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DUAL MANDATE POLICY AND THE FUTURE OF ELECTRICAL/ELECTRONIC TECHNOLOGY TEACHER EDUCATION IN NIGERIAN COLLEGES OF EDUCATION

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Abstract: *Teacher education in Technical and Vocational fields plays a significant role in preparing teachers who can promote practical skill development and technological advancement. In Nigeria, recent policy reforms have introduced dual mandate in selected Colleges of Education, allowing these institutions to award both the Nigeria Certificate in Education (NCE) and Bachelor's degree simultaneously. This development represents a major shift in the structure and expectations of teacher preparation, particularly in technical and vocational programmes such as Electrical/Electronic Technology Education. This paper examines the implications of the dual mandate policy for the future of Electrical/Electronic Technology Teacher Education in Nigerian Colleges of Education. The paper adopts a conceptual approach based on the review and analysis of relevant literature on teacher education, technical and vocational education, and policy reforms in Nigerian Colleges of Education. The paper explores the objectives of dual mandate policy and discusses its potential influence on curriculum development, instructional practices, teacher competence, and skills training in Electrical and Electronic Technology Education. It also highlights emerging issues that may affect the effective implementation of the policy, including adequacy of qualified personnel, availability of modern laboratories and workshops, curriculum alignment for NCE and degree programmes, and the need for stronger industry collaboration. The paper argues that the successful implementation of dual mandate policy will depend largely on the ability of Colleges of Education to strengthen their technical teacher education programmes to meet the demands of both academic and practical training. It concludes that Electrical and Electronic Technology Teacher Education must be strategically repositioned through curriculum innovation, improved facilities, and continuous professional development of lecturers in order to sustain quality teacher preparation under the dual mandate system. The paper therefore recommends collaborative efforts among government agencies, teacher education institutions, and industry stakeholders to ensure that the policy contributes meaningfully to the development of competent technical teachers and skilled manpower in Nigeria.*
Keywords: *Dual Mandate Policy; Electrical/Electronic Technology Education; Teacher Education; Nigerian Colleges of Education.*

Introduction

Teacher education remains the foundation of every successful educational system because the quality of teachers largely determines quality of learners and national development. Globally, teacher education institutions are being increasingly restructured to respond to rapid technological advancements, changing labour market demands, digital transformation, and the need for highly competent graduates capable of supporting innovation and sustainable development. These global developments have placed renewed emphasis on strengthening Technical and Vocational Education and Training (TVET), particularly programmes that prepare technical teachers for emerging technologies and industrial development. In Nigeria, Colleges of Education have traditionally been established to produce professionally qualified teachers for the basic education sector through the award of the Nigeria Certificate in Education (NCE), which remains the minimum teaching qualification in the country (Omolade, 2022). Over the years, these institutions have contributed significantly to the production of teachers in science, technology, vocational, and business education.

However, declining student enrolment, increasing demand for university degrees, technological changes, and evolving national workforce requirements have generated concerns regarding the continued relevance and competitiveness of Colleges of Education within Nigeria's higher education system (Federal Republic of Nigeria, 2013). To address these concerns, the Federal Government introduced Dual Mandate Policy following the enactment of the Federal Colleges of Education (Establishment) Act, 2023 (Ogheneovo & Abugor 2025). The policy empowers eligible Federal Colleges of Education to

award both the Nigeria Certificate in Education (NCE) and Bachelor's Degrees in Education independently without affiliation to conventional universities. The reform seeks to reposition Colleges of Education as comprehensive teacher education institutions capable of expanding access to higher education while preserving their statutory responsibility of producing professionally competent teachers (Olowo, & Akinguloye, 2025). The National Commission for Colleges of Education (NCCE), in collaboration with the National Universities Commission (NUC), has consequently developed implementation guidelines, curriculum frameworks, and quality assurance mechanisms to facilitate the successful implementation of the policy.

The introduction of the dual mandate represents one of the most significant reforms in Nigerian teacher education section in recent decades. Beyond increasing access to degree qualifications, the policy presents opportunities for curriculum review, institutional autonomy, improved research capacity, enhanced academic competitiveness, and stronger collaboration between Colleges of Education and industry (Ogheneovo & Abugor 2025). Nevertheless, successful implementation requires substantial improvements in staffing, infrastructure, laboratory facilities, curriculum harmonisation, funding, quality assurance, and institutional governance. These issues are particularly important in Electrical Electronic Technology Teacher Education that prepares teachers who are expected to produce skilled technicians, craftsmen, entrepreneurs, and technology educators capable of supporting industrial growth and technological advancement (Orogo & Oviawe 2026). The programme combines theoretical knowledge with intensive practical training in areas such as electrical installation, electronics, renewable energy technologies, industrial automation, instrumentation, electrical machines, control systems, and emerging digital technologies. Consequently, effectiveness of Electrical Electronic Technology Teacher Education depends largely on the availability of competent lecturers, modern laboratories, functional workshops, industry exposure, and curricula that reflect current technological realities.

