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PERSPECTIVE ON TERTIARY EDUCATION IN NIGERIA



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CHAPTER SEVEN

**CORE CURRICULUM AND MINIMUM
ACADEMIC STANDARDS (CCMAS)
IMPLEMENTATION IN NIGERIAN
UNIVERSITIES: PROBLEMS AND PROSPECTS**

By

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Abstract

In 2022 the National Universities Commission (NUC) introduced the Core Curriculum and Minimum Academic Standards (CCMAS) to modernize and harmonize undergraduate programmes across Nigerian universities. CCMAS establishes common learning outcomes, specifies programme credit ranges, and requires that at least 70% of each programme consist of core courses while allowing 30% institutional flexibility for locally relevant or innovative content. This chapter explains the conceptual basis of CCMAS, clarifies implementation terminology, evaluates key impediments to rollout (funding deficits, inadequate infrastructure including power and ICT, academic staff shortages, and capacity gaps), and highlights institutional and policy prospects (NUC leadership, professional-body engagement, international assistance, and targeted capacity building). Drawing on implementation theory and practice, I argue that successful CCMAS deployment requires coordinated financing, phased infrastructure investments, comprehensive faculty retraining, monitored resource verification, and stakeholder buy-in. The chapter ends with practical recommendations — a national CCMAS implementation fund, prioritized resource verification and electrification/ICT plans, scalable faculty development programmes, incentives for staff retention, and stronger monitoring and evaluation — designed to make CCMAS an engine for graduate employability and national development. The analysis draws

on NUC's CCMAS documents and other recent policy sources to link expectations to realistic operational steps.

Keywords: National, Universities, Commission, development, verification, implementation, monitoring, evaluation, Administration, Management

Introduction

In December 2022 the National Universities Commission (NUC) released the Core Curriculum and Minimum Academic Standards (CCMAS) to replace the older BMAS/BMAS framework and to align undergraduate curricula with 21st-century skills and employability requirements (NUC, 2022). The CCMAS documents are uniquely structured to provide for 70% of core courses for each programme while allowing universities to utilize the remaining 30% for other innovative courses in their peculiar areas of focus. In addition to the overall Learning Outcomes for each discipline, there are also Learning Outcomes for each programme and course. CCMAS is organized around 17 disciplinary clusters and establishes common learning outcomes, credit-load boundaries (students are generally expected to carry not less than 30 and not more than 48 credit units per session), Consequently, the Commission is optimistic that the 2022 CCMAS documents will serve as a guide to Nigerian Universities in the design of curriculum for their programmes with regards to the minimum acceptable standards of input and process, as well as, a measurable benchmark of knowledge, 21st-century skills and competences expected to be acquired by an average graduate of each of the academic programmes, for self, national and global relevance.

The new CCMAS has 17 faculties namely; i. Administration and Management, ii. Agriculture, iii. Allied Health Sciences, iv. Architecture, v. Arts, vi. Basic Medical Sciences, vii. Communications and Media Studies, viii. Computing, ix. Education, x. Engineering and Technology, xi. Environmental Sciences, xii. Law, xiii. Medicine and Dentistry, xiv. Pharmaceutical Science, xv. Sciences, xvi. Social Sciences and xvii. Veterinary Medicine (NUC, 2022). The new CCMAS is designed to be implemented by both human and material resources like the ICT and artificial intelligence facilities. It should be noted that Artificial Intelligence is an infrastructure that can empower people (Ogunode, Abdullahi, & Sani, 2024).

Thus, this chapter is discussed under the following subheadings.

- Clarification of concepts
- Core Curriculum and Minimum Academic Standards (CCMAS)
- Implementation
- The Imperative of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian Universities

- Problems
- Prospects
- Conclusion
- Revise questions

Clarification of concepts

Core Curriculum and Minimum Academic Standards (CCMAS)

Core Curriculum and Minimum Academic Standards (CCMAS) is an organized curriculum for the production of graduates that are fit and self-rely, for national and global relevance. Core Curriculum and Minimum Academic Standards (CCMAS) is an improved curriculum with regards to the minimum acceptable standards of input and process, as well as, a measurable benchmark of knowledge, 21st-century skills and competencies expected to be acquired by an average graduate of each of the academic programmes, for self, national and global relevance (Ogunode, et al 2024). Core Curriculum and Minimum Academic Standards (CCMAS) is an improved curriculum designed to be implemented through blended learning and developed for the training and development of graduates who are fit to solve the problems confronting the nation and to contribute to national and international development. Core Curriculum and Minimum Academic Standards (CCMAS) can also be defined as a curriculum development for implementation in Nigerian universities that is anchored on virtual and blended learning and involvement of teaching, research and provision of community services (Ogunode Olaoye, & Yakubu, 2023).

