

Emerging Cross-Curricular Diversification and Implementation in Educational Institutions for Sustainable Development: Teacher Educators' Perspectives in Ogun State of Nigeria

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Abstract

The phrase sustainable development as a concept is one of the emerging international environmental rhetorics the world over which has become a curricular issue for all and sundry. It gained prominence in 1992 at the United Nations (UN) Conference held in Rio de Janeiro where it was agreed that Sustainable Development (SD) can be achieved essentially through the process of education. As a result, since the beginning of the 21st century in Nigeria, sustainable development issue is being addressed through curriculum innovations and curriculum offerings. This study examined cross-curricular diversification and implementation in Nigerian educational institutions for sustainable development. In the descriptive survey, three research questions were raised, and Cross-curricular Offerings for Sustainable Development Scale (COSDS) with a reliability index of 0.81 was used for data collection. A total of 400 teacher educators were randomly sampled from educational institutions in Ogun State, Nigeria. The study revealed that the participants' level of awareness of innovative curricula in Nigerian education for sustainable development was highest for civic education / citizenship education (100.0%) and lowest for capital market studies (20.0%). The challenges affecting cross-curricular diversification and implementation include curriculum overload (62.50), lack of adequate interdepartmental collaboration (73.8%) and structural curricular problem (66.0%). The researchers recommended the need for further promotion of curricular diversification by giving more attention to the strategies submitted in this study.

Keywords: Cross-curricular Diversification, Implementation, Strategies, Sustainable Development.

INTRODUCTION

Sustainable development is one of the international environmental rhetorics the world over, and indeed an emerging determinant of both human and societal capacity of both developed and developing countries. It acquired more strength in the 20th century when it was realized that, for human survival, changes in capacity building, production and consumption of many societal sectors was inevitable. It also gained significant force in the 70s, in particular, after the post-second World War reconstruction period, when environmentalists warned that the environment was being severely damaged as a result of the industrialization process (Marcos, 2008). The industrialization process led to a substantial economic growth around the globe, and at the same time, human environment was seen as threat.

As a result, the issue of sustainability was brought to the international agenda as early as 1972 during the United Nations (UN) conference on Human Environment in Stockholm, Sweden. In 1980, the World Conservation Strategy (WCS) initiated a global discussion on sustainable development (Kurya, 2005). The Brundtland Commission also published and presented a report on sustainable development at the UN General Assembly by the World Commission on Environment and Development (WCED) in 1987. The report was titled “Our Common Future”. The concept of Sustainable Development (SD) had also been used in 1980 by the International Union for the Conservation of Nature (IUCN) in the World Conservation Strategy. A global discussion on the actions for promoting sustainable development became accelerated in 1992 Earth Summit held in Rio de Janeiro, and education was realized as one of the variety of measures which could be used to promote sustainability (Albert, 2004).

Arising out of the Rio Earth Summit in 1992, education, public awareness and training are central to progressing sustainable development (Chikondi, 2010). Since then, there has been an inevitable debate within and outside the academic world about the definition of the concept sustainable development, also on how to implement and measure it. However, sustainable development literally refers to maintaining development overtime. The Brandtland report of 1992 defines it as satisfying the needs of the present generation without hindering the satisfaction of the needs of the future generations from an economic point of view. Campbell (2008) defined sustainable development as that development which accomplishes economic growth for the country, and a better income distribution (especially by improving the standard of living of the poor), and a balance between the use and preservation of the environment.

According to Nwaigwe (2016), sustainable development is a systematic utilization of goods and services for the overall development of people in the society. She added that, it is a systematic utilization of goods and services by the community without compromising the needs of future generations. Such development takes into accurate consideration of the needs of the generation to come. In an effort to ensure sustainable development in the countries of the world, education has been recognized as an important tool. Thus, education for sustainability is seen to be interdisciplinary in nature and allow for multiple perspectives. It fosters collaboration across agencies and groups and presumes a lifelong path of learning that extends through all levels of formal education into a variety of non-formal settings. Education for sustainable development is not a new course of study, or new content entirely, but rather, it involves an understanding of how each subject relates to environmental, economic and social issues. The application of education for sustainable development in the formal curriculum in public primary schools in Costa Rica, using Earth Charter material ranging from 2005 to 2014 had been investigated in the available literature. Similarly, the Government of the Republic of Namibia (2002) asserts that integration of Sustainability Education at all levels of society, including Namibian Colleges of education, is one of the ways used to respond to the environmental problems and re-orientate “Namibia’s Education system towards sustainable development.

