NATIONAL UNIVERSITIES COMMISSION

GUIDELINES FOR e-LEARNING IN NIGERIAN UNIVERSITIES

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1.0 INTRODUCTION

Emerging global trends have necessitated the integration of e-learning into the process of teaching and learning. The recent revolution in Information and Communications Technology (ICT) has opened tremendous opportunities for improving pedagogies in higher education institutions. In Nigeria, the trends that characterise higher education such as the need to widen access to university education, the demand for graduates who are globally fit for the technological demands of 21st Century workplace, the need to build resilient education systems against future disruptions like COVID-19, have made e-learning inevitable in higher education. The current global educational landscape has been inundated with a plethora of ICT - enabled educational infrastructure and solutions including Open Educational Resources (OER), Massive Open Online Courses (MOOCs), Learning Management Systems (LMS), Virtual Learning Environments (VLE), Virtual Laboratories, and Collaborative platforms. These resources are expected to increase access to university education and improve the effectiveness and quality of delivery in teaching, learning and research. Unfortunately, more emphasis is often placed on using them in the administrative processes (enrolment, registration, admissions, fee payment etc.) rather than the pedagogical fundamentals of teaching and learning in both online and physical environments.

The National Universities Commission (NUC), in recognition of the urgent need to mainstream modern e-learning modes in the NUS, has developed these guidelines to serve as a framework for the orderly integration of e-learning into the university programmes while ensuring adherence to standards and outcomes of creativity and innovation, entrepreneurship and critical thinking laid out in the Core Curriculum Minimum Academic Standards (CCMAS).

2.0 E-LEARNING: KEY CONCEPTS AND DEFINITIONS

E-learning, also called electronic learning or online learning, is a mode of learning that takes place electronically, via the Internet. With e-learning, learners can access learning from any location, at any time or place, as long as they have access to a device and a Wi-Fi or data connection. Learning

Management Systems (LMS) are effective ways to facilitate e-learning as these platforms can house learning courseware, activities, resources, delivery, and assessment. e-Learning can be interactive when technological tools are employed to facilitate communication between learners and with their facilitators/tutors both online and offline. In these guidelines, e-Learning refers to all forms of technology enabled learning regardless of whether they are used remotely or in classroom contexts.

Below are concepts and technologies associated with e-Learning and their definitions:

Synchronous Online learning: This mode of e-learning entails teaching and learning that is delivered online and in real-time. It relies primarily on internet connectivity using video conferencing tools and collaborative applications with **learners and facilitators/tutors in the same place and at the same time.** Live online sessions are an example of synchronous online learning.

Asynchronous Online learning: This mode of e-Learning is a self-paced learner-centred method that does not take place in real time or require learners to engage in live sessions. It is premised on the principle that learners can learn at different places and times. In asynchronous learning, learners engage with learning resources and activities at their own pace. Discussion forums are examples of an e-learning component through which learners and facilitators can engage in communication not in real time.

Fixed e-Learning: Fixed e-learning refers to learning using content that does not change during the learning process and all the learners receive the same information. The learning resources include lecture notes, videos and tutorials which are predetermined by the teachers and are not adaptable to learners' needs or preferences.

Adaptive e-Learning: This is an innovative type of e-learning that makes it possible to adapt and redesign learning materials to meet the needs of individual learners. This e-Learning mode makes use of several parameters such as a learner's performance, goals, abilities, skills, and characteristics obtained from the VLE or LMS to design individualised learning paths for learners. Adaptive e-learning allows for learning to become more individualised and learner-centred.

Linear E-Learning: In this e-Learning mode, information exchange is one - way communication from the tutor to the learner and vice versa. It does not allow two-way communication between tutors and students. Delivering teaching and learning via television and radio programmes are examples of linear e-learning.

Interactive Online Learning: This mode of e-Learning allows for two-way communication between learners and tutors. Interactive online learning supports improved teaching and successful learning.

Individual Online Learning: This e-Learning mode allows learners to achieve their learning goals by studying on their own. It does not encourage collaborative learning. The focus is independent learning and is like the conventional individualised learning style.

Collaborative Online learning: This is a modern e-Learning method with focus on learners learning and achieving their learning objectives together as a group. It is premised on the principle that knowledge is best developed in a group where learners can interact and learn from each other. Learners are expected to work as a team to achieve their common learning objectives. This mode of e-Learning promotes learners' communication skills and teamwork abilities.

Digital Learning: refers to any type of learning that uses technology and that allows learners to learn anytime, anywhere and at their pace. Digital learning can take place at a distance or in person, in or not in real time. It is a cover-all

term encompassing a wide range of digital learning practices including face-to-face, distance, online, virtual, and blended learning.

Blended Learning: This mode of learning refers to the use of technology and distance learning methods with the traditional face-to-face mode of teaching and learning. Whole programmes and courses or different aspects of courses can be blended. A major benefit of this mode is that learners have access to a variety of learning resources and interactions that enhance their learning across face-to-face, distance and online contexts. There are different models of blended learning but typically a blended course will have components of both online and face-to-face learning activities and resources with the context determining the proportion of blending. Blended learning is recommended as a viable approach to learning online because of its flexibility, ease of access, and integration of multimedia and technologies that make for effective instructional delivery.

