment of sustainable development goals in Delta state are summarized by mean ratings, standard deviation, calculated and critical ratio test of difference between lecturers in federal and state universities. At the 0.05 level of significance, the Z-calculated value of 0.29 is less than the Z-critical value of 1.96, according to the results. We accept the null hypothesis, based on the data, which states that there is no discernible difference between the mean ratings of lecturers in federal and state universities regarding

the methods used to manage innovative education in universities to help Delta State achieve its sustainable development goals.

4. Discussion of Findings

The results of research question one show that both federal and state universities concurred that some strategies for managing innovative education in universities to support the achievement of sustainable development goals in Delta state, Nigeria, include increasing teacher skill levels, preparing students for career opportunities, enhancing teachers' knowledge in providing quality instruction, encouraging greater student participation in the learning process, exposing students to real-life situations, and improving student quality. When it comes to managing innovative education to help Delta State, Nigeria, achieve its sustainable development goals, federal and state lecturers' mean ratings did not significantly differ, according to the results of the first hypothesis test. The results support the claim made by Fadipo and Adepoju (2009) that learner-centered, customized instruction is becoming more prevalent in teaching and learning activities. The ability of university lecturers to manage innovations will be greatly enhanced by exposing them to various techniques, mindsets, and understanding of innovations in education through training and retraining programs. This suggests that programs for capacity building and training are essential components of the university system that provide faculty members with cutting-edge training and help Delta State, Nigeria, fulfill its sustainable development objectives.

The results of research question two also showed that lecturers at federal and state universities in Delta State concurred that technology integration, project-based and experimental learning, blended learning, flipped learning, and strategic fund-raising programs are among the many tactics for managing innovative education in universities for the accomplishment of sustainable development goals. Furthermore, hypothesis two shows that lecturers at federal and state universities have similar views about how to run innovative education in Delta State universities. According to Olugboyega (2017), Mansur (2020), and Okoringa (2016), the aforementioned strategies are essential for managing innovative education for sustainable development goals, and this finding is consistent with their findings. These fundamental techniques will encourage the use of creative teaching techniques and make it easier for academic staff to provide high-quality services. The strategies will also serve as guidelines for Delta State, Nigeria's universities in achieving sustainable development goals.

5. In Summary

This paper highlights the significance of innovative university education for sustainable development goals in Delta state, Nigerian universities. It is imperative to acknowledge the dynamic nature of the world and adapt Nigerian university education to emerging trends in educational innovation. A more humanistic approach combined with contemporary educational innovations and technologies can help

achieve sustainable development goals. In order to support sustainable development goals, university administrators must work to ensure that innovation is evident in their educational policies.

6. Advice

The following recommendations were made in light of the findings:

- 1). To meet the goals of sustainable development, staff members should receive regular training on how to use cutting-edge facilities to increase their productivity through seminars and workshops.
- 2). Effective and adaptable leaders ought to hold a variety of positions in universities, starting an innovative trend within the educational system. Universities in Nigeria should also implement a new curriculum that complies with cutting-edge, 21st-century teaching techniques.
- 3). Using a combination of digital and analog teaching techniques will enhance the learning environment. The implementation of e-learning in Nigerian universities can help achieve this.
- 4). Nigerian universities ought to increase their revenue sources internally rather than relying solely on government support.
- 5). ICT centers ought to be available in universities as well, guaranteeing that information on sustainable development goals will be accessible to students who cannot afford their own gadgets.
- 6). ICT and internet infrastructure needs to be properly and routinely maintained.
- 7). Sufficient security ought to be offered to protect ICT and internet resources so that e-learning can occur.

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