

Curriculum Implementation in Teacher Education Institutions for Attainment of 2030 Sustainable Development Goals: Teacher-Educators' Views

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Abstract

Nigeria's drive to deliver democratic dividends; improve the lives of her citizenry by fighting inequality, injustice, corruption; promote peace; and tackle climate change by 2030 remains apt and the matters require urgent attention. Out of the 17 Sustainable Development Goals (SDGs), SDG4, which is "ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all", appears to be the hub around which the other SDGs revolve. The curriculum process is the major source through which the SDGs framework which has five key themes: people, planet, prosperity, peace, and partnerships, will be realised. The curriculum implementation process for the attainment of the SDGs involves needs analysis, selection of objectives, designing appropriate content, selecting learning experiences, organisation and evaluation of the learning experiences. Teaching the curriculum process requires sufficient knowledge by teachers and the application of the curriculum process to global issues such as the SDGs. This

paper examined teacher educators' views on the use of curriculum process in teaching for the attainment of the SDGs through curriculum implementation process. Five research questions guided the study. A qualitative analysis was used to elicit information from the teacher-educators using three open ended interview questions. A purposive sampling technique was used to select one hundred and eighty (180) teacher-educators from teacher education institutions in the South-East. A 31-item structured questionnaire on four-point Likert scale was used for data collection, while simple mean was used for the data analysis. The result of the study showed that the teachers were of the view that for the SDGs to be attained it must use the curriculum process. The study further revealed that poor application of the curriculum process was a major pitfall preventing the realisation of the national objectives. The teachers, in addition to other things, noted that 15 years is too short a period of time to realise the SDGs. The findings have implications for the attainment of the SDGs by the year 2030. Suggestions were proffered on the need for the government to see the attainment of the SDGs as a policy issue and provide the necessary enablement for schools to facilitate the attainment of the SDGs by 2030.

Keywords: Sustainable development goals, Curriculum implementation, Curriculum process, Inclusive education

Introduction

The cardinal focus of the Federal Government of Nigeria is to deliver democratic dividends and improve the quality of lives of her citizenry by fighting inequality, injustice, and corruption; promoting peace; and tackling climate change. These are also part of the unattained objectives of the Millennium Development Goals (MDGs) which expired in 2015. In an effort to continue the unfinished agenda of the MDGs, the Sustainable Development Goals, also known as the post-2015 development agenda, were created to replace the expired MDGs. Some of the MDGs objectives that were not attained include but are not limited to the eradication of poverty, inequality, and injustice. These unattained goals appear to have stirred up

agitations in different parts of the globe, resulting in violence, terrorism. In addition to these problems natural phenomenon such as climate change has equally posed challenges to human environment, lives and property.

The concept of Sustainable Development Goals (SDGs) was born at the United Nations Conference on Sustainable Development, Rio + 20 in 2012 where demands were made for leadership on poverty, inequality and climate change all over the world. The objective of the conference was to produce a set of universally applicable goals that balance the three dimensions of sustainable development, viz. the environment, social justice and viable economy. There are 17 SDGs according to UNESCO (2015) with 169 targets. The SDGs are expected to build on the MDGs and complete some of the goals that were not realised. They include among others:

- An estimated 1.4 billion people are still living in extreme poverty
- Gender equality is sluggish- from access to education to political decision-making.
- Severe impact on climate change is felt by vulnerable population who had no contribution to the problem
- Maternal health is an area with serious deficiency with a gap between the rich and the poor.

The major problem of the unrealised MDGs may not be unconnected with the curriculum implementation processes. The SDGs are expected to free the human race from the tyranny of poverty and want; and heal and secure the planet for present and future generations. The goals and targets are expected to stir up action for the next 15 years. In other words, it is expected that by 2030, most of the stipulated goals and targets would have been realised. It presupposes that necessary actions need to be taken towards the realisation of this agenda and education is a major driver of the goals.