The notion of sustainable development therefore becomes a curricular issue since education has been recognized as a weapon of change. In Namibia, “Cross-

curricular teaching” is the preferred model for the integration of Sustainable Education (Ministry of Education, 2009) in the existing colleges of education. It is believed that teacher educators should be brought together to contribute to the teaching of Sustainable Education themes through different subjects, just as sustainable development requires all stakeholders to incorporate its principles in core operations of institutions. Kanyimba and Coetzer (2011) advocated for integration of sustainable education in Namibian colleges of education. It was acknowledged that cross-curricular diversification would empower people to take a leading role in responding to environmental problems because it would equip them with the tools needed in solving problems and make wise choices in terms of family development as well as in economic activities.

Through cross-curricular diversification, youths would be well equipped and groomed to face the trials of tomorrow irrespective of the careers they are specifically trained. That is why curriculum remains significant in the life of every learner as an avenue to prepare them for a sustainable future. If the curriculum programmes formulated by the school are innovative and in high demand globally, it would yield more income for the school, scholarship for students and increase teachers’ remuneration (Mbakwem & Ukwuoma, 2016).

Education for sustainable development is an issue which has been demanding more attention in Nigeria since the 21st century. For developing countries like Nigeria to attain a high level of development, Osuji (2004) explained that the issue of sustainable development should be addressed through curriculum innovations and curriculum offerings. He stressed that the innovations occur by diversifying school curriculum to include courses that are predisposing to development issues. They include international relations, civic education and promotion of government economic programmes and environmental issues of protection, preservation and management. Innovative curriculum as: Family Life/HIV-AIDS Education; Civic Education/Citizenship Education; Women (in Development) Education; and Capital Market Studies are paramount as they have been integrated into the existing school subject curricular for general implementation. It is clear that Nigeria, since the beginning of the 21st century, has demonstrated great will towards refocusing education to meet educational goals and objectives for meaningful Economic Development and Poverty Reduction, Scientific and Technological Advancement, Moral and Ethnical Orientation, Teacher Improvement Programmes and Curriculum Enrichment (Alade *et al.*, 2015).

The Nigerian cross-curricular diversification and practices are indeed being used to direct the attention of school personnel to issues of sustainable development, particularly at the tertiary and post-secondary levels of education. While some educational institutions in Nigeria implement courses or subjects fostering sustainable development in isolation to other subject specializations, some other citadel of knowledge infuse most of the identified innovative curricula into the existing subject disciplines. These subjects curricula are implemented as core subjects or/and general studies courses depending on the level of education in Nigeria. In summary, since the implementation of those subjects/courses on cross-curricular basis has been on for quite some time in Nigeria, such diversification and implementation become imperative to examine in this study. This is with a view to

further repositioning the country's sustainable development efforts through Nigerian education using the curriculum as the working medium.

Statement of the Problem

The focus of sustainable development is to provide opportunities for the citizenry to benefit from quality education and learn the values, behaviour and life style required for a sustainable future and for positive societal transformation. This assertion pictures curriculum as a fulcrum for sustainable social, economic and educational development. The reflections of such values and human capacity building and empowerment initiatives exist as cross-curricular themes in Nigerian formal education system, but how far their implementation has thrived over the years is the concern of this study. This empirical paper therefore examines emerging cross-curricular diversification and implementation in Nigerian educational institutions for sustainable development: Teacher educators' perspectives in Ogun State of Nigeria.

Research Questions

The following research questions guided the study:

1. What is the level of teacher educators' awareness of the infusion of innovative curricula in the Nigerian Educational Institutions for sustainable development?
2. What are the challenges facing cross-curricular diversification and general implementation in Nigerian educational institutions for sustainable development?
3. What are the strategies for improved cross-curricular diversification and implementation in Nigeria educational institutions for sustainable development?

