

DUAL-MANDATE IMPLEMENTATION AND SUSTAINABLE DEVELOPMENT COMPETENCIES OF SOCIAL STUDIES PRE-SERVICE TEACHERS IN SOUTH- EAST, NIGERIA

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ABSTRACT: This study investigates the relationship between dual-mandate implementation and sustainable development competencies among Social Studies pre-service teachers and relevant academic-support personnel in selected Colleges of Education in South-East Nigeria. A correlational survey design was used. Five Colleges of Education, comprising three federal and two state owned namely: Federal College of Education, Ofeme-Ohuhu, Abia State; Federal College of Education (Technical), Umunze, Anambra State; Federal College of Education (Technical), Isu, Ebonyi State; Enugu State College of Education (Technical); and Benjamin Uwajumogu College of Education, Ihitte-Uboma, Imo State were studied. The population of the study was 1,380 individuals drawn from students, academic staff non-academic/support staff of the institutions under study. The sample of the study was 500 participants comprising 398 students, 60 teaching staff

and 42 non-teaching staff of the selected colleges were selected using proportionate stratified sampling technique and simple random sampling technique. Data were collected using two researcher-made instruments titled; Dual-Mandate Implementation Scale (DMIS), and Sustainable Development Competencies Scale (SDCS), which were structured around six dimensions of Dual-Mandate implementation namely: curriculum integration, programme coordination, staffing capacity, academic-resource adequacy, digital/instructional infrastructure and quality assurance, and six sustainable development competency domains namely: systems thinking, anticipatory, critical thinking, normative/ethical, strategic/action, and interpersonal/collaborative competence which were analysed using descriptive statistics, Pearson Product-Moment Correlation, one-way ANOVA and multiple regression. Obtained results showed a high figure on Dual-Mandate implementation ($M = 2.99$, $SD = 0.60$) and sustainable development competencies ($M = 3.20$, $SD = 0.52$). Although respondents differed significantly in their perceptions of implementation, $F(2, 497) = 18.77$, $p < .001$, all six implementation dimensions showed positive significant relationships with sustainable development competencies.

Keywords: *dual mandate, sustainable development competencies, Social Studies, pre-service teachers, teacher education.*

The transformation of Colleges of Education in Nigeria through the federal government's Dual Mandate Policy creates an opportunity to examine whether institutional restructuring contributes to the development of competencies required for sustainable development. Before the policy, the expression “dual mandate” was used loosely to describe Colleges of Education that already ran university-affiliated degree programmes. Thus the “dual mandate” within the colleges of education in Nigeria of the era before the government “Dual Mandate Policy” was understood within a framework of an affiliation with a university, a process wherein, while a college runs and awards its NCE programmes, it also runs and awards Bachelor Degrees in Education of the affiliated university (Ekeamadi, 2024), the current legally autonomous “Dual Mandate Policy” — under which a Federal College of Education in Nigeria can award both NCE and its own B.Ed./B.A.Ed./B.Sc.Ed. degrees without university affiliation — is much more recent hence a thorough critique is important.

This evaluation is imperative because education for sustainable development has moved from the margins of educational discourse towards the centre of debates concerning the purpose and quality of teacher education. Contemporary sustainability challenges require educational systems to prepare teachers who can help learners understand complex relationships and participate constructively in addressing societal problems. Consequently, the preparation of teachers for sustainable development is no longer adequately understood as the transmission of information about sustainability. It requires the development of competencies that enable teachers to interpret complex systems, anticipate alternative futures, evaluate values and assumptions, develop action-oriented responses and work collaboratively with diverse stakeholders. It is on the backdrop of this legally autonomous “Dual Mandate Policy” of the Federal College of Education in Nigeria that this study investigates the relationship between implementation of the policy and sustainable development competencies among Social Studies pre-service teachers and relevant academic staff, administrative personnel and other stakeholders in implementing this policy among five selected colleges of education in South-East Nigeria.

Statement of the Problem

Nigeria's contemporary educational challenges extend beyond access to schooling. The country faces interconnected problems involving unemployment, poverty, insecurity, environmental degradation, inequality, social conflict, political instability, population pressure, technological change, and declining quality of educational outcomes. Addressing these problems requires citizens who possess the knowledge, values, skills, and dispositions necessary to understand complex systems, critically evaluate alternative courses of action, collaborate across social differences, anticipate future consequences, and participate responsibly in solving societal problems. Social Studies occupies strategic position in this regard because its curriculum engages directly with individuals, communities, institutions, citizenship, social relationships, resources, culture, governance, and contemporary societal problems. The development of these outcomes requires Social Studies teachers themselves to possess relevant sustainable development competencies.

One of the major challenges to this issue is that conventional teacher preparation may not always provide adequate opportunities for prospective teachers to develop the competencies required for complex and rapidly changing societies. This is so because

knowledge of subject content alone does not necessarily produce teachers capable of systems thinking, anticipating future consequences, critically interrogating social assumptions, collaborating across differences, or designing practical responses to sustainability problems.

Although the Nigerian government may have responded to one of the most critical structural challenges facing teacher education through the introduction of the “Dual Mandate”, nevertheless, an important problem remains. The implementation of an institutional reform does not necessarily translate automatically into improved competencies among its beneficiaries. The Dual Mandate may increase access to degree education without substantially changing the curriculum, teaching practices, assessment procedures, research culture, learning experiences, or community engagement opportunities available to students, the need for curriculum review and harmonisation to ensure that NCE content dovetails effectively into degree-level programmes without unnecessary duplication. During the affiliation era, post-nce students have been reintroduced to majority of the courses they had offered at the NCE level. This is curriculum harmonisation problem which the dual mandate has not addressed yet.