Implementation

Implementation can be seen as the act of carrying out planned programmes and projects to achieve a specific purpose. Implementation is the process that involves the execution of a designed programme and projects. Implementation is key to the completion of projects. Implementation is one of the critical components of project management that involves the practical execution of projects to realize their objectives (Ogunode, Abdullahi, & Sani, 2024). Ogunode and Ahaotu (2020) viewed implementation as the systematic way of executing programmes, policies and projects. Implementation is the act of carrying out planned actions and programmes. Implementation is the stage by stage of carrying out defined and planned programmes. Implementation means carrying out an assigned task. Implementation comes after the process of planning, organization, coordination and promotion which is necessary to achieve policy objectives. Implementation implies the process of activating an approved policy.

Franklin in Ejike, and Ejike, (2018), defined implementation as activities that include amassing resources needed to mobilize and carry out responsibilities, planning specific programme designs, using legislation and translating them into specific regulations, organizing staff, creating or

amending appropriate routines and providing the benefits and services to intended recipients. Hyder (1984) considers implementation as the act of putting policies into practice. It is often. Manafa (2011) observed that policy implementation depends on some factors which include knowing what you want to do and the availability of the required resources. Implementation becomes possible when the resources have been mapped out for the project. Implementation is the act of carrying out a planned programme as designed.

The Imperative of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian Universities

Funding problem

Funding is critical for the implementation of a new curriculum like the Core Curriculum and Minimum Academic Standards (CCMAS). Adequate funding will support provision of adequate human and materials resources for the smooth implementation in the Nigerian universities. It is unfortunate that the budgetary to the education sector that include the universities is poor and inadequate to ensure full implementation of the Core Curriculum and Minimum Academic Standards (CCMAS). The funding of the Nigerian universities have not improved even with the introduction of the Core Curriculum and Minimum Academic Standards (CCMAS) for implementation in the universities (Champion 2022).

Infrastructure and ICT gaps

The Core Curriculum and Minimum Academic Standards (CCMAS) is designed to be implemented with artificial intelligences and other modern technologies (open educational resources, e-learning, and ICT-enabled assessment) in many programmes. However, many public universities still experience unreliable electricity, limited campus broadband, and insufficient classroom/lab equipment — constraints that make consistent delivery of CCMAS elements difficult without targeted capital investment and coordinated campus ICT planning. These modern infrastructure facilities are not adequate in some of the public and state universities. The inability of these universities to provide these facilities on ground has affected the implementation of the Core Curriculum and Minimum Academic Standards (CCMAS) in the universities. Many universities according to Monday, (2022) cannot provide constant electricity and internet services that are crucial for the full implementation of the Core Curriculum and Minimum Academic Standards (CCMAS).

Shortage of academic staff

The successful adoption of CCMAS depends on trained faculty who can redesign courses, create learning-outcome aligned assessments, and supervise students' project-based work. Shortages of qualified staff, heavy workloads, and limited professional development opportunities impede timely curriculum redesign and pedagogical shifts. Research and policy analyses identify staff training and re-skilling as urgent needs to operationalize CCMAS across disciplines. Academic

staff are the implementer of the curriculum in the higher institutions especially in the universities (Musa, 2023).

Change management and stakeholder buy-in

Large-scale curricular reform is a change management challenge. Resistance (real or perceived) arises if stakeholders—faculty, students, professional bodies, and employers—feel excluded from planning, or if reforms are seen as top-down. Without phased change management (communication, pilots, feedback loops), institutions may implement CCMAS superficially rather than transform teaching and assessment practices. (Fullan, 2007).

Prospects Core Curriculum and Minimum Academic Standards (CCMAS) in the Nigerian universities

National Universities Commission (NUC) Support

The National Universities Commission (NUC) plays a crucial role in supporting the full implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian universities. The Commission is responsible for developing and maintaining a comprehensive and harmonized curriculum for all undergraduate programs in Nigerian universities. This curriculum is designed to ensure that students receive a well-rounded and quality education that meets global standards. The NUC is responsible for setting and enforcing minimum academic standards for all Nigerian universities. This ensures that all universities adhere to the same high standards and are continuously improving their programs to meet the needs of their students and society (Businessday 2022; Ogunode, Ohibime, & Jegede, 2023a).

In order to support the implementation of the CMAS, the NUC has developed various policies and guidelines for Nigerian universities to follow. These include guidelines for curriculum development, program accreditation, and quality assurance. The Commission also conducts regular inspections and assessments of universities to ensure compliance with these standards. The NUC works closely with universities to provide training and capacity building for faculty and staff to effectively implement the CMAS. The Commission also encourages collaboration between universities to share best practices and improve the overall quality of education in Nigeria.