According to UNESCO (2015), education is a public good, a fundamental human right and a basis for guaranteeing the realisation of other rights. It is essential for peace, tolerance, human fulfilment and sustainable development. It is a process through which the 17 SDGs with 169 targets can be realised. SGD 4 for instance advocates for inclusive and equitable quality education and promotion of lifelong learning opportunities for all. With this resolve, once inclusive and equitable quality education is

established, understanding, tolerance and unity of purpose is ensured. UNESCO maintained that inclusive and quality education is the cornerstone for transformative education. Transformative education will be a major stepping stone to the realisation of the 16 other SDGs. Transformative education will however not be achieved without the curriculum implementation process by teachers, who are the implementers.

The curriculum process has been described by Obiefuna (2009) as the continuous identification, selection, and arrangement of learning opportunities with the creation of curriculum materials and teaching strategies that fit into the challenging conditions prevailing in an environment. Such curriculum must be relevant and responsive. A relevant curriculum, according to Dike and Eze (2009), endows the learner with appropriate knowledge, skills and attitudes that will harness resources which will help to improve the quality of life and the environment. In the same vein, a responsive curriculum, as pointed out by Emah (2009), is one that articulates the current needs, problems and aspirations of the learner. Put differently, the curriculum process must be in tune with the basic needs of the learners, which invariably will be the same as that of the society. The current 17 goals serve as the needs of the people. The curriculum process involves stages or steps. The stages can be linear or cyclic, but the most essential thing is that the design must have: identification of needs, selection of objectives, selection of content, selection of learning experiences, organisation of learning experiences, and evaluation.

The needs of the world have been identified in 17 goals and 169 targets. Out of these, Nigeria has identified eight major goals that are peculiar and relevant to her needs. They include:

1. Eradicating extreme poverty and hunger;
2. Achieve universal primary education;
3. Promote gender equality and promote women;
4. Reduce child mortality;
5. Improve maternal health;
6. Combat HIV/AIDS, malaria and other diseases;
7. Ensure environmental sustainability;
8. Develop a global partnership for development.

The listed needs can be regarded as emergent curriculum issues that should be integrated during teaching. Curriculum implementation is one of the courses taught in teacher education institutions. It is aimed at teaching the intern teachers how to take action that will reflect the society's needs by selecting the appropriate and necessary objectives, selecting content and learning experiences, organizing the learning experiences and evaluating learning outcomes, as suggested by Wheeler (1978). Some of the major problems observed include teachers' inability to select the appropriate objectives for the attainment of educational goals. Mkpa (2005) observed that the extent to which desired objectives were implemented determined the extent to which educational goals were attained. Yusuf (2012) for instance, pointed out that the Federal Government of Nigeria (FRN, 2004) in its National Policy on Education has as one of its educational goals, 'the inculcation of the right type of attitude for the survival of individuals and the Nigerian society. Unfortunately, with the present situation, Nigeria's unity appears to be under threat; the observation could be attributed to the values attached to the curriculum objectives. The serious gap should be looked at in the implementation of the SDGs.

In the curriculum implementation process, after the objectives have been selected, what follows are the selection of the content, learning experiences, organisation and evaluation. The extent to which the experiences will be implemented will determine the extent to which the needs will be realised, but more importantly the implementation lies in the hands of the teacher-educators who train the intern teachers on the curriculum implementation process. Teacher-educators become an important factor in the curriculum implementation process. Their quality, quantity and competence cannot be compromised. Teacher quality and quantity; competence and effectiveness are the correlates that would promote the attainment of the SDGs. According to Imogie (2011: 6), a teacher is a guide, a communicator, a moderator (a bridge between generations), a model (example), a searcher (one who finds knowledge), a counsellor (a confidant and friend), a creator (stimulator of creativity), an authority (one who knows), an actor, inspirer of vision, a doer of routine, a breaker of camps, a story teller, a scene designer, a builder of community, a learner, a facer of reality, an emancipator, an evaluator, a conservator (redeemer and saviour), a culminator, a person.