Furthermore, much of the initial discussion surrounding the Dual Mandate has concentrated on institutional issues such as access to university-level education, accreditation, autonomy, staffing, infrastructure, enrolment, funding, and the relationship between NCCE and NUC. These are important concerns, but they do not sufficiently answer the learner-outcome question. Ultimately, the value of teacher-education reform should be reflected in the competencies developed by prospective teachers and, subsequently, in the quality of teaching and learning they provide in schools.

Thus the problem addressed by this study, therefore, is the limited empirical evidence on whether and to what extent implementation of the Dual Mandate is associated with sustainable development competencies among Social Studies pre-service teachers in South-East Nigeria. It becomes necessary to determine whether dimensions of Dual-Mandate implementation are related to the development of competencies that enable future Social Studies teachers to understand complex systems, anticipate future consequences, critically examine social realities, collaborate with others, formulate appropriate responses to societal challenges, and act responsibly toward sustainable development.

Objective of the Study

The objective of the study is to examine the relationship between Dual-Mandate implementation and sustainable development competencies among Social Studies pre-service teachers and relevant academic/support personnel in five selected Colleges of Education in South-East Nigeria, namely: Federal College of Education, Ofeme-Ohuhu, Abia State; Federal College of Education (Technical), Umunze, Anambra State; Federal College of Education (Technical), Isu, Ebonyi State; Enugu State College of Education (Technical); and Benjamin Uwajumogu College of Education, Ihitte-Uboma, Imo State. Specifically, the study seeks to:

1. determine the perceived level of Dual-Mandate implementation in the selected Colleges of Education
2. determine the level of sustainable development competencies among respondents;
3. determine the relationship between curriculum integration and sustainable development competencies
4. determine the relationship between programme coordination and sustainable development competencies
5. determine the relationship between staffing capacity and sustainable development competencies
6. determine the relationship between academic-resource adequacy and sustainable development competencies
7. determine the relationship between digital/instructional infrastructure and sustainable development competencies
8. determine the relationship between quality assurance and sustainable development competencies
9. determine whether respondents differ significantly in their perceptions of Dual-Mandate implementation according to respondent category
10. determine whether the dimensions of Dual-Mandate implementation jointly predict sustainable development competencies.

Research Questions

The following research questions guided the study:

1. What is the perceived level of Dual-Mandate implementation in the selected Colleges of Education?
2. What is the level of sustainable development competencies among the respondents?
3. What relationship exists between curriculum integration and sustainable development competencies?
4. What relationship exists between programme coordination and sustainable development competencies?
5. What relationship exists between staffing capacity and sustainable development competencies?
6. What relationship exists between academic-resource adequacy and sustainable development competencies?
7. What relationship exists between digital/instructional infrastructure and sustainable development competencies?
8. What relationship exists between quality assurance and sustainable development competencies?
9. What difference exists among students, teaching academic staff and non-teaching academic/support staff in their perceptions of Dual-Mandate implementation?
10. To what extent do the dimensions of Dual-Mandate implementation jointly predict sustainable development competencies?

Hypotheses

The following null hypotheses of the study were tested at the .05 level of significance:

H01: There is no significant relationship between curriculum integration and sustainable development competencies of respondents.

H02: There is no significant relationship between programme coordination and sustainable development competencies of respondents.

H03: There is no significant relationship between staffing capacity and sustainable development competencies of respondents.

- H04:** There is no significant relationship between academic-resource adequacy and sustainable development competencies of respondents.
- H05:** There is no significant relationship between digital/instructional infrastructure and sustainable development competencies of respondents.
- H06:** There is no significant relationship between quality assurance and sustainable development competencies of respondents.
- H07:** There is no significant difference among students, teaching academic staff and non-teaching academic/support staff in their perceptions of Dual-Mandate implementation.
- H08:** The dimensions of Dual-Mandate implementation do not significantly jointly predict sustainable development competencies.

Conceptual Framework

The Dual-Mandate Policy of the Colleges of Education in Nigeria

The dual mandate policy of colleges of education in Nigeria refers to the policy statement that empowers colleges of education in Nigeria to run and award degree programmes while also running the NCE (Ekeamadi, 2024). The legal foundation for this transformation is the Federal Colleges of Education Act, 2023. The Act empowered 15 Federal Colleges of Education to independently award approved Bachelor's degrees in Education while continuing to offer the NCE. The National Commission for Colleges of Education (NCCE) describes this arrangement as the concurrent running of NCE and Bachelor's degree programmes within Federal Colleges of Education, thereby creating what has become known as the Dual Mandate. The policy was operationalised through collaboration between the National Commission for Colleges of Education (NCCE) and the National Universities Commission (NUC), with implementation discussions formally advanced in August 2024 and the first approved group of Federal Colleges of Education commencing the autonomous NCE–degree model from the 2025/2026 academic session.” Initially, the mandate was for the following federal colleges of education; Federal College of Education, Yola, Federal College of Education, Obudu, Federal College of Education, Katsina, Federal College of Education, Eha-Amufu, Federal College of Education, Abeokuta, Federal College of Education, Okene, Federal College of Education (Technical), Bichi, Federal College of Education (Technical), Potiskum, Federal College of Education (Technical), Akoka, Federal College of Education (Technical), Omoku, Federal College of Education

(Technical), Asaba, Federal College of Education (Technical), Umunze, Federal College of Education (Technical), Gombe, Federal College of Education (Technical), Gusau, and Federal College of Education (Special), Oyo, however, the mandate has expanded to include even the state owned and private colleges of education.

Thus while the dual mandate policy derived its legal foundation from the Federal Colleges of Education Act, 2023, its expansion was derived from the federal government's subsequent incorporation of the Dual Mandate into its broader education reform agenda which it refereed to as "Education Roadmap 2024–2027" that identifies the expansion of access through a dual-mode arrangement in which colleges of education can offer both NCE and B.Ed. programmes, alongside reforms aimed at improving teacher education standards, wherein the NCCE confirms that the policy is intended to enable qualified colleges of education to award both NCE and Bachelor's degrees concurrently, subject to accreditation requirements, with the broader objectives of expanding access, improving teacher quality, and strengthening the capacity of colleges of education. Under this, colleges of education, from ten years of establishment and above, whether federal, state or private, can implement the dual mandate programme with subject to accreditation and approval from both NCCE and NUC.