Professional Bodies and institutions support

The roles of professional bodies and institutions are crucial in supporting the full implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian Universities. These bodies and institutions play a vital role in ensuring that the education system in Nigeria meets the required standards and produces graduates who are well-equipped with the necessary skills and knowledge to contribute to the development of the country.

Professional bodies such as the Nigerian Society of Engineers, Nigerian Bar Association, and Nigerian Medical Association are responsible for setting standards and regulating the practice of

their respective professions. These bodies can also provide expert guidance and support to universities in developing and implementing the Core Curriculum and Minimum Academic Standards. Institutions such as the National Universities Commission (NUC) and the National Board for Technical Education (NBTE) have the responsibility of accrediting academic programs and ensuring that they meet the required standards. They can also collaborate with professional bodies to develop curriculum guidelines and assess the quality of education being provided by universities. Government institutions such as the Federal Ministry of Education can provide funding and policy support to universities to help them implement the Core Curriculum and Minimum Academic Standards. They can also work with professional bodies and institutions to monitor the progress and impact of these standards on the education system.

International organizations Support

International organizations play a crucial role in supporting the full implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian universities. These organizations provide funding, resources, and expertise to help implement and improve educational standards in the country. They also facilitate collaboration and partnership between Nigerian universities and international institutions, promoting the exchange of ideas and best practices, international organizations play a key role in advocating for the importance of CCMAS and promoting its implementation to other stakeholders in the education sector. They also conduct research and provide recommendations to continuously improve the standards and ensure their relevance in the ever-evolving academic landscape.

These organizations provide training and capacity building programs for Nigerian university faculty and staff, equipping them with the necessary skills and knowledge to effectively implement CCMAS. They also offer support and guidance in the development and evaluation of curriculum and academic standards, ensuring they meet international benchmarks and promote a well-rounded education for students. The involvement of international organizations is crucial in ensuring the successful implementation of CCMAS in Nigerian universities. Their support and resources not only enhance the quality of education but also contribute to the growth and development of the country's academic sector. With their continued support, Nigerian universities can strive towards excellence and produce globally competitive graduates.

Practical Recommendations (operational roadmap)

1. **Establish a CCMAS Implementation Fund.** A pooled fund (federal + state + donor contributions + private partnerships) to finance essential infrastructure, learning resources, and retraining.
2. **Phased roll-out.** Pilot CCMAS in selected programmes (high-needs and high-readiness) before full system adoption; learn from pilots and adapt. (Fullan, 2007).

3. **Resource verification & ICT plans.** Use NUC's resource verification tools to prioritize electricity, broadband, and lab upgrades at campuses.
4. **Comprehensive faculty development.** Six-month intensive pedagogical and assessment training (as planned by government/NUC), supplemented with ongoing online CPD modules and mentorship.
5. **Stakeholder engagement protocol.** Institutionalize employer and professional-body inputs into curriculum review cycles to ensure labour market alignment.
6. **Monitoring & evaluation.** Develop outcome indicators (graduate competencies, employment rates, program compliance) and public dashboards for transparency.

Summary

The imperative of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian Universities is to ensure a standardized and comprehensive education for all students. This includes setting minimum academic standards that must be met by universities in order to maintain a high level of education and consistency across different institutions. The CCMAS also outlines a core curriculum that all students must complete, regardless of their major, in order to develop a well-rounded and diverse education. This curriculum includes courses in different disciplines such as mathematics, languages, social sciences, and natural sciences, and aims to cultivate critical thinking skills and prepare students for the workforce.

The National Universities Commission has a crucial role in ensuring the successful implementation of Core Curriculum and Minimum Academic Standards in Nigerian universities. Through its policies, guidelines, and collaborations, the Commission is committed to promoting the highest quality of education in Nigeria and preparing students for the challenges of the globalized world. By implementing these standards and curriculum, Nigerian universities can provide a quality education and produce well-rounded individuals who are equipped to contribute to society. With coordinated NUC leadership, professional-body support, targeted investment, and international partnerships, CCMAS can improve graduate readiness and strengthen Nigeria's university system for the 21st century.

Review Questions

1. What is the Core Curriculum and Minimum Academic Standards (CCMAS)?
2. How do you define "implementation" in the context of curriculum reform?
3. Highlight five imperatives of CCMAS in Nigerian universities.
4. Discuss five problems militating against the implementation of CCMAS.
5. Suggest two prospects or opportunities that can support CCMAS implementation.