The implication of all this is that teachers are special people who are

subject to the ethics of the teaching profession. These ethics must be inculcated in the teacher-interns. But these attributes appear problematic. UNESCO Institute for Statistics (UIS) (2015) observed that massive teacher shortages will continue to deny millions of children the right to primary education. The available teachers appear not to be passionate about their jobs, some do not possess the knowledge of the content and where they do, delivery of the content without appropriate resource materials affects the teaching learning situation. Mkpa (2017) observed that emphasis is shifting from highly qualified teachers to highly effective teachers. Asiabaka and Emenalo (2011) on their part, attributed the low-quality observations to low concept given to teachers. Mkpa (2017) further explained that many governments of developed and developing nations invest huge sums of money and formulate initial dynamic policies towards capacity building of teachers, however, these are not sustained. Efforts should be made towards capacity building of teachers in Nigeria to enable them achieve utmost competencies and effectiveness in teaching and learning which will promote the attainment of the SDGs.

The curriculum implementation process requires teacher competencies and effectiveness. It involves knowledge of stating objectives, selection of content, selection and organisation of learning experiences and evaluation techniques. Afurobi et al. (2015) were of the view that equipping teachers–trainees for students’ engagement is the prerogative of the teacher-educators.

The purpose of this study therefore, was to ascertain teacher-educators’ views on the curriculum implementation process for the attainment of the sustainable development goals. It specifically examined the extent to which:

1. Curriculum objectives focus on the attainment of the SDGs.
2. Curriculum contents reflect the tenets of the SDGs.
3. Learning experiences promote the attainment of the SDGs.
4. Methods used (organisation of the learning experiences) facilitate attainment of the SDGs.
5. Evaluation techniques used for assessing SDGs.

Based on the above objectives, the following research questions were posed to guide the study:

1. To what extent are the curriculum objectives focused on the attainment of the SDGs?
2. What is the nature of curriculum content required for the attainment of the SDGs?
3. To what extent are the selected learning experiences focused on the attainment of the SDGs?
4. What organisational strategies are employed for the attainment of the SDGs?
5. What are the relevant evaluation techniques used for the attainment of the SDGs?

Methods

The study utilised the descriptive survey design to elicit information from teacher-educators on the extent to which the curriculum implementation process in teacher education institutions is geared to the attainment of the 2030 sustainable developmental goals. The population of the study consists of 2,310 teacher-educators in the South East geo-political zone (NCCE Quality Assurance Unit Statistical Office, Abuja). Three Federal Colleges of Education were purposively sampled. A total of 180 teacher-educators in the colleges who teach curriculum process implementation related courses were used for the study. Based on institutional capacity, the ratio of the teacher educators from the three colleges was 90:50:40 from Alvan Ikoku Federal College of Education, Owerri; Federal College of Education Technical, Umuze; and Federal College of Education, Ehamufu, respectively. The instrument for data collection was a 31-item structured questionnaire constructed on a four-point Likert-type scale and three open-ended questions used for interviews. The instrument was designed by the researchers and validated by three specialists: one in Educational Measurement and Evaluation, one in Curriculum and Instruction, and one personnel from the United Nations Development Project (UNDP) Abuja, head office. Corrections were effected in the final draft. An inter-rater reliability method was used to ascertain the reliability of the instrument. Data generated were analysed using the Pearson product moment correlation coefficient. An index of 0.85 was established, indicating a high reliability. The data generated were analysed using simple mean. A mean of 2.5 was accepted while any mean below 2.5 was rejected.

Results

Research Question One

To what extent are the curriculum objectives focused on the attainment of the SDGs?

Table 1: Mean scores showing the teacher educators' responses to the extent the curriculum objectives focus on the attainment of the SDGs

S/N	Items	SA	A	D	SD	CWS	Mean	DE
1	Curriculum objectives focus on eradication of poverty and hunger by 2030	480	120	30	5	635	3.5	A
2	Curriculum objectives focus on achieving universal basic education by 2030	472	162	16	0	650	3.6	A
3	Curriculum objectives focus on promoting gender equality and promoting women empowerment by 2030	524	108	26	9	658	3.6	A
4	Curriculum objectives focus on reduction of child mortality	460	126	40	3	629	3.4	A
5	Curriculum objectives focus on promoting maternal health	424	69	60	21	574	3.1	A
6	Curriculum objectives focus on combating HIV/AIDS malaria and other diseases	408	105	60	10	583	3.2	A
7	Curriculum objectives focus on promotion of peace, justice and strong institutions	356	195	44	4	599	3.3	A
8	Curriculum objectives focus on promotion of environmental sustainability	300	165	80	10	555	3.0	A
9	Curriculum objectives focus on promoting global partnership for development	192	180	80	32	486	2.7	A
	Grand Mean				3.2			

A grand mean of 3.2 in Table 1 shows that the teacher-educators were of the view that the objectives of teacher education curriculum would promote the attainment of the SDGs.