Historically, colleges of education in Nigeria were primarily associated with the provision of the Nigeria Certificate in Education (NCE), which constituted a major pathway for preparing teachers for the education system. Although some colleges of education subsequently participated in degree provision through affiliations with universities, such arrangements did not give the colleges full autonomy over degree-awarding programmes. The introduction of the "Dual Mandate" thus represents a major structural transformation because eligible colleges of education can now operate NCE and approved Bachelor's degree programmes in education within the same institutional framework.

The operationalisation of the reform became particularly prominent in 2024. On 13 August 2024, the NCCE and National Universities Commission (NUC) formally discussed the commencement of the Dual Mandate. This reform is therefore potentially significant for the preparation of Social Studies teachers. A degree-oriented teacher education environment could provide greater opportunities for advanced disciplinary knowledge, educational research, reflective practice, curriculum development, critical inquiry,

interdisciplinary learning, and engagement with contemporary issues. These are all potentially relevant to sustainable development competencies. Higher education institutions have been identified as important sites for developing sustainability competencies because they can combine teaching, research, innovation, and community engagement in ways that prepare students to respond to complex societal challenges (Crespo-Martín, et al. (2025)).

Dual-mandate Implementation and Sustainable Development Competency in Social Studies

Education is regarded as one of the most important instruments for achieving sustainable development because it equips individuals with the knowledge, skills, values, attitudes, and dispositions required to respond effectively to complex social, economic, political, cultural, and environmental challenges. The contemporary understanding of sustainable development therefore extends beyond economic growth to include social justice, environmental responsibility, peace, equity, democratic participation, responsible citizenship, and the capacity of individuals and institutions to make decisions that consider both present and future generations. Within this context, teacher education occupies a strategic position because teachers are central actors in translating national and international educational aspirations into classroom experiences and learner outcomes. According to Ojedokun (2024), one of the central reasons for the dual mandate policy is to create a wider access to quality education, and there is no quality education if there is no quality teachers, this invariably proves what the former Minister of Education, Prof. Bab Fafunwa once said that “no nation can rise above the quality of its teachers”. The quality of teachers consequently has implications not only for academic achievement but also for the development of citizens capable of contributing to sustainable societies.

The significance of teacher education is particularly evident in Social Studies. Social Studies is inherently concerned with the relationship between individuals and their social, political, economic, cultural, and physical environments. Its broad educational purposes include developing responsible citizenship, social awareness, critical thinking, problem-solving, democratic participation, appreciation of diversity, and the capacity to understand and respond to social problems. Consequently, Social Studies teacher education provides an appropriate context for developing competencies associated with sustainable development. Ojedokun (2024), for example, argued that Social Studies teacher education

in Nigeria provides an important platform for integrating education for sustainability and preparing prospective teachers to address contemporary societal challenges.

Similarly, research on Social Studies teacher education has increasingly emphasized interdisciplinary and issues-centred approaches capable of preparing prospective teachers to engage learners with complex local and global sustainability problems. This places attention on teacher competency. Thus the emphasis on competencies represents an important shift from an education system that concentrates predominantly on the transmission of factual knowledge to one that prepares learners to understand complexity and act responsibly. Rieckmann, et al, (2017) identifies systems thinking, anticipatory, normative, strategic, collaboration, critical thinking, self-awareness, and integrated problem-solving competencies as important cross-cutting competencies for sustainable development.

These competencies enable learners to understand relationships among social, economic, political, and environmental processes; anticipate alternative futures; critically evaluate values and assumptions; collaborate with others; and formulate and implement solutions to complex problems. Brundiers et al. (2021) similarly conceptualised sustainability competencies as an important component of higher education because sustainable development requires individuals who can combine disciplinary knowledge with the ability to analyse complex situations, envision desirable futures, collaborate across differences, and initiate transformative action. The development of such competencies among prospective teachers depends substantially on the quality and structure of teacher education institutions. This makes recent reforms in Nigeria's Colleges of Education particularly important because the existence of the Dual Mandate does not automatically guarantee the development of sustainable development competencies.

Institutional restructuring can create opportunities, but the extent to which those opportunities translate into desirable student outcomes depends on curriculum implementation, staff competence, instructional practices, learning resources, research opportunities, institutional leadership, assessment practices, and opportunities for community engagement. Redman and Wiek (2021) emphasize that sustainability-oriented competencies require educational environments capable of developing not only disciplinary knowledge but also systems thinking, anticipatory thinking, strategic action,

collaboration, critical thinking, and the capacity to participate in sustainability transformations. This issue is particularly relevant in South-East Nigeria, where colleges of education constitute important institutions for teacher preparation.

The region has a strong tradition of teacher education, and its colleges of education serve large populations of prospective teachers who will subsequently teach in primary and secondary schools. Consequently, the introduction of the Dual Mandate raises an important empirical question: Does the implementation of the reform correspond with stronger sustainable development competencies among Social Studies pre-service teachers? While policy documents articulate institutional and access-related objectives, there remains a need to investigate whether the reform is associated with competencies that future teachers require to educate learners for sustainable development. It is this gap that provides the rationale for examining the relationship between Dual-Mandate implementation and sustainable development competencies among Social Studies pre-service teachers in South-East Nigeria.

Theoretical Framework

The study is primarily anchored in Institutional Theory as propounded by Meyer and Rowan in (1977). This theory is concerned with how organisations respond to regulatory expectations, professional norms and environmental pressures and how formal structures become embedded within organisational practice. Because the Dual-Mandate implementation represents an institutional restructuring process, the theory is relevant to this study.

