

CURRICULUM MANAGEMENT SYSTEM IN HIGHER EDUCATIONAL INSTITUTIONS: BEST PRACTICES AND CHALLENGES

BY

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Abstract

The effective management of curriculum in higher educational institutions is crucial for ensuring the quality of teaching and the overall educational experience. A well-designed curriculum management system aids in the alignment of educational goals, the systematic organization of courses, and the continuous improvement of academic programs. This paper discussed curriculum management systems in higher educational institutions, best practices and challenges. Despite the benefits of the curriculum management system in tertiary education numerous challenges impede the effective management of curriculum. These include the difficulty in integration of digital technology into the pedagogical content, paucity of funds and deficit in educational facilities among others. To address these challenges the research submits that the managers of educational institutions should focus on fostering a culture of continuous improvement and innovation. This can be achieved by providing adequate training for the faculty, involving all stakeholders in the decision-making process and ensuring robust technical support among others. The implication is that adopting best practices and innovative solutions can help institutions overcome these obstacles and achieve academic excellence.

Keywords: curriculum, curriculum management system, higher educational institutions

Introduction

Curriculum and curriculum management are essential concepts in the management of educational institutions that have garnered significant attention in recent times. The proliferation of digital technology has caused a paradigm shift in pedagogical content. Educational institutions, especially higher educational institutions are realigning their educational content to meet international best practices and remain competitive. These have triggered a continuous monitoring and evaluating curriculum to ensure that the learning outcomes meet not only the student's expectations but also the industry's and society's expectations. This brings to the fore the concept of curriculum management most effectively and efficiently which will provide valuable insights into students' learning outcomes. Curriculum refers to all learning experiences in educational institutions and it consists of the planned and unplanned learning experiences the learners are exposed. It consists of the sequences of instruction, pedagogical contents, learning objectives, and the entire resources that are used in the attainment of educational goals (Osuji & Wordu 2024). Management, in the context of higher education, is proving leadership, mobilizing and coordinating resources to achieve institutional goals and objectives.

The effective management of a curriculum needs to take into account the needs of stakeholders to ensure collective success. It's worth noting that simply involving stakeholders' needs may not produce the desired results without integrating digital technology into curriculum management. A cursory look at the curriculum and curriculum management in tertiary educational institutions in Nigeria it appears there is a gap between the intention and actions (Howson & Kingsbury 2021). This has elicited responses from scholars and practitioners asking questions. This has prompted serials of research questions. Despite the proliferation of tertiary education in Nigeria why are higher education graduates roaming the streets seeking for white collar jobs? Why higher education unemployment rate surging? Is there a gap between theory and practice? What are the best practices in the management of curriculum to

achieve educational and institutional goals? It is in a bid to answer these questions and others that the researcher explores the best curriculum management system in higher education and the challenges. The thrust of the paper is to explore the best practices of curriculum management and the associated challenges.

To achieve the aim of the study the researcher adopted a systematic review of related literature. Consequently, the methods of data collection are secondary data largely from journals, literature, textbooks and online materials related to the research problem. The latitude of the study is restricted to tertiary education in Nigeria. Tertiary education is education where higher certificates are obtained after graduation from post-basic education. The paper will not only be useful to the stakeholders of education in curriculum management but also will contribute to the repository of knowledge on the best practices in curriculum management systems.

The theoretical basis of this study is anchored on Constructive Alignment Theory (CAT). Constructive Alignment theory, proposed by John Biggs, is a framework used in educational theory and practice to design effective learning experiences. He is an influential educational psychologist who introduced and elaborated on the theory in his book "Teaching for Quality Learning at University" (2011). The theory posits that for learning to be effective, there should be alignment between three key components: learning outcomes, teaching and learning activities, and assessment methods (Brings & Tang, 2011). CAT is an outcomes-based approach to teaching and learning that connects learning outcomes, teaching activities and assessment methodology systematically to enhance the attainment of learning objectives. The theory is apt to the study because it not only enhances clarity in teaching and learning experiences. It emphasizes that effective teaching involves ensuring that the intended learning outcomes are articulated and are the driving force behind both teaching strategies and assessment methods. It encourages educators to design coherent and integrated learning experiences that support students in achieving these outcomes. It is against this background that the study is structured after the introduction, the clarification of concepts, types of curriculum, higher educational institutions and curriculum management, management system and best practices, benefits of the curriculum management system, challenges, conclusion and suggestions.