Research Question Two

What is the nature of curriculum contents required for the attainment of the SDGs?

Table 2: Mean score showing the response of the teacher-educators to the nature of curriculum contents required to attain the SDGs

S/N	ITEMS	SA	A	D	SD	CWS	Mean	DE
10	Curriculum contents should be structured into specialised and inter disciplinary courses.	408	141	60	1	616	3.3	A
11	Curriculum contents must relate to the objectives.	352	168	56	8	584	3.2	A
12	Curriculum contents should be integrated into appropriate courses.	264	204	56	18	542	3.0	A
13	Curriculum contents should be organised hierarchically.	224	198	84	16	438	2.4	R
14	Curriculum contents should reflect real life situations.	320	129	96	9	554	3.0	A
15	Curriculum contents should be relevant to human development.	268	180	88	9	548	3.0	A
	Grand Mean				2.98			

A mean of 2.98 in Table 2 indicates that the teacher-educators were of the view that the curriculum content should reflect those criteria to facilitate attainment of the SDGs.

Research Question Three

To what extent are the selected learning experiences focused on the attainment of the SDGs?

Table 3: Mean scores showing the teacher educators' responses on the extent the selected learning experiences should focus on the attainment of the SDGs

S/N Items	SA	A	D	SD	CWS	Mean	DE
16 Learning experiences should relate to the educational objectives	400	108	56	9	623	3.5	A
17 Learning experiences should be comprehensive.	300	126	86	20	532	2.9	A
18 Varieties of learning experiences should be used in teaching.	240	189	76	19	524	2.9	A
19 Learning experiences should be suitable to the learners.	320	126	80	18	544	3.02	A
20 Learning activities should be derived from students' learning styles.	252	132	80	30	494	2.7	A
21 Learning experiences should be patterned to reflect the demands of the society and the needs of the learners.	348	120	66	20	554	3.0	A
Grand mean				3.0			

A grand mean of 3.0 shows that the teacher-educators agreed that learning experiences should focus on strategies for the SDGs to be attained.

Research Question Four

What organisational strategies are employed for the attainment of the SDGs?

Table 4: Mean scores showing the teacher educators' response to the organisational strategies employed for the attainment of the SDGs

S/N Items	SA	A	D	SD	CWS	Mean	DE
22 Curriculum SDGs should be arranged to show integration of the contents.	304	168	90	3	465	2.5	A
23 Curriculum should be organised to show continuity throughout the course study.	320	144	80	12	556	3.0	A
24 Curriculum content and learning experiences should be organised to have vertical and horizontal relationships	340	162	72	5	579	3.2	A
25 Curriculum should be organised to cover enough scope.	240	180	84	18	522	2.9	A
26 Curriculum should be organised to promote problem solving oriented	300	189	84	0	573	3.1	A
Grand mean				2.9			

The mean score of 2.9 shows that the teacher-educators agreed that the SDGs can be attained through appropriate organisation of content and learning experiences.

Research Question Five

What are the relevant evaluation techniques used for the attainment of the SDGs?

Table 5: Mean scores of the teacher educators' responses to the relevant evaluation techniques used for the attainment of the SDGs

S/N	Items	SA	A	D	SD	CWS	Mean	DE
27	Projects can be used to evaluate the curriculum.	160	90	124	48	422	2.3	R
28	Case studies used can be used to evaluate the learning outcomes.	264	135	80	29	508	2.8	A
29	Online collaboration tools can be used to share ideas and determine the attainment of the SDGs.	144	126	120	42	432	2.4	R
30	Assessment tools such as the graphic organisers can be used for evaluation of learning outcomes	130	100	146	56	432	2.4	R
31	Evaluation portfolios should be used to make evaluation comprehensive.	292	162	72	17	543	3.0	A
	Grand mean					2.58		

A grand mean of 2.58 signifies the views of the teacher-educators on the use of appropriate evaluation techniques on the attainment of the SDGs.