In the context, the Dual Mandate policy creates new regulatory and organisational expectations. Colleges are required to operate programmes, develop curricula, provide qualified personnel, maintain appropriate infrastructure and comply with accreditation and quality-assurance requirements carried out by a more higher level of education. The effectiveness of implementation therefore depends not merely on the formal existence of the policy but on the extent to which institutional structures and practices become aligned with these reforms. This perspective is particularly appropriate because NCCE's current implementation approach emphasises programme approval, accreditation, quality assurance and institutional capacity.

The the theoretical proposition underlying the study is that the effective institutional implementation of the Dual Mandate will lead to enhanced teacher-education environment, improved opportunities for sustainability-oriented learning, and stronger sustainable development competencies within the institutions. This framework therefore treats Dual-Mandate implementation as an institutional condition rather than as an educational outcome in itself.

Methodology

The study adopted a correlational survey design. The design was considered appropriate because the study sought to determine the perceived level of Dual-Mandate implementation, assess sustainable development competencies and establish the relationships between dimensions of Dual-Mandate implementation and sustainable development competencies of Social Studies pre-service teachers in college of education under the dual mandate programme.

The design permitted comparison of perceptions among the three respondent categories included in the study: students, academic staff and non-teaching staff. In addition, multiple regression was used to determine the joint contribution of the six dimensions of Dual-Mandate implementation to sustainable development competencies. The correlational nature of the study is important because relationships identified among variables were interpreted as evidence of direct causation.

Area of the Study

The study was conducted in South-East Nigeria. The study sites comprised five institutions representing the five states of the South-East geopolitical zone. The selection was intended to provide institutional coverage across the zone and permit examination of Dual-Mandate implementation within different College of Education contexts. The institutions represented in the study were Ofeme-Ohuhu, Umuze, Isu, Enugu and Benjamin Uwajumogu. The study focused specifically on Social Studies teacher education and the institutional conditions relevant to the implementation of the Dual Mandate.

Population of the Study

The population is a total of 1,380 individuals which consisted of Social Studies pre-service teachers, teaching academic staff and non-teaching academic/support staff in the selected Colleges of Education.

Sample and Sampling Procedure

A multistage stratified sampling technique was used for the study. The first stage involved the selection of the five institutions of the study, within the institutions, 100 participants each were selected from the five colleges of the study, making a total of 500 participants in all. From this number, a total of 398 students, 60 teaching staff, and 42 non-teaching staff were sampled. (see table for sample of the study)

Table 1: Sample of the Study

Institution	Students	Teaching staff	Non-teaching staff	Total
FCE Ofeme-Ohuhu, Abia State.	80	12	8	100
FCE (Technical), Umunze, Anambra	80	11	9	100
FCE (Technical), Isu, Ebonyi	79	13	8	100
Enugu State COE (Technical)	79	12	9	100
Benjamin Uwajumogu COE, Imo	80	12	8	100
Total	398	60	42	500

Instruments for Data Collection

The study made use of two researcher-made instruments titled; Dual-Mandate Implementation Scale (DMIS); and Sustainable Development Competencies Scale (SDCS). While the DMIS was structured to evaluate the six dimensions of institutional implementation of the dual mandate programme which included the following; curriculum integration, programme coordination, staffing capacity, academic resources, digital/instructional infrastructure and quality assurance. The SDCS contained 36 items distributed across the six competency domains. Each competency domain contained six items. Responses were rated on a four-point scale: 4 = Very High Competence, 3 = High Competence, 2 = Low Competence, and 1 = Very Low Competence

Reliability of the Instruments

A pilot test of 50 respondents from a comparable College of Education outside the five selected institutions was carried. The pilot respondents did not participate in the main study. A Cronbach's alpha reliability coefficient at .70 was used.

Ethical Considerations

Ethical approval and institutional permission were obtained data collection. Participation was voluntary, and respondents received information concerning the purpose of the study and their right to decline participation. No respondent was required to provide identifying information through the research instrument. Data were securely stored and used exclusively for research purposes.

Method of Data Analysis

Data were analysed using SPSS statistical package. Research Question 1 and 2 were answered using mean and standard deviation, Research Questions 3–8 were answered using Pearson Product-Moment Correlation and Research Question 9 was answered using one-way Analysis of Variance (ANOVA). Where the omnibus ANOVA was significant, Tukey's HSD post-hoc procedure was used to identify the specific group differences. Research Question 10 was answered using multiple regression to determine the joint predictive contribution of the six Dual-Mandate dimensions. The regression model is specified thus:

$$\text{SDC} = \beta_0 + \beta_1\text{CI} + \beta_2\text{PC} + \beta_3\text{SC} + \beta_4\text{ARA} + \beta_5\text{DII} + \beta_6\text{QA} + \varepsilon$$

Where:

- SDC = sustainable development competencies;
- CI = curriculum integration;
- PC = programme coordination;
- SC = staffing capacity;
- ARA = academic-resource adequacy;
- DII = digital/instructional infrastructure; and
- QA = quality assurance.

The hypotheses were tested at $\alpha = .05$.

Results

Research Question One: What is the perceived level of Dual-Mandate implementation in the selected Colleges of Education?

Table 4: Perceived Level of Dual-Mandate Implementation

Dimension	N	Mean	SD	Decision
Curriculum integration	500	3.18	0.54	High
Programme coordination	500	3.05	0.59	High
Staffing capacity	500	2.86	0.63	High
Academic-resource adequacy	500	2.91	0.61	High
Digital/instructional infrastructure	500	2.78	0.68	High
Quality assurance	500	3.14	0.55	High
Overall	500	2.99	0.60	High

Decision rule: 3.50–4.00 = Very High; 2.50–3.49 = High; 1.50–2.49 = Low; 1.00–1.49 = Very Low.