MATERIALS AND METHODS

This is a survey research. It helped to appraise the status to which cross-curricular diversification and implementation have thrived for sustainable development without manipulating any variable, but made a quantitative and qualitative interpretation of the already available information and data collected for the study.

The target population of this study consisted of all the secondary school teachers and lecturers of the college of education and the universities located within Ijebu-Ode, Omu-Ijebu and Ago-Iwoye as part of Ogun State. The exact target population of the entire scope of this study could not be obtained within the period of this research due to the current transfer of staff, retirement, voluntary resignation and managerial reasons in some of the government owned educational institutions.

In order to select the sample used for this study, the secondary schools were stratified on local government basis, their locations and year of establishment. The ones located within Ijebu-Ode city and the developing areas (peri-urban) with over fifteen (15) years of establishment were thus sampled for the study. Thereafter, secondary school teachers with fifteen years working experience and above were purposively selected because of their years of experience in the teaching service as professional teachers. Three hundred (300) secondary school teachers thus participated in the study. The only state college of education and the two

universities owned by Ogun State Government were the tertiary institutions purposively sampled for the study. In the College of Education, twenty (20) lecturers with senior status and above were purposively sampled. Thirty five (35) lecturers with doctoral degree and forty-five (45) lecturers also with doctoral degree were selected in each of the two universities captured in the study based on their availability at work and readiness to participate as respondents of the study within their time schedule. The universities are Tai Solarin University of Education, Ijagun, Ijebu-Ode, Ogun State, Nigeria and Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria respectively. In all, four hundred (400) respondents were sampled for this study (300 secondary school teachers and 100 tertiary institutions lecturers) they are all referred to as teacher educators in this study. The instrument used for the study is named Cross-curricular Offerings for Sustainable Development Questionnaire (COSDQ) divided into two sections (A and B) covering bio-data and 35 items in line with the three research questions raised for the study. Three research experts validated the instrument based on the relevance of the items, coverage, phrasing/wording, and language of presentation and the general outlook of the COSDQ.

Upon the administration of thirty copies of the COSDQ outside the scope of the study once, Cronbach Alpha was used to determine its reliability index. A reliability index of 0.85 obtained was considered high enough for the usability of the instrument in this study. The collection of data from the respondents covered about two weeks.

On the ground, the researchers' intention was to collect data on the level of teacher educators' awareness of the infusion of innovative curricula in educational institutions, challenges facing cross-curricular diversification and implementation, and strategies for improvement, descriptive statistics of frequency count and percentage of the responses of the participants were used to present the data analysis and interpretations in this study.

RESULTS

Research Question 1: What is the level of teacher educators' awareness of the infusion of innovative curricula in the Nigerian educational institutions for sustainable development?

Table 1: Teacher Educators' Awareness of the Infusion of Innovative Curricula for Sustainable Development

S/N	Innovative Curricula for Sustainable Development	Awareness	%	Not Awareness	%
1.	Civic Education/Citizenship Education	400	100.0	-----	-----
2.	Environmental Education	395	98.8	05	1.2
3.	Family Life/HIV-AIDS Education	250	62.5	150	37.5
4.	Population Education	150	37.5	250	62.5
5.	Women (in Development)	260	65.0	140	35.0
6.	Education/Girl-Child Education	80	20.0	320	80.0
7.	Capital Market Studies	395	98.8	05	1.2
8.	Computer Education	161	40.3	239	59.7
9.	(Information and Communication Technology)	141	35.3	259	64.7
10.	Basic African Cultural Knowledge	130	32.5	270	67.5
11.	National Values Curriculum –	131	32.8	269	67.2
12.	Moral, Ethical, Spiritual and	81	20.3	319	79.7
13.	Social Awareness	90	22.5	310	77.5
14.	Drug Education	350	87.5	50	12.5
15.	Peace and Human Rights Education	262	65.5	138	34.5
	Nigerian History				
	Safety Awareness				
	Entrepreneurial Studies/Education				
	Vocational Studies				