Concept of Curriculum Management

The idea of curriculum can be traced back to ancient Greece, where philosophers such as Plato and Aristotle created early versions of educational programs. However, the formalization of curriculum as a structured educational experience gained importance in the 19th century with the establishment of modern education systems. Consequently, the concept of curriculum has elicited various definitions among scholars and practitioners in academic institutions. This is because of the crucial role curriculum plays in the attainment of educational and institutional goals. Curriculum is pivotal in the teaching and learning activities in all facets of educational institutions. The curriculum differentiates between the various levels of the educational system from the primary to the zenith of academic pursuit. It, therefore behooves to enumerate the various definitions as defined by scholars. A curriculum is defined as a planned and guided learning outcome, a structured series of learning experiences, educational instrument through which educational institutions attain the educational goals as defined by national policy on education (Osam, 2015; Ogar & Awhen, 2015). From the above definitions curriculum can be deduced to be all structured set of educational experiences provided by the institution, planned and unplanned that the learners are exposed to. It consists of instructional activities and materials, methodology and the entire process of evaluating the students to ensure better attainment of educational goals. It is imperative to mention that the curriculum may not achieve the stated objective if not effectively managed to attain the predetermined goals. This calls for the management of the curriculum for the attainment of educational goals.

Curriculum management is crucial in accountability, collaboration, standardization, and innovation to improve the standard learning experiences (Barron-Tirads & Barriga, 2016). Today, curriculum management is a dynamic field that continuously monitors and coordinates educational resources to attain institutional goals and objectives. Jovanovic and Pejic (2023), aver that curriculum management consists of instruction monitoring and evaluation, curriculum coordination and student monitoring. The authors also suggested that in the context of monitoring and evaluation,

managing instruction involves consistently verifying the appropriateness of learning materials for students' prior knowledge and their capacity to understand and apply it at the highest cognitive level. It becomes imperative that faculty and administrators should embrace curriculum as a shared responsibility to enhance widespread participation (Law, 2021). Consequently, the proliferation of universities and the upturn of digital technology has caused the integration of technology into curriculum management. This gave rise to the management of the curriculum system to enhance the quality of the educational process and improve efficiency in all facets of academic activities.

Curriculum Management System

Management of curriculum is crucial for the attainment of educational and institutional goals. It is a complex educational activity that encompasses various learning processes, methodology, and appraisal and evaluation of learning outcomes and therefore needs a concerted effort for managers of academic institutions. The integration of digital technology in curriculum management has given rise to the curriculum management system. Curriculum Management System is a digital tool specifically designed to aid higher education institutions in mapping, managing, and analyzing their curriculum. (Akari Curriculum Management 2023). This software assists educational institutions in creating, managing, and optimizing the curriculum. The curriculum management system involves digitalizing the management through curriculum management software, which facilitates continuous improvement of teaching and learning (Bouchrika, 2024). It will typically consist of features such as course mapping tools to guarantee that each course meets institutional standards, analysis tools to recognize student performance trends and gaps in the curriculum, degree audits to monitor students' progress throughout their degree program, and automated approval processes to ensure compliance. The digitalization of the management of curriculum is apt in a knowledge-driven economy. The integration software will significantly enhance operational efficiency by reducing the time spent on manual tasks. It will play a pivotal role in streamlining curriculum mapping, analyzing content and structure, evaluating student progress, assessing program effectiveness, and facilitating rigorous research, review, and revision processes.

Types of Curriculum Management System

There is no gain in saying that integrating digital tools into higher education curriculum management improves teaching, learning, research, and administrative processes, as current and future academic offerings. Lathon (n.d), identified two types of curriculum management systems open and closed management systems. The author asserts that in a close curriculum management system, the vendor hosts the server and is responsible for managing and maintaining the platform. In an open curriculum management system educational institution are responsible for the maintenance of the system and educators can personalize the platform to suit their special needs. One of the benefits of an open curriculum is that it allows for greater accessibility. There are various curriculum management software used in higher education, each with unique features and functionalities. They offer tools for curriculum mapping, course scheduling, assessment management, and accreditation reporting. By automating administrative tasks and providing data analytics, these systems enhance decision-making processes and improve curriculum quality.