Discussion

This paper examined teacher-educators' views on the curriculum implementation process in teacher education institutions for attainment of the 2030 sustainable development goals. Five research questions guided the study.

The results in Table 1, show the views of the teacher-educators on the extent to which curriculum objectives focus on the attainment of the SDGs. A grand mean of 3.2 indicates that they agree that curriculum objectives should focus on hunger and poverty eradication, achievement of universal basic education, promotion of gender equality and women empowerment,

combating diseases, promoting peace and environmental sustainability and global partnership. These are the main needs of the society which school curricula should focus on to realise the SDGs by 2030. The mean of 3.5 shows a great need to eradicate hunger and poverty by 2030. Hunger and poverty can be an offshoot of underdevelopment in a society. Health issues such as child mortality, maternal health, and diseases can be attributed to hunger and poverty in the society. They are part of the unfulfilled needs of the MDGs. It may be for such observations that the need for universal basic education was further reiterated in SGD4 as a major source of achieving other needs. It was based on this premise that UNESCO (2015) maintained that inclusive and quality education is the corner stone for transformative education while transformative education remains the major stepping stone to the realisation of the other 16 SDGs. It is the responsibility of teacher-educators to ensure that the identified needs are emphasised while implementing the curriculum. Their products will create a multiplier effect in terms of attainment of the SDGs as they teach in schools.

The results on the teacher-educators' views on the nature of contents required to attain the SDGs (Table 2) had a grand mean score of 2.98, which shows that they are of the view that nature of the contents selected has a role to play in the attainment of the SDGs. Curriculum implementation process demands that after the needs analysis, what follows is the selection of contents. A mean of 3.3 showed that the SDGs can be structured into disciplines such as subject-centered disciplines, integrated disciplines or core value related courses. The identified needs can be studied in various school subjects, such as agriculture, health sciences, geography, history. It can equally be studied in integrated disciplines such as environmental education, health education, civic and citizenship education, and so on.

Information on ideas, facts, concepts, theories and principles should be based on the needs of the society. It makes learners see the relationship between knowledge gained in school and their real-life experiences, which they can readily and critically analyse. Students could be knowledgeable and proffer solutions to problems. This assumption appears to be misleading as some graduates find it difficult to relate concepts they have learnt in school to daily life experiences. This may be related to the way they were taught.

Curriculum contents can be structured in themes that can lead to the understanding of other ideas. Abstract contents could be built into

experiences from different facets of life or from different disciplines. Contents can be arranged in a hierarchical order, such that critical thinking can be infused into the thought system. Students can transfer knowledge gained to investigate or analyse ideas to solve their problems.

Table 3 shows the teacher-educators' views on the extent learning experiences focus on the attainment of the SDGs. The teacher-educators' opinions show that for SDGs to be attained, learning experiences should be selected appropriately. The assertion was evident on the mean rating of 3.0 from the teacher-educators. In the curriculum implementation process, after the selection of content comes the selection of learning experiences. The selected learning experiences should be related to the objectives. They should be varied to accommodate every member of the class, which is in line with the SDGs slogan "leave no one behind". Again, use of a variety of learning experiences will also help to attain inclusiveness as the individual differences will be accommodated through variety of learning experiences.

The teacher-educators agree that they should be suitable to the developmental stage of the learners, patterned on the demands of the society and the needs of the learners, and comprehensive to produce the total man. This is the essence of education. Mkpa (2005) contends that the extent the desired objectives are implemented determines the extent the educational goals would be attained. Traditional methods and approaches of the 19th and 20th centuries promote passive learning but 21st century methods that enable the learners to inquire, participate, reflect, collaborate and reconstruct new knowledge are the type of learning activities that would facilitate the attainment of the SDGs. Learning experiences will help to attain the 2030 SDGs if these learning experiences are used in teaching and learning, as agreed by the teacher-educators.