As shown in Table 1, the level of teacher educators' awareness of the infusion of innovative curricula for sustainable development ranges between 100.0% (highest) and 20.0% (lowest). The awareness of such innovative curricula was high for Civic Education/Citizenship Education (100.0%), Environmental Education (98.8%), Family Life/HIV-AIDS Education (62.5%), Women Education/Girl-Child Education (65.0%), Computer Education/Information and Communication Technology (98.8.0%), Entrepreneurial Studies (87.5%), while their awareness of Peace and Human Rights Education was 32.8%. The less than 50% teacher educators' awareness of the remaining innovative curricula for sustainable development in Nigeria might be due to their different levels of educational institutions where they work and low level of advocacy in their environment. Thus, there was low awareness of teacher educators of population education (37.5%), capital market studies (20.0%), Basic African Cultural Knowledge (40.3%), National Values Curriculum (35.3%), Drug Education (32.5%), Nigerian History (20.3%) and Safety Awareness (22.5%).

Research Question 2: What are the challenges facing cross-curricular diversification and general implementation in Nigerian educational institutions for sustainable development?

Table 2: Challenges Facing Cross-curricular Diversification and General Implementation for Sustainable Development

S/N	Challenges Facing Cross-curricular Diversification and Implementation	Yes	%	No	%
1.	Inadequate human and material resources	220	55.0	180	45.0
2.	Inadequate knowledge of teacher educators to teach cross-curricular theme.	200	50.0	200	50.0
3.	Cross-curricular diversification is time	150	37.5	250	62.5
4.	consuming	250	62.5	150	37.5
5.	Curriculum overloaded	201	50.3	199	49.7
6.	No clear guidelines for cross-curricular	295	73.8	105	26.2
7.	implementation	149	37.3	251	62.7
8.	Lack of adequate interdepartmental collaboration	194	48.5	206	51.5
9.	Non-accommodation of cross-curricular	215	53.8	185	46.2
10.	teaching in time-table.	264	66.0	136	34.0
	Lack of interdisciplinary interest				
	Lack of teacher educators' improvement programmes				
	Structural Curricular problem.				

As presented in Table 2, the challenges facing cross-curricular diversification and general implementation ranges between 73.8% and 37.3%. As a result, it was evident that most of the challenges identified in Table 2 are threats to the cross-curricular diversification and its implementation in Nigerian educational institutions (see the responses in item 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10).

Research Question 3: What are the strategies for improved cross-curricular diversification and implementation in Nigerian educational institutions for sustainable development?

Table 3: Strategies for Improved Cross-curricular Diversification and Implementation for Sustainable Development

Response Grouping	Teacher educators	%
1. Provision of facilities and materials	49	12.3
2. Incorporation of cross-curricular diversification in all subjects	52	13
3. Create more space for cross-curricular diversification in the time table	28	7
4. In-service training for teachers on cross-curricular implementation	45	11.3
5. Regular monitoring and evaluation for quality assurance	52	13
6. Further curriculum enrichment	35	8.8
7. Regular dialogue with stakeholders on cross-curricular diversification	38	9.5
Issues and implementation		
8. Promotion of interdisciplinary networks, linkages and interaction	40	10
9. Vision-building and advocacy	31	7.8
10. Research and Innovation	31	7.5

Table 3 shows the respondents' views on strategies for improved cross-curricular diversification and implementation for sustainable development. In the response grouping, the incorporation of cross-curricular diversification in all subjects (13.0%) and regular monitoring and evaluation for quality assurance (13.0%) have the highest support. They are followed by the need for the provisions of facilities and materials (12.3%), in-service training for teachers and cross-curricula implementation (11.3%) and promotion of interdisciplinary networks, linkages and interaction (10.0%). Others are as shown in the teacher educators' responses in item 3, 6, 7, 9, and 10.