Interpretation: Table indicate an overall mean of 2.99, corresponding to a high level of perceived Dual-Mandate implementation. Curriculum integration recorded the highest mean ($M = 3.18$), followed by quality assurance ($M = 3.14$). Digital/instructional infrastructure recorded the lowest mean ($M = 2.78$). Thus, within the supplied values, respondents perceived curriculum integration relatively more favourably than digital/instructional infrastructure.

Research Question Two: What is the level of sustainable development competencies among the respondents?

Table 5: Sustainable Development Competencies of Respondents

Competency	N	Mean	SD	Decision
Systems thinking	500	3.24	0.51	High
Anticipatory competence	500	3.08	0.57	High
Critical thinking	500	3.31	0.49	High
Normative/ethical competence	500	3.27	0.50	High
Strategic/action competence	500	2.96	0.60	High
Interpersonal/collaborative competence	500	3.35	0.47	High
Overall	500	3.20	0.52	High

Interpretation: Table 5 indicate an overall mean of 3.20, corresponding to a high level of sustainable development competencies. Interpersonal/collaborative competence recorded

the highest mean ($M = 3.35$), followed by critical thinking ($M = 3.31$), while strategic/action competence recorded the lowest mean ($M = 2.96$).

Research Question Three: What relationship exists between curriculum integration and sustainable development competencies?

Table 6: Relationship Between Curriculum Integration and Sustainable Development Competencies

Variable	N	r	p-value	Decision
Curriculum integration	500	0.480	< .001	Significant
Sustainable development competencies	500	—	—	—

The above values indicate a positive and statistically significant relationship between curriculum integration and sustainable development competencies, $r(498) = .480$, $p < .001$. This indicates that higher reported curriculum integration was associated with higher reported sustainable development competencies within the supplied analysis.

Decision on H01: The null hypothesis is rejected.

Research Questions Four to Eight: What relationships exist between the dimensions of Dual-Mandate implementation and sustainable development competencies?

Table 7: Correlations Between Dimensions of Dual-Mandate Implementation and Sustainable Development Competencies

Predictor	r	p-value	Decision
Curriculum integration	0.480	< .001	Significant
Programme coordination	0.440	< .001	Significant
Staffing capacity	0.390	< .001	Significant
Academic-resource adequacy	0.460	< .001	Significant
Digital/instructional infrastructure	0.420	< .001	Significant
Quality assurance	0.500	< .001	Significant

The above table shows positive statistically significant relationships between all six dimensions of Dual-Mandate implementation and sustainable development competencies. Quality assurance recorded the largest correlation ($r = .500$), followed by curriculum integration ($r = .480$) and academic-resource adequacy ($r = .460$). Staffing capacity

recorded the smallest correlation ($r = .390$), although the relationship remained statistically significant. Accordingly, the results lead to rejection of H02, H03, H04, H05 and H06.

Research Question Nine: What difference exists among students, teaching academic staff and non-teaching academic/support staff in their perceptions of Dual-Mandate implementation?

Table 8: Difference in Perceived Dual-Mandate Implementation by Respondent

Respondent category	N	Mean	SD
Students	398	3.05	0.48
Teaching academic staff	60	3.31	0.41
Non-teaching academic/support staff	42	3.43	0.39
Overall	500	3.11	0.47

ANOVA: $F(2, 497) = 18.77, p < .001$.

The ANOVA result indicates a statistically significant difference in perceptions of Dual-Mandate implementation across the three respondent categories. Non-teaching academic/support staff had a mean of 3.43, teaching academic staff had a mean of 3.31, and students had a mean of 3.05. Because the ANOVA result is omnibus, a Tukey HSD was conducted as shown in table 8a below:

Table 8a: Tukey HSD Post-Hoc Comparisons of Respondents' Perceptions of Dual-Mandate Implementation

(I) Respondent category	(J) Respondent category	Mean Difference (I-J)	SE	Tukey q	p-value	95% CI for Mean Difference	Decision
Students	Teaching academic staff	-0.260	0.046	5.706	< .001	[-0.411, -0.109]	Significant
Students	Non-teaching academic/support staff	-0.380	0.053	7.118	< .001	[-0.557, -0.203]	Significant
Teaching academic staff	Non-teaching academic/support staff	-0.120	0.066	1.813	.406	[-0.340, 0.100]	Not significant

Note. $N = 500$; error degrees of freedom = 497; Mean Square Error (MSE) = 0.217. Tukey–Kramer adjustment was used because the respondent groups have unequal sample sizes.

Interpretation: The Tukey HSD post-hoc analysis indicates that the significant omnibus ANOVA result is attributable to two specific group differences. First, students reported significantly lower perceptions of Dual-Mandate implementation than teaching academic staff. Students had a mean of 3.05, compared with 3.31 for teaching academic staff, producing a mean difference of -0.260, $p < .001$. The 95% confidence interval did not contain zero [-0.411, -0.109], confirming that the difference was statistically significant. Second, students also reported significantly lower perceptions than non-teaching academic/support staff. The mean difference was -0.380, $p < .001$, with a 95% confidence interval of [-0.557, -0.203]. Thus, non-teaching academic/support staff perceived Dual-Mandate implementation more favourably than students. However, the difference between teaching academic staff and non-teaching academic/support staff was not statistically significant. Their mean difference was -0.120, $p = .406$, and the 95% confidence interval [-0.340, 0.100] included zero. The significant ANOVA result, $F(2, 497) = 18.77$, $p < .001$, is therefore explained primarily by the lower perception of Dual-Mandate implementation among students compared with both categories of staff.

H07: There is no significant difference among students, teaching academic staff and non-teaching academic/support staff in their perceptions of Dual-Mandate implementation.

The omnibus ANOVA was significant, $F(2, 497) = 18.77$, $p < .001$. The Tukey HSD test further established significant differences between students and teaching academic staff and between students and non-teaching academic/support staff, while the difference between the two staff groups was not significant. H07 null hypothesis is rejected.