In Table 4, the teacher-educators' views on the organisational strategies employed for the attainment of the SDGs are presented. A grand mean of 2.9 indicates that the teacher-educators agree that the objectives of the SDGs will be achieved with the appropriate organisation of content and learning experiences in curriculum implementation. The task of organisation of content and learning experiences entails adequate structuring of content and learning experiences in sequential, continuous and integrated forms, the scope should cover relevant facts, information and ideas. But it is common to see some inconsistencies in curriculum implementation, ranging from incoherent sequencing of course outline, to lack of continuity. It is also

observed that there is little or no integration of ideas and facts across disciplines, lack of time to cover the scope. The observation appears to be food for thought for curriculum planners and curriculum implementers. There is no gain rushing courses to meet a stipulated time. Course contents should progress in a sequence to facilitate mastery of the contents and production of functional members of society. The world of work today requires using 21st century strategies to solve societal problems to attain the SDGs.

Teacher-educators' views on the appropriate evaluation techniques that would help to attain the SDGs by 2030 are presented in Table 5. A grand mean of 2.58 was obtained. The use of projects to determine learning outcomes was rated low with a mean of 2.3. Though teachers supervise students' projects, they may not be at home with the employment of projects as an evaluation tool to determine the attainments in the SDGs.

The use of online collaboration and graphic organisers was equally rated low by the teachers. These are 21st century evaluation tools. The teachers may lack the skills to employ these techniques and that may be reflected in their responses. It is unfortunate that some teachers have not acquired information and communication technology (ICT) skills, which are critically veritable instructional and evaluation tools in the classroom today.

The use of case studies and portfolios was rated high. The simple explanation could be that the teacher-educators are conversant with these methods of evaluation. Evaluation determines the extent to which instructional objectives and educational goals have been achieved. The effectiveness of any evaluation will be based on the learners' ability to exhibit skills associated with the cognitive, affective, psychomotor and interpersonal domains. The use of effective and appropriate evaluation techniques should expose learners to critical thinking, creativity, collaboration and effective use of communication. A major fault associated with the traditional evaluation techniques lies in the fact that school products who have been certified worthy in character and leaning are not globally competitive. To attain the SDGs, the evaluation technique must agree with the demands of the industry and global market. The developmental indicators lie in the learners' ability to create critique, collaborate and share knowledge using technological advancement. Gaps observed are revisited until they satisfactorily meet human developmental demands, which are the essence of SDGs.

The use of the curriculum implementation process will make the SDGs attainable by 2030 if the curriculum planners, policy makers and curriculum implementers can jointly revisit the curriculum implementation process and ensure that the strategies used in the curriculum process are adequate, appropriate, functional and relevant to the SDGs.

Conclusion

The results from the study show that the SDGs are attainable using the curriculum implementation process. The 17 SDGs are not only important but crucial to human, social and environmental development. The major implementation process lies in the hands of policy makers, who will make provision for the finances; curriculum planners who should ensure adequate and relevant curriculum plans; and curriculum implementers who are to execute the curriculum by ensuring that adequate and appropriate content selection is used, achievable objectives stated, learning experiences with relevant methods and curriculum materials used in teaching. The use of appropriate evaluation techniques should not be overlooked as that will provide feedback on the curriculum endeavours. It is hoped that if the SDGs are integrated in the existing curriculum of teacher education institutions, and the curriculum is well implemented, there will be production of a critical mass of teacher-educators to promote the attainment of the SDGs by 2030.

Recommendations

Based on the findings, the following recommendations are proffered.

1. SDGs and relevant contents should be integrated in the existing teacher education curriculum.
2. All teacher-educators **MUST** acquire ICT skills to be able to effectively and efficiently implement the curriculum.
3. The pre-service teachers should be exposed to appropriate learning experiences to effectively equip them to implement the curriculum to attain the SDGs.
4. The Ministry of Education should organise a workshop to train the teacher-educators on 21st century learning activities, evaluation tools and techniques.

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