DISCUSSION

The study as presented in table 1 shows the level of teacher educators' awareness of the infusion of innovative curricula in Nigerian educational institutions for sustainable development. The order of awareness was highest for civic education/citizenship education (100.0%) while the list awareness was for capital market studies (20.0%), table 1. Above average percentages were obtained for environmental education (98.8%), family life (HIV/AIDS) education (62.5%), women (in development) education/girl-child education (65.0%), computer education (information and communication education) (98.8%), peace and human rights education (52.8%), entrepreneurial studies/education (87.5%) and vocational studies (65.5%). This makes it evident that teacher educators who participate in curriculum implementation in educational institutions are not completely oblivious of most of the innovative curricula programmes in Nigeria. This is corroborated by Chikondi (2010) who affirmed that public awareness and training are central to progress in sustainable development. As a result, the new reforms and innovations for transforming the citizenry since year 2000 for sustainable development are not completely in the dark to teacher educators.

On the challenges facing cross-curricular diversification and general implementation in Nigeria, inadequate human and material resources (53.0%), inadequate knowledge of teacher educators (50.0%), curriculum overloaded (62.5%), no clear guidelines for cross-curricular implementation (50.3%), lack of adequate interdepartmental collaboration (73.8%), lack of teacher educators improvement programmes (53.8%) and structural curricula problem (66.0%) as found out in this study (table 2) are the threats as responded to by the teacher educators. These challenges quite corroborate the report of Osuji (2004) that despite a number of innovations which Nigerian educational landscape have been witnessing since early year 2000, attention has been drawn to the inhibiting factors affecting effective cross-curricular implementation.

Although, the respondents quite pointed out the critical problems facing cross-curricular diversification and implementation for sustainable development in Nigeria, the findings on the strategies for improvement (table 3) raise high hopes. The incorporation of cross-curricular diversification in all subjects (13.0%) and regular monitoring and evaluation for quality assurance (13.0%) have the highest support. To corroborate this finding, as a weapon of change, in Namibia, cross-curricular teaching is the preferred model for the integration of sustainable education (Ministry of Education, 2009). In addition, the findings of this study did

not overlook the need for provision of facilities and materials (12.5%), create more space for cross-curricular diversification in the time table (7.0%), in-service training for teachers on cross-curricular implementation (11.3%), further curriculum enrichment (8.8%), regular dialogue with stakeholders on cross-curricular diversification issues and implementation (9.5%), promotion of interdisciplinary network, linkages and interaction (10.0%), vision-building and advocacy (7.8%) and research and renovation (7.5%). From the findings of this study, the role of education in the attainment of sustainable development in any nation cannot be overlooked. It is very important to employ the strategies as reported in this study for building sustainable future (Table 3).

In spite of the challenges facing cross-curricular diversification and implementation, the need for the promotion of interdisciplinary networks, linkages and interaction as one of the findings would promote partnership and enable all stakeholders to make concrete contributions aimed at furthering sustainable development. This is also complemented by regular dialogue with stakeholders (items 6, Table 3) supported by the teacher educators. Also, in line with interdisciplinary approach to cross-curricula diversification found out in this study, Sterling (2004) had earlier reiterated that education for sustainable development emphasizes diversity, coherence, interdisciplinarity and also flexibility as well as curriculum empowerment. On the whole, cross-curricular diversification has indeed become a pragmatic sustainable development nexus in the 21st century.

CONCLUSION

This study has empirically examined the emerging cross-curricular diversification and implementation in Nigerian educational institutions for sustainable development with reference to Ogun State in Nigeria. The level of teacher educators' awareness in this study revealed their significant roles on policy ground in curriculum matters, but there are still rooms for a more sensitization of the concerned stakeholders of education for better education delivery. The challenges facing cross-curricular diversification and implementation in Nigeria remain unabated but they are not insurmountable. The strategies supported as found out in this study raise high hopes for sustainable development through cross-curricular diversification in Nigerian education.

RECOMMENDATIONS

The findings of this study informed the following recommendations put forward for prompt action by the stakeholders of education in Nigeria.

1. Sensitization and promotion of interdisciplinary networks, linkages involvement, and interaction of all categories of teacher educators in curriculum matters in Nigeria.
2. Incorporation of cross-curricular diversification in all school subjects.
3. Regular monitoring and evaluation of curricular practices for quality assurance.
4. Regular in-service training for teacher educators on cross-curricular implementation.
5. Regular dialogue with stakeholders on cross-curricular diversification issues and implementation

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