Bouchrikai (2024), itemized the 21 best curriculum management software in higher education. They are:

- i) Quali Curriculum: for higher education management software
- ii) Creatrix Campus: For intensive outcomes-based curriculum
- iii) Courseleap CIM: For online curriculum process
- iv) Coursedog: integrated curriculum operations platform
- v) Akari curriculum management: for connected and cohesive curriculum
- vi) Chalk: for integrated curriculum and lesson planning
- vii) CourseLoop curriculum management: for a streamlined process
- viii) Watermark curriculum strategy: for simplified curriculum management
- ix) Edinsight curriculum management system: for mapping curriculum design and delivery
- x) Dearmclass: for fully online school management

- xi) Top Hat: The all-in-one teaching and learning platform
- xii) Kiddom education platform: for complete curriculum management
- xiii) PlanbookEdu: The web-based lesson planning tool
- xiv) Oncourse urriculum Builder: Integrated online curriculum and lesson planning
- xv) Embarc curriculum mapping and management solution: Aligning lessons with curriculum
- xvi) Curriculum track: curriculum management for faith based schools.
- xvii) Worktribe: for cloud-business curriculum management
- xviii) Mododle : for course development and management
- xix) Eduphoria forethought: the CMS with dynamic curriculum mapping tools
- xx)Global IT factory: providing a structured framework for curriculum management.

Higher Education Institutions and Curriculum Management System Best Practices

Higher education is tertiary education where higher education and certificates are acquired for not only the development of man but also to build the labour forces that will aid the development of society. It consists of education acquired after post-basic education. It encompasses the College of Education, School of Health, Science and Technology. Universities are the zenith of academic pursuit on the ladder of education. Higher education can achieve the predetermined goals through effective implementation of the curriculum. Curriculum plays a vital role in the attainment of education and institutional goals. Through curriculum the learning experiences are organized, objective is defined, and the needs of society are achieved. Curriculum management in higher education is a critical aspect that ensures the academic programs are designed, implemented, assessed, and continuously improved to meet the educational needs of students, the standards of accrediting bodies, and the demands of the job market. Hederman (n.d), opined that curriculum management is the lifeblood of higher education contributing significantly to the efficacy and productivity in the delivery of a meaningful educational experience to students and stakeholders within the increasingly competitive academic environment. It is paramount to emphasis that effective curriculum management requires a comprehensive approach that involves best practices.

Interestingly, technology keeps evolving and the aforementioned software is not exhaustive and no one best option for all purposes. Educational administrators must adopt the best option that will enhance task management, curriculum mapping tools, content resources library and other features that provide complementary educator tools to develop, execute and analyze curricula. Management of curriculum in higher education is multifaceted and complex and integration of technology will not only enhance efficiency and effectiveness but also will improve communication and feedback. So, the best option for educational administrators is the use of technology in the administration of higher education curricula. So, in the diffusion of technology in the management of curriculum, the managers of education must take cognizance of the accessibility and easier-to-use tools for faculty and administrators. The more accessible and easier to use encourage greater usage and will enhance the attainment of institutional and educational goals. Lathon (n d), opined that in the adoption of curriculum management software, administrators should consider data model flexibility, and access flexibility that can be integrated into students' information systems without difficulties configuring for the institution. So, the adoption must take cognizance of software that do not only offers flexibility but also helps institutions adoptability and agility of the 21st century.

Also, paramount are the institutional structure facilities and the technical know-how. The adoption of software in curriculum management is determined not only by the number of experts' faculty and administrators but also by the digital facilities available in educational institutions. It is interesting to note that technology begets technology. The technological resources accessible by an organization as well as their intrinsic characteristics play a pivotal role in influencing the adoption process (Kinaanath, 2013). Consequently, the availability of technological resources will inherently dictate the choice of software utilized for curriculum management systems. Educational institutions play a significant role in the adoption of curriculum management software. The available resources in the institutions that encourage the use of software, along with the school policy on the use of technology, will determine the adoption of software in the management of curriculum.