Research Question Ten: To what extent do the dimensions of Dual-Mandate implementation jointly predict sustainable development competencies?

Table 9: Multiple Regression of Sustainable Development Competencies on Dimensions of Dual-Mandate Implementation

Predictor	B	SE B	β	t	p	VIF
Constant	1.02	0.18	—	5.67	< .001	—
Curriculum integration	0.24	0.04	0.24	6.00	< .001	1.72
Programme coordination	0.12	0.04	0.12	3.00	.003	1.58
Staffing capacity	0.09	0.04	0.09	2.25	.025	1.64
Academic-resource adequacy	0.18	0.04	0.18	4.50	< .001	1.83
Digital/instructional infrastructure	0.11	0.04	0.11	2.75	.006	1.76
Quality assurance	0.22	0.04	0.22	5.50	< .001	1.91

Model summary: $R = .721$; $R^2 = .520$; Adjusted $R^2 = .514$; $F(6, 493) = 89.01$, $p < .001$.

The result of the regression indicate that the six dimensions jointly accounted for approximately 52.0% of the variance in sustainable development competencies. The overall regression model was statistically significant, $F(6, 493) = 89.01, p < .001$. All six predictors made statistically significant contributions in the model. Curriculum integration had $\beta = .24$, quality assurance $\beta = .22$, academic-resource adequacy $\beta = .18$, programme coordination $\beta = .12$, digital/instructional infrastructure $\beta = .11$ and staffing capacity $\beta = .09$. The VIF values ranged from 1.58 to 1.91, indicating no problematic multicollinearity among the predictors according to the analytical framework.

Decision on H08: The null hypothesis is rejected.

Discussion of Findings

The findings presented in Table 4 indicate a high perceived level of Dual-Mandate implementation across the five Colleges of Education, with an overall mean of 2.99 and standard deviation of 0.60. All six dimensions of implementation recorded mean scores within the high category. Curriculum integration recorded the highest mean ($M = 3.18, SD = 0.54$), followed by quality assurance ($M = 3.14, SD = 0.55$) and programme coordination ($M = 3.05, SD = 0.59$). Academic-resource adequacy recorded a mean of 2.91 ($SD = 0.61$), staffing capacity recorded 2.86 ($SD = 0.63$), while digital/instructional infrastructure recorded the lowest mean of 2.78 ($SD = 0.68$). The relatively high rating for curriculum integration suggests that the implementation of the Dual Mandate is perceived to have made progress in incorporating the requirements of the reform into academic programmes. This is important because the educational significance of a structural reform depends partly on how its requirements are translated into curriculum content, teaching activities and learning experiences. The finding is consistent with Zong's (2022) emphasis on issue-centred and interdisciplinary approaches in Social Studies teacher education as mechanisms through which sustainability-oriented learning can be developed.

The lower rating for digital/instructional infrastructure is noteworthy. Although the dimension still falls within the high category, its mean of 2.78 is the lowest among the six implementation dimensions. This suggests that technological and instructional facilities may not have progressed to the same perceived level as curriculum integration. Digital and instructional infrastructure provides important support for access to information,

instructional materials, collaborative learning and technology-enhanced teaching. Consequently, limitations in this area could constrain the extent to which curriculum reforms are translated into varied and contemporary learning experiences. The high rating for quality assurance ($M = 3.14$) also indicates that respondents perceived relatively strong attention to monitoring and maintaining academic standards. Quality assurance is particularly relevant to Dual-Mandate implementation because institutional expansion and programme diversification require mechanisms for maintaining standards. Where monitoring and evaluation are systematically applied, institutions may be better positioned to identify implementation gaps and improve programme delivery.

Table 5 further shows that respondents recorded a high overall level of sustainable development competencies, with an overall mean of 3.20 and standard deviation of 0.52. All six competency domains were rated high. Interpersonal/collaborative competence recorded the highest mean ($M = 3.35$, $SD = 0.47$), followed by critical thinking ($M = 3.31$, $SD = 0.49$) and normative/ethical competence ($M = 3.27$, $SD = 0.50$). Systems thinking recorded a mean of 3.24 ($SD = 0.51$), anticipatory competence 3.08 ($SD = 0.57$), while strategic/action competence recorded the lowest mean of 2.96 ($SD = 0.60$). The relatively high rating for interpersonal/collaborative competence indicates that respondents perceived considerable capacity for cooperation, communication and collaborative engagement. This is relevant to Social Studies teacher education because sustainability challenges frequently involve social interaction, negotiation and collective problem-solving. The high rating for critical thinking likewise indicates perceived capacity to examine issues, consider evidence and engage with complex social problems. Strategic/action competence, although still rated high, recorded the lowest mean of 2.96. This difference may suggest that translating knowledge, values and critical understanding into concrete sustainability-oriented action represents a more demanding aspect of competence development. Manasia et al. (2020) identified professional knowledge, practice and engagement as important dimensions of teachers' readiness for Education for Sustainable Development. The present pattern therefore reinforces the importance of moving beyond knowledge acquisition towards opportunities through which pre-service teachers can practise planning, decision-making, implementation and problem-solving.

Table 6 shows a positive and statistically significant relationship between curriculum integration and sustainable development competencies, $r = .480$, $p < .001$. The null hypothesis was therefore rejected. The result indicates that higher levels of perceived curriculum integration were associated with higher levels of sustainable development competencies. This suggests that where sustainability-related issues, knowledge, values and competencies are more effectively incorporated into teacher-education programmes, respondents may also report stronger sustainable development competencies. The finding is consistent with Zong (2022), whose work highlights the relevance of issue-centred and interdisciplinary approaches in Social Studies teacher education. Social Studies provides an important context for linking social, economic, environmental and civic issues. Effective curriculum integration can therefore create opportunities for pre-service teachers to examine sustainability challenges from multiple perspectives rather than treating them as isolated topics.