The implementation of the dual mandate therefore presents both opportunities and challenges for Electrical and Electronic Technology Teacher Education (Etesike, Ogbuabor & Offor, 2024). On one hand, it offers opportunities to improve academic standards, expand research activities, modernise curricula, and produce graduates with higher qualifications capable of teaching at different educational levels, while on the other hand, inadequate funding, shortage of qualified academic staff with doctoral qualifications, weak institutional-industry collaboration, obsolete equipment, and the need to simultaneously implement NCE and degree curricula may undermine the intended benefits of the reform if not properly addressed. This paper therefore examines the implications of the Dual Mandate Policy for the future of Electrical and Electronic Technology Teacher Education in Nigerian Colleges of Education. Specifically, it discusses the objectives of the policy, analyses its implications for curriculum development, teaching and learning, practical skills acquisition, lecturer capacity development and industry collaboration. The paper also identifies emerging implementation challenges and proposes strategies for repositioning Electrical and Electronic Technology Teacher Education to meet the expectations of the dual mandate and Nigeria's industrial development aspirations.

Conceptual Clarification

Dual Mandate Policy

The Dual Mandate Policy refers to the educational reform that authorises qualified Federal Colleges of Education to concurrently offer both the Nigeria Certificate in Education (NCE) and Bachelor's Degree programmes in Education under their own authority. Prior to this reform, Colleges of Education that offered degree programmes did so through affiliation with universities, where the affiliated university awarded the degree certificates. The enactment of the Federal Colleges of Education (Establishment) Act, 2023 changed this arrangement by granting eligible Colleges of Education the legal authority to independently award bachelor's degrees while retaining their responsibility for the NCE programme (Ogheneovo & Abugor 2025). The major objectives of the policy include expanding access to higher education, improving teacher quality, increasing enrolment into Colleges of Education, strengthening institutional autonomy, enhancing teacher professionalism, and promoting efficient utilisation of available human and physical resources. The policy also aims to create a seamless academic progression from the NCE to bachelor's degree programmes within the same institution while maintaining national quality assurance standards.

Electrical/Electronic Technology Teacher Education

Teacher education refers to the systematic preparation of individuals who possess the knowledge, professional competencies, pedagogical skills, ethical values, and practical experiences required for effective teaching and learning. According to the National Policy on Education, teacher education is expected to produce highly motivated, competent, innovative, and professionally committed teachers capable of responding to changing educational and societal needs (Federal Republic of Nigeria, 2013). In Nigeria, teacher education is provided through Colleges of Education, Universities, Institutes of Education, and other approved teacher preparation institutions under the supervision of the National Commission for Colleges of Education, the National Universities Commission, and other relevant regulatory agencies (Oluwatosin & Bolanle, 2024). Electrical/Electronic Technology Teacher Education is a specialised component of Technical and Vocational Education and Training (TVET) designed to prepare competent teachers capable of teaching electrical and electronic technology subjects in secondary schools, technical colleges, colleges of education, vocational centres, and other training institutions. The programme integrates engineering technology, pedagogy, industrial experience, entrepreneurship education, digital technologies. However, Okoye & Arimonu, 2022; Ugwoke et al., (2023) reported that inadequate practical facilities remain one of the major constraints affecting the quality of technical teacher preparation in Nigerian higher institutions

Colleges of Education and the Emergence of the Dual Mandate Policy

The establishment of Colleges of Education in Nigeria was driven by the need to produce professionally qualified teachers for primary and junior secondary schools following the recommendations of the National Policy on Education (Federal Republic of Nigeria, 2013). Since the establishment of the Advanced Teachers' Colleges in the 1960s and the subsequent creation of Colleges of Education across the federation, these institutions have remained the major providers of teacher education through the Nigeria Certificate in Education, which is recognised as the minimum teaching qualification in Nigeria. Over the years, Colleges of Education have produced thousands of teachers in science, technical, vocational, business, agricultural, language, and social science education. Their contributions have been particularly significant in improving access to teacher education and supplying qualified teachers to public and private educational institutions. Nevertheless, several challenges have affected their effectiveness. These include inadequate funding, deteriorating infrastructure, shortage of qualified academic staff, obsolete workshops and laboratories, weak research culture, declining student enrolment, and increasing public preference for university degree qualifications (Aina, 2021; Okolie et al., 2023). One of the major concerns confronting Colleges of Education has been the declining attractiveness of the NCE qualification. Many prospective students increasingly prefer direct admission into universities because degree qualifications are perceived to provide broader career opportunities and higher prospects for promotion within the education sector. This trend has contributed to declining enrolment in many Colleges of Education and has raised questions about their long-term sustainability (NCCE, 2024).