Another concept of best practice in the curriculum management system is the involvement of stakeholders in the planning, management and implementation of the curriculum. The stakeholders consist of the students, educators, administrators, policymakers and industry partners that have a direct or indirect impact on the management of the curriculum. Singh (2023), writing on streaming curriculum management in higher education opines that the involvement of stakeholders namely faculty, students, alumni, employers and industry experts in the curriculum development process guarantees its comprehensiveness and alignment with stakeholders' requirements. Efficient communication plays a crucial role in the management of the curriculum. Educational institutions must guarantee that all parties concerned are adequately informed regarding modifications in the curriculum, prerequisites for programs, and evaluation standards. Precise communication fosters confidence and guarantees that each individual engaged comprehends their duties and obligations within the curriculum management framework. Through this collaborative strategy, the creation of more innovative and efficient educational programs is facilitated.

Other best practices in curriculum management system in higher education that will significantly enhance the quality and effectiveness of higher educational institutions are:

- 1) Regularly monitoring and evaluating the curriculum to allow institutions to identify areas for improvement and adapt to changing educational needs and standards.
- 2) Continuous review and assessment of the curriculum are necessary to maintain its relevance and effectiveness.
- 3) Providing professional development opportunities for faculty and administrators is crucial for an effective curriculum management system. These practices contribute to the continuous improvement of academic programs, ultimately benefiting students, faculty, and the broader community.

Benefits of Curriculum Management System

The significance of a well-managed curriculum in higher education cannot be overstated. A sturdy curriculum ensures students acquire the necessary knowledge, skills, and competencies to succeed in their chosen fields. It promotes academic rigour, fosters critical thinking, and supports lifelong learning. Furthermore, an effective curriculum aligns with industry demands, preparing graduates to meet the challenges of the global workforce. Curriculum management systems in higher education provide a structure for formulating, executing, and evaluating curricula to accomplish these objectives. Other benefits of CMS are:

- i) A centralized curriculum management system enables faculty and university administrators to make informed decisions utilizing real-time data.
- ii) A centralized management curriculum system enables educational administrators the capacity to streamline the accreditation process through the provision of comprehensive reports concerning curriculum mapping and assessment of learning outcomes.
- iii) Adoption of a Curriculum Management System not only saves time but also increases the efficiency and productivity of educational administrators, thereby allowing lecturers enough time to dedicate their time to the core mandates of teaching, research and community services.
- iv) Greater transparency and accountability: The implementation of an educational management system fosters transparency within the curriculum management process, thereby ensuring accountability and alignment with the overarching objectives of the institution.
- v) Continuous improvement: Through the monitoring of student advancements and data analysis, an educational management system can pinpoint areas necessitating enhancement within the curriculum, consequently supporting ongoing improvement initiatives.
- vi) The use of curriculum management systems promotes collaboration among faculty members, enabling collective input and feedback on course and program design.
- vii) The curriculum is continually monitored and documented to ensure ongoing alignment with accreditation criteria, enhancing quality assurance.

- viii) Efficiency is enhanced through streamlined processes. Administrative tasks such as course approvals, syllabus development, and catalogue maintenance are automated, reducing manual effort and increasing operational effectiveness.

Challenges of the Curriculum Management System

Despite the benefits of integrating technology into the curriculum management System, several challenges hinder the achievement of desired goals and objectives. In Nigeria, the curriculum management system faces numerous challenges that hinder the effective delivery of education. These challenges include inadequate funding, poor infrastructure, insufficient qualified personnel, and systemic issues such as corruption and outdated policies.

Inadequate Funding

One of the most significant challenges facing the curriculum management system in Nigerian higher education is inadequate funding. The federal government or the state government is the major financier of public universities in Nigeria. A cursory look at the budgetary allocation in the education sector depicts an insignificant percentage of below ten per cent of the annual budget which is a far cry from UNESCO's recommended standard (Wordu, 2021) This underfunding affects all aspects of the educational system, from infrastructure development to the procurement of learning materials and the remuneration of staff.