However, the correlation coefficient of .480 should be interpreted as evidence of association rather than causation. The result does not establish that curriculum integration independently causes higher sustainable development competencies. Other institutional, pedagogical and individual factors may also contribute to the observed relationship.

The findings in Table 7 indicate that all six dimensions of Dual-Mandate implementation were positively and significantly related to sustainable development competencies. Curriculum integration recorded $r = .480$, programme coordination $r = .440$, staffing capacity $r = .390$, academic-resource adequacy $r = .460$, digital/instructional infrastructure $r = .420$, and quality assurance $r = .500$. All relationships were statistically significant at $p < .001$. Quality assurance recorded the strongest correlation with sustainable development competencies ($r = .500$). This suggests that effective monitoring, evaluation and maintenance of academic standards may be particularly relevant to the institutional conditions associated with competency development. The finding gives importance to quality assurance as more than a regulatory activity; it may also provide a mechanism for ensuring that programme implementation remains focused on intended educational outcomes. Curriculum integration recorded the second strongest relationship ($r = .480$), reinforcing the importance of curriculum arrangements in creating opportunities for sustainability-oriented learning. Academic-resource adequacy also showed a relatively

strong positive relationship ($r = .460$), suggesting that learning materials, research resources and other academic facilities may contribute to an environment supportive of competence development. Programme coordination and digital/instructional infrastructure recorded correlations of .440 and .420 respectively. These findings suggest that institutional coordination and technological support are also relevant dimensions of the implementation environment. Staffing capacity recorded the lowest correlation ($r = .390$), although the relationship remained positive and statistically significant. Taken together, the results indicate that sustainable development competencies are associated with multiple dimensions of institutional implementation rather than with one institutional condition alone. This supports an understanding of the Dual Mandate as a comprehensive institutional reform requiring coordinated attention to curriculum, personnel, resources, infrastructure and quality assurance. Nevertheless, because the analysis is correlational, the findings should not be interpreted as demonstrating causal effects. The relationships indicate statistical association between the variables but do not establish the direction or mechanism of causality.

The significant difference among respondent categories in table 8 indicates that perceptions of Dual-Mandate implementation are not uniform across the institution. Students reported the lowest perception ($M = 3.05$), whereas teaching academic staff ($M = 3.31$) and non-teaching academic/support staff ($M = 3.43$) reported higher perceptions. The Tukey HSD analysis provides greater precision than the omnibus ANOVA by demonstrating that students differed significantly from both teaching academic staff and non-teaching academic/support staff, whereas the two staff categories did not differ significantly from each other.

This pattern may reflect differences in institutional exposure. Teaching and non-teaching staff are directly involved in the administrative and operational processes through which the Dual Mandate is implemented. Students, however, encounter the reform primarily through their classroom experiences, availability of learning resources, programme organisation, assessment and access to academic facilities. Consequently, staff may perceive institutional implementation more positively because they have greater knowledge of policy processes and institutional changes, while students may judge implementation more directly from the quality of services and learning experiences

available to them. The result has an important institutional implication. A high staff perception of implementation should not automatically be interpreted as evidence that students are experiencing the reform to the same degree. The significant student–staff differences suggest the need for Colleges of Education to establish mechanisms through which students' experiences are incorporated into Dual-Mandate monitoring and quality assurance.

The multiple regression results in Table 9 indicate that the six dimensions of Dual-Mandate implementation jointly accounted for 52.0% of the variance in sustainable development competencies, with $R = .721$, $R^2 = .520$ and adjusted $R^2 = .514$. The overall regression model was statistically significant, $F(6, 493) = 89.01$, $p < .001$. All six predictors made statistically significant contributions to the model. Curriculum integration recorded the largest standardised coefficient ($\beta = .24$, $p < .001$), followed by quality assurance ($\beta = .22$, $p < .001$), academic-resource adequacy ($\beta = .18$, $p < .001$), programme coordination ($\beta = .12$, $p = .003$), digital/instructional infrastructure ($\beta = .11$, $p = .006$), and staffing capacity ($\beta = .09$, $p = .025$).

The regression result indicates that the six dimensions collectively provide a substantial statistical explanation of variation in sustainable development competencies within the supplied analysis. The result is particularly important because it shows that the institutional dimensions should not necessarily be considered independently. Curriculum integration, programme coordination, staffing, resources, digital infrastructure and quality assurance operate as interconnected elements of institutional implementation. The VIF values ranged from 1.58 to 1.91, indicating that there was no problematic multicollinearity among the predictors in the supplied model. The remaining 48.0% of unexplained variance also indicates that other factors may contribute to sustainable development competencies. The institutional implementation variables therefore represent an important part, but not the entirety, of the competency-development context. The finding concerning curriculum integration is also consistent with Zong (2022), particularly regarding the importance of educational approaches that connect social issues and interdisciplinary learning. The significance of action-oriented competence further supports the relevance of approaches that enable learners to move from understanding sustainability issues towards practical engagement.

Overall, the findings suggest that Dual-Mandate implementation should be viewed as an institutional environment whose different components work together to support teacher preparation for sustainability. However, the statistical relationships should not be interpreted as causal effects.

Contribution to Knowledge

The study contributes to knowledge in several ways.

First, it connects the implementation of the Dual Mandate in Nigerian Colleges of Education with sustainable development competencies among Social Studies pre-service teachers. This brings together institutional reform and competence-oriented teacher education within a single analytical framework.

Second, the study shifts attention from the mere existence of the Dual Mandate to the quality and dimensions of its implementation. By examining curriculum integration, programme coordination, staffing capacity, academic-resource adequacy, digital/instructional infrastructure and quality assurance, the study provides a multidimensional framework for examining implementation.

Third, the study focuses specifically on Social Studies pre-service teachers. This is significant because Social Studies teacher education provides an important context for preparing future teachers to engage with social, ethical, civic and sustainability-related issues.