Recognising these realities, the Federal Government initiated several reforms aimed at repositioning teacher education. The most significant step was the enactment of the Federal Colleges of Education (Establishment) Act, 2023, which provides the legal framework for eligible Federal Colleges of Education to award both the Nigeria Certificate in Education and Bachelor's Degrees in Education independently. The policy is expected to increase access to higher education, strengthen teacher professionalism, improve institutional competitiveness, and enhance capacity of Colleges of Education to respond to national development priorities. The implementation of the policy has been coordinated jointly by the NCCE and the NUC, both of which have developed operational guidelines to ensure that degree programmes offered by Colleges of Education satisfy the same minimum academic standards applicable to Nigerian universities (NCCE, 2024). This collaborative regulatory approach seeks to preserve the traditional strengths of Colleges of Education in teacher preparation while introducing university-level academic standards, research expectations, and quality assurance mechanisms.

Objectives of the Dual Mandate Policy and Their Implications

The Dual Mandate Policy was introduced to strengthen teacher education in Nigeria by expanding access to higher education, improving teacher quality, promoting curriculum innovation, enhancing research, and increasing the competitiveness of Colleges of Education. By empowering eligible Colleges

of Education to award both the Nigeria Certificate in Education (NCE) and bachelor's degrees, the policy provides prospective teachers with alternative pathways to higher qualifications while reducing the growing demand for admission into conventional universities. For Electrical Electronic Technology Teacher Education, the policy is expected to improve curriculum standards, pedagogical practices, and research capacity through the integration of emerging technologies such as renewable energy systems, industrial automation, artificial intelligence, robotics, embedded systems, and digital technologies. The reform intended to equip graduates with the technical and professional competencies required to meet contemporary industrial and educational needs (Federal Republic of Nigeria, 2023; National Commission for Colleges of Education, 2024; (UNESCO, 2021). Five objectives of dual Mandate Policy are summarized in Figure 1.



Figure 1: Objectives of the Dual Mandate Policy

International experiences demonstrate that effective technical teacher education reforms are characterised by competency-based curricula, strong industry partnerships, modern learning facilities, continuous professional development, and technology-driven instructional practices. Countries such as Finland, Germany, Singapore, South Korea, and China have successfully aligned technical teacher education with labour market demands through work-based learning, collaborative research, and curriculum innovation. Consistent with these global trends, UNESCO (2021) emphasises the need for digital transformation, sustainability, and closer collaboration between educational institutions and industry. Therefore, the successful implementation of the Dual Mandate Policy in Nigerian Colleges of Education will depend not only on the authority to award bachelor's degrees but also on sustained investment in modern infrastructure, lecturer capacity development, curriculum modernisation, quality assurance, and strategic partnerships with industry to strengthen Electrical/Electronic Technology Teacher Education and produce competent technical teachers for national development.

Implications of the Dual Mandate Policy for Electrical ElectronicTeacher Education

The introduction of the Dual Mandate Policy has significant implications for the future of Electrical and Electronic Technology Teacher Education in Nigerian Colleges of Education. The policy requires comprehensive curriculum review and harmonisation to accommodate both the Nigeria Certificate in Education (NCE) and bachelor's degree programmes while aligning training with contemporary industrial and technological developments. Consequently, Electrical/Electronic Technology curricula should incorporate emerging areas such as renewable energy systems, industrial automation, robotics, artificial intelligence, embedded systems, and smart electrical technologies. The reform is also expected to promote learner-centred and technology-driven instructional approaches, including project-based learning, competency-based education, virtual laboratories, computer-aided design, blended learning, and digital assessment, thereby strengthening graduates' critical thinking, problem-solving, and practical competencies (UNESCO, 2021; NCCE, 2024). The policy further presents opportunities to improve practical skills development, lecturer capacity, research productivity, and innovation. Effective implementation will require the modernisation of laboratories and workshops, increased industrial

attachment for students and lecturers, and continuous professional development in emerging technologies and digital pedagogy. Degree-awarding status also places greater emphasis on research, innovation, and community engagement, requiring lecturers to undertake quality research, supervise undergraduate projects, attract research grants, and establish collaborative partnerships with industries. Such collaborations will enhance curriculum relevance, facilitate technology transfer, and expose students to current industrial practices, thereby improving the quality of technical teacher preparation (UNESCO-UNEVOC, 2022; Okolie et al., 2023). The Implications of the Dual Mandate Policy for Electrical Electronics Teacher Education are summarized in Figure 2.