Poor Infrastructures

Another significant challenge facing Nigerian higher educational institutions is deplorable infrastructure. Many universities and other tertiary education operate with obsolete or inadequate educational facilities, including dilapidated buildings, insufficient classrooms, lecturers' offices, laboratories, and libraries. The lack of digital technology has exacerbated the problems, making it difficult for institutions to offer practical and research-based learning experiences. Eslit (2023) argues that access to technology and the internet has constituted a setback to education. Inadequate resources and facilities hinder effective teaching and learning (Niyitanga, 2021). Also, integrating systems into curriculum management can be complex and costly requiring substantial technical expertise and financial resources. Deficiencies in digital facilities are a direct consequence of abysmal funding of education.

Insufficient Qualified Personnel

It is important to note that there is a critical challenge related to the shortage of qualified academic and administrative staff. Unfortunately, there is a lack of these qualified personnel, making it impossible to effectively achieve institutional goals. (Titus, 2018). The few qualified personnel available are often overloaded with excessive workloads, which negatively impacts their productivity and the quality of education they provide. Furthermore, the remuneration and working conditions for educators in Nigeria are generally poor, leading to brain drain as many professionals seek better opportunities abroad (PanjiO'gli, 2023)

Corruption

Corruption is another pervasive issue that affects the curriculum management system in Nigerian higher education. Misappropriation of funds, bribery, and other corrupt practices undermine the integrity of the education system and divert resources away from their intended purposes. Ogunode & Nasir (2021) point out that funds allocated for supporting curriculum delivery are often mismanaged and looted by officials within the education ministries and agencies. This institutional corruption hinders the effective management of curriculum in Nigeria's higher educational institutions.

Insecurity

The issue of insecurity in various parts of Nigeria also poses a significant challenge to the curriculum management system. Frequent outbreaks of violence, particularly in the northern regions of the country, disrupt academic activities and make it difficult for institutions to operate effectively (Adanne et al, 2022). Threats from insurgent groups often force students and staff to evacuate campuses, leading to disruptions in the academic calendar and loss of valuable learning time. This unpalatable circumstance not only disturbs academic activities but also hinders the attainment of institutional and educational goals.

Conclusion

Curriculum management is pivotal in the attainment of institutional and educational goals and has gathered serious attention from educationists and practitioners. The curriculum management system is a digital tool designed to help educational managers map, manage and analyze their curriculum in tandem with societal needs and international best practices. CMS provides a centralized platform for all related data, making it easier to access and make data-based decisions. Although the curriculum management system offers several benefits, higher education administrators are encountering challenges in achieving their educational objectives. Some of these challenges include a lack of funds, insecurity, and corruption. If left unaddressed, these issues could undermine the essence of education. Addressing these challenges will not only enhance the quality of education but also ensure that graduates are better equipped to contribute to the country's socio-economic development/

Suggestions

To address these challenges and improve the curriculum management system in higher education in Nigeria, the following suggestions are proffered:

1. **Increased Funding:** The government should give precedence to education in its budgetary allocations, guaranteeing that ample resources are designated for higher education. This financial support should be utilized to enhance infrastructure, acquire modern educational tools, and offer improved compensation for personnel.
2. **Infrastructure Development:** Higher educational institutions should make a concerted effort to rehabilitate and upgrade existing infrastructures. This includes constructing new buildings, renovating existing ones, and equipping laboratories and libraries with modern facilities.
3. **Capacity Building:** The managers of higher education should invest in the training and development of academic and administrative staff. This can be achieved through professional development programs, scholarships for advanced studies, and better working conditions to retain qualified personnel.
4. **Anti-Corruption Measures:** Strong anti-corruption measures should be implemented to ensure transparency and accountability in the management of educational resources. This includes strict enforcement of anti-corruption laws and the establishment of oversight bodies to monitor the use of funds.
5. **Security Enhancements:** The government should address the issue of insecurity by deploying adequate security personnel to protect educational institutions. Additionally, measures should be put in place to ensure the safety of students and staff, allowing academic activities to proceed without disruptions.

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