Fourth, the study adopts a multi-informant perspective involving students, teaching academic staff and non-teaching academic/support staff. This approach reduces exclusive dependence on a single respondent category and recognises that institutional reforms may be experienced differently by different members of the educational community. This is consistent with concerns identified in the recent ESD literature regarding dependence on single-source self-report approaches (Vidal & Kuckuck, 2025).

Finally, the study provides an analytical framework through which institutional implementation dimensions can be examined in relation to the six dimensions of sustainable development competencies: systems thinking, anticipatory, critical thinking, normative/ethical, strategic/action and interpersonal/collaborative competence.

Conclusion

The study examined Dual-Mandate implementation and sustainable development competencies among Social Studies pre-service teachers in Colleges of Education in South-East Nigeria. The analytical results indicate a high perceived level of Dual-Mandate implementation, with an overall mean of 2.99, and a high level of sustainable development competencies, with an overall mean of 3.20. The six dimensions of implementation were positively associated with sustainable development competencies. Quality assurance recorded the strongest bivariate relationship, while staffing capacity recorded the weakest, although all six relationships were statistically significant. The regression analysis further indicated that the six implementation dimensions jointly accounted for 52.0% of the variance in sustainable development competencies in the supplied analysis.

The results also indicate differences in perceptions among students, teaching academic staff and non-teaching academic/support staff. These differences demonstrate the importance of considering multiple institutional perspectives when evaluating the implementation of educational reforms. The central implication is that the Dual Mandate should not be understood solely as a structural arrangement involving the coexistence of NCE and degree programmes. Its educational significance also depends on the quality of curriculum integration, programme coordination, staffing, academic resources, digital infrastructure and quality assurance. The relatively lower rating for digital/instructional infrastructure and the comparatively lower rating for strategic/action competence point to areas requiring particular institutional attention. Strengthening these areas may provide greater opportunities for translating sustainability knowledge and values into practical competence.

Implications of the Study

This study has several implications which are discussed as follows:

Policy Implications: The findings have implications for teacher-education policy and regulatory practice. NCCE should consider incorporating measurable sustainability-competency indicators into quality-assurance and monitoring frameworks for Colleges of Education operating under the Dual Mandate. Such indicators should extend beyond institutional inputs to consider whether pre-service teachers are developing competencies

in systems thinking, critical thinking, ethical reasoning, collaboration, anticipation and action (Brandt, et al., 2019).

Curriculum Implications: The high rating for curriculum integration and its positive relationship with sustainable development competencies indicate the importance of strengthening sustainability-oriented curriculum arrangements. The integration of NCE and degree-level teacher education provides an opportunity to embed sustainability across Social Studies teacher education rather than treating sustainable development as an isolated topic. Curriculum arrangements should create opportunities for learners to examine interconnected social issues and develop knowledge, values and practical competencies. This direction is consistent with Zong (2022), particularly the relevance of issue-centred and interdisciplinary approaches to Social Studies teacher education.

Institutional Implications: The findings indicate that institutional implementation involves several interconnected dimensions. College management should therefore give attention to:

- adequate staffing capacity;
- current academic and instructional resources;
- digital and instructional infrastructure;
- effective programme coordination;
- continuous professional development;
- interdisciplinary collaboration;
- sustainability-oriented research; and
- effective quality assurance.

The comparatively lower rating for digital/instructional infrastructure provides particular justification for strengthening technology-supported learning facilities.

Pedagogical Implications: Social Studies teacher educators should provide learning experiences that enable pre-service teachers to apply sustainability knowledge in practical situations. These may include:

- inquiry learning;
- problem-based learning;
- community-based projects;
- sustainability case studies;
- debates and deliberation;
- current-affairs analysis;
- simulations;
- collaborative projects; and
- field-based learning.

These approaches can provide opportunities for developing not only knowledge and critical thinking but also interpersonal, strategic and action-oriented competencies. Zong (2022) similarly demonstrated the value of issue-centred and deliberative approaches in Social Studies teacher education.

Limitations

The study has several limitations.

First, the correlational design limits causal interpretation. Although significant relationships were identified between Dual-Mandate implementation and sustainable development competencies, the design cannot establish that implementation directly causes changes in competencies.

Second, the study focused on five Colleges of Education in South-East Nigeria. Consequently, the findings should not automatically be generalised to all Colleges of Education in Nigeria.

Recommendations

Based on the findings of the study and its limitations, the following recommendations are made:

1. Colleges of Education should strengthen the integration of sustainable development competencies across Social Studies teacher-education curricula.
2. NCCE should incorporate measurable sustainability-competency indicators into the monitoring and quality-assurance framework for the Dual Mandate.
3. Institutional management should provide continuous professional development for teaching academic staff in Education for Sustainable Development, interdisciplinary teaching, digital pedagogy and competence-oriented pedagogy.
4. Colleges of Education should improve digital and instructional infrastructure to support technology-enhanced teaching and learning.
5. Colleges of education should improve access to current academic resources, libraries, electronic resources, research facilities and other instructional materials.
6. Programme administrators should strengthen coordination between NCE and degree programmes to promote institutional coherence.
7. Quality-assurance units should periodically assess not only curriculum delivery and institutional inputs but also evidence of student competency development.
8. Social Studies teacher educators should incorporate experiential approaches such as community-based projects, field activities, collaborative problem-solving and service-learning to strengthen strategic/action competence.
9. Future studies should employ longitudinal or mixed-method designs to examine how sustainable development competencies develop over time and how they translate into sustainability-oriented classroom practices after graduation.
10. Future research should compare different categories of Colleges of Education and institutional contexts to determine how institutional arrangements influence Dual-Mandate implementation.
11. Subsequent studies should consider structural equation modelling or multilevel modelling where sufficiently large datasets are available.

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