Figure 2: Implications of the Dual Mandate Policy for E/E Teacher Education

Furthermore, the successful implementation of the Dual Mandate Policy depends on effective quality assurance mechanisms and sustained investment in human and material resources. Colleges of Education must maintain high standards in staffing, curriculum implementation, laboratory facilities, assessment practices, and research to satisfy the requirements of both the NCCE and the NUC. If properly implemented, the policy has the potential to improve graduate employability, promote entrepreneurship, support technological innovation, and produce competent Electrical/Electronic Technology teachers capable of contributing to Nigeria's industrialisation and sustainable national development. However, achieving these outcomes requires adequate funding, strong institutional governance, and continuous collaboration among government, industry, and teacher education institutions.

Challenges and Future Prospects of the Dual Mandate Policy

Despite the enormous potential of the Dual Mandate Policy to transform teacher education in Nigeria, its successful implementation in Electrical/Electronic Technology Teacher Education is likely to face several challenges. One of the major constraints is inadequate funding, which limits the ability of Colleges of Education to procure modern laboratory equipment, upgrade workshops, establish digital learning facilities, and support research activities (Ogheneovo & Abugor, 2025). In addition, many institutions experience shortages of qualified academic staff, particularly lecturers with doctoral qualifications and expertise in emerging technological fields. The continued use of obsolete laboratories and workshops, coupled with difficulties in harmonising NCE and bachelor's degree curricula, may also hinder effective implementation. These challenges are further compounded by weak collaboration between Colleges of Education and industry, limiting opportunities for industrial attachment, curriculum review, collaborative research, and graduate employability. Furthermore, maintaining quality assurance standards for both NCE and degree programmes will require effective monitoring, accreditation, and compliance with the requirements of the NCCE and the NUC (Federal Republic of Nigeria, 2013; NCCE, 2024). The Figure 3. summaries challenges associated with the implementation of dual mandate policy.



Figure 3. Challenges of the Dual Mandate Policy

Notwithstanding these challenges, the future of Electrical/Electronic Technology Teacher Education under Dual Mandate Policy remains promising. The policy provides an opportunity to reposition Colleges of Education as centres of excellence for technical teacher preparation, applied research, innovation, and workforce development. By granting degree-awarding status, the policy is expected to improve institutional competitiveness, increase student enrolment, strengthen research collaboration, and promote stronger partnerships with universities, industries, professional bodies, and international organisations. Moreover, the emergence of Industry 4.0 technologies, including artificial intelligence, robotics, renewable energy systems, automation, digital manufacturing, and smart technologies, provides a strong basis for curriculum modernisation and improved technical teacher preparation. These developments have the potential to produce graduates with competencies that align with contemporary industrial and educational needs. To realise these prospects, sustained investment in infrastructure, human capital development, curriculum innovation, and quality assurance is essential. Government, regulatory agencies, Colleges of Education, and industry stakeholders must work collaboratively to strengthen lecturer capacity, modernise workshops and laboratories, expand industry partnerships, and ensure effective implementation of the dual mandate policy. Such coordinated efforts will not only improve quality of Electrical Electronic Technology Teacher Education but will also contribute to technological advancement, graduate employability, entrepreneurship development, and sustainable national economic growth

Conclusion

The Dual Mandate Policy represents a landmark reform in Nigerian teacher education with the potential to transform Colleges of Education into more competitive institutions capable of producing highly qualified and technologically competent teachers, the policy provides opportunities for curriculum modernisation, improved teaching and learning, enhanced practical skills development, stronger research capacity, increased industry collaboration, and improved graduate employability. However, the successful implementation of the policy will depend on adequate funding, qualified academic staff, modern laboratories and workshops, effective curriculum harmonisation, and robust quality assurance mechanisms. Therefore, the policy should be regarded not merely as an expansion of degree-awarding powers but as a strategic framework for strengthening technical teacher education and producing competent graduates capable of supporting Nigeria's technological advancement and sustainable national development.

Suggestions

The following suggestions were proposed:

1. Government should provide adequate funding to Colleges of Education for the provision and upgrading of modern laboratories, workshops, digital infrastructure, and instructional facilities

required for effective implementation of the Dual Mandate Policy in Electrical/Electronic Technology Teacher Education.

2. The National Commission for Colleges of Education and the National Universities Commission (NUC) should strengthen curriculum harmonisation and quality assurance mechanisms to ensure that both NCE and bachelor's degree programmes maintain high academic standards while integrating emerging technologies and industry-relevant competencies.
3. Colleges of Education should invest in continuous professional development of lecturers through doctoral training, industrial attachment, research collaboration, and regular capacity-building programmes to enhance teaching effectiveness, research productivity, and technological competence.
4. Electrical and Electronic Technology departments should strengthen partnerships with industries and professional bodies to facilitate students', industrial attachment, collaborative research, and curriculum review
5. Colleges of Education should promote innovation and entrepreneurship by integrating Industry 4.0 technologies, artificial intelligence, automation, and digital technologies into Electrical Electronic Technology curricula to prepare graduates for the evolving world of work and national technological development.

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