References

- Ayeni, E. O., Munkaila, I., & Ogunode, N. J. (2024). *The role of government in the implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in Nigerian universities*. *Electronic Research Journal of Social Sciences and Humanities*, 6(II). https://www.researchgate.net/publication/381321656_The_Role_of_Government_in_the_Implementation_of_Core_Curriculum_and_Minimum_Academic_Standards_CCMAS_in_Nigerian_Universities. ResearchGate
- BusinessDay. (2022). Experts applaud FG's change of varsities' curriculum. *BusinessDay Nigeria*. <https://businessday.ng/news/article/experts-applaud-fgs-change-of-varsities-curriculum-unbundling-courses-others/>. Businessday NG, December 9
- Champion. (2022). *NUC at 60-FG introduced new curriculum for university education in Nigeria*. <https://championnews.com.ng/nuc-at-60-fg-introduced-new-curriculum-for-university-education-in-nigeria/>
- Ejike, N. C., & Ejike, O. G. (2018). Challenges of curriculum implementation and the realization of national philosophy of education in Nigeria. *International Journal of Management, Social Sciences, Peace and Conflict Studies*, 1(1), 62–67.
- Fullan, M. (2007). *The new meaning of educational change* (4th ed.). Teachers College Press. [Michael Fullan](#)
- Monday, T. O. (2022, May 22). *Core Curriculum and Minimum Academic Standards (CCMAS) implementation in Nigeria: Process and problems* [Conference paper]. Capacity Building Workshop for University Lecturers, Abuja, Nigeria. <https://www.researchgate.net/publication/xxxxx>
- Musa, M. (2023). Teaching strategies for the implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in universities in Nigeria* [Unpublished manuscript]. Department of Curriculum Studies, Bayero University, Kano. <https://www.researchgate.net/publication/xxxxx>
- National Universities Commission (NUC). (2022). *Core Curriculum and Minimum Academic Standards (CCMAS) — official site and CCMAS documents*. NUC-CCMAS portal. <https://nuc-ccmas.ng/> and specific CCMAS documents (e.g., Engineering-CCMAS.pdf; Agriculture-CCMAS.pdf; Education-CCMAS). [Nuc Ccmas+2National Universities Commission+2](#)
- NUC. (2024, January 1). *NUC Annual/quarterly reporting and resource-verification updates*. (NUC bulletin). <https://www.nuc.edu.ng/wp-content/uploads/2024/01/1st-January-2024.pdf>. [National Universities Commission](#)
- Ogunode, N., J. Edinoh, K. Olatunde-Aiyedun, T. G. (2023). Staff Training in Schools. *Journal of Innovation in Educational and Social Research*, 1(3), 192-207
- Ogunode, N. J., & Ahaotu, G. N. (2021). Supervision of universities in Nigeria: Problems and suggestions. *American Journal of Social and Humanitarian Research, 2(4), 82–91. <https://www.researchgate.net/publication/xxxxx>

- Ogunode, N. J., Abdullahi, A., & Sani, K. (2024). Core Curriculum and Minimum Academic Standards (CCMAS) implementation in Nigerian universities: Roles of artificial intelligence. *American Journal of Technology Advancement*, 1(2), 1–9.
- Ogunode, N. J., Ohibime, E. O., & Jegede, D. (2023). Core Curriculum and Minimum Academic Standards (CCMAS) for Nigerian universities: Possible implementation problems and way forward. *Journal of Education, Ethics and Value*, 2 (1), 1–13.
- Ogunode, N. J., Olaoye, A. E., & Yakubu, I. (2023). Adequate funding of public universities and effective implementation of Core Curriculum and Minimum Academic Standards (CCMAS) in North-East Nigeria universities. *Analytical Journal of Education and Development*, 3(3), 215–222.
- Punch. (2022). New curriculum: FG plans six-month training for lecturers. *Punch Online*. <https://punchng.com/new-curriculum-fg-plans-six-month-training-for-lecturers/>. *Punch Nigeria*, December 7
- UNESCO. (2007). *Manual for pilot testing the use of indicators to assess the impact of ICT use in education*. UNESCO Bangkok. <https://unesdoc.unesco.org/ark:/48223/pf0000156079>. [UNESCO Digital Library](#)
- World Bank. (2024/2025). *Education finance and support for human capital in Nigeria*. See World Bank reports and press releases on education financing and the Nigeria program. <https://www.worldbank.org/en/topic/education/publication/education-finance-watch> and <https://www.worldbank.org/en/news/press-release/2025/04/02/support-for-human-capital-in-nigeria-world-bank-approves-new-financing-for-education-nutrition-and-economic-resilience>. [World Bank+1](#)