2.1 e-Learning Technologies

E-learning technologies refer to a wide range of applications, platforms, and tools used to support and deliver educational resources and training courses digitally. This list of technologies ranges from Learning Management Systems (LMS) to cutting-edge virtual reality and augmented reality applications. Today, education is more accessible, flexible, and more personalised than ever, due to e-learning technologies, which have transformed how we learn and acquire knowledge.

The following are examples of some e-learning technologies:

a. Learning Management Systems (LMS): Software programs called learning management systems (LMS) make it possible to deliver, manage, and track online training and educational programmes.
b. Massive Open Online Courses (MOOCs): are open to everyone and typically provided without charge. They are frequently presented through a range of multimedia methods and involve a sizable number of participants.

c. Social media: These channels can be utilised to encourage learner-centred social learning for both learners and teachers to communicate, interact, collaborate, and share knowledge.
d. Video conferencing: These solutions allow for remote engagement and real-time communication between learners and instructors.
e. Virtual Reality (VR) Learning: A technology that creates an immersive, simulated environment using digital tools such as headsets or controllers. VR can be used to create interactive learning experiences that simulate real-world scenarios.
f. Augmented Reality (AR): A technology that overlays digital information onto the real world, often using smartphones or tablets. AR can be used to create interactive learning experiences that enhance the learning environment and provide additional context and information.
g. Gamification: An e-Learning component that contributes to positive interactive learning engagement, improves learners' knowledge absorption and retention and enhances the learning experience for learners from all age groups.
h. E-portfolios: Electronic portfolios, comprise writings, documents and other artefacts compiled by learners that form part of assessment to demonstrate their learning over the duration of a course or programme. They are designed to encourage learners in active learning by reflecting on their learning and assessing their progress. Electronic portfolios can be integrated into LMSs or VLEs and can be used in face-to-face, online, in-person or blended learning contexts.

Criteria for the selection of mode(s) of e-learning and technologies should be aimed at enhancing teaching and learning, reflected in institutional policies, and guidelines should be provided for their integration and use.

3.0 GOALS OF THE GUIDELINES

The goals of these guidelines shall be to:

3.1 Provide the framework for the implementation of e-learning in Nigerian Universities.

3.2 Provide a framework for the orderly integration and mainstreaming of e-learning into teaching and learning in Nigerian universities.

3.3 Ensure the provision of pedagogically sound course design, development, delivery and assessment for e-learning contexts,

3.4 Provide guidelines for the proper utilisation of technology in teaching and learning in Nigerian universities.

3.5 Promote research, scholarship and collaboration on various aspects of e-learning.

Pursuant to the above goals:

The National Universities Commission (NUC) shall be committed to the philosophy and practices of e-learning, providing framework, building capacity, raising awareness and fostering positive attitudes in educators, learners and researchers.

The existing enabling environment for ICT – including infrastructure, Internet connectivity and emerging technologies shall be fully integrated to facilitate robust e-learning practices in Nigeria.

4.0 Objectives of the guidelines

1. **Improve the quality of e-Learning provisions:** provide best practices and standards to guarantee that e-Learning programmes are efficiently run, interactive, and available to all students.

2. **Enhance learner engagement:** create engaging e-learning environments that motivate and inspire learners to participate in the learning process.

3. **Promote inclusivity:** ensure that e-Learning is accessible to all learners, regardless of their abilities, backgrounds, or learning preferences.

4. **Ensure the effectiveness of e-Learning:** measure the effectiveness of e-Learning and provide feedback to improve the learning outcomes.

5. **Facilitating the development of e-Learning:** provide guidance and support for educators and instructional designers in creating and delivering successful e-Learning experiences.

6. **Ensure the protection of the security and privacy of learners in Virtual Learning environments:** ensure the security and privacy of e-Learning platforms, protecting learners' personal data, and preventing unauthorised access.

4.0 SCOPE OF GUIDELINES

These guidelines are expected to cover ten major sections, as follows:

4.1 Governance and Administration
- 4.1.1 e-Learning Strategic Plan and Policy
- 4.1.2 Human Resource and Development

4.2 Course Material Design and Development

4.3 Course Delivery

4.4 Staff Support

4.5 Learner Support

4.6 Assessment

4.7 Technology, Learning Infrastructure and Facilities

4.8 Collaboration and Partnership

4.9 Research

4.10 Quality Assurance

4.1 Governance and Administration

Institutions should provide strategies and guidelines to ensure that the unique requirements and use of e-Learning options are adequately accommodated in their vision and mission statements, and governance frameworks of their institutions.

4.1.1 Institutional e-Learning Strategic Plan and Policy

All Universities should develop an institutional e-Learning strategic plan and policy that outlines strategies for adopting e-Learning, the roles that e-Learning will play in the development of the institution, and a policy that will guide its implementation and integration into their academic, administrative and technical operations. The resulting e-Learning strategic plan and policy must meet the following benchmarks:

4.1.1.1 The Philosophy and Objectives of the e-Learning Strategic plan and policy should include explicit statements on its definition of e-Learning; carry out a situational analysis of the current status of the institution, the challenges, the implications for infrastructure, capacity building for digital and pedagogical competencies for staff and students; rationale/justification for why it wants to integrate e-Learning; its core values and principles; its vision for e-Learning; the scope of the strategic plan and policy; how it intends to promote, facilitate and support the development of e-Learning in the university; and the integration of e-Learning in the institution's vision and mission and how this will contribute to the institution's overall vision.

4.1.1.2 Institutional policies and standards: The strategic plan and policy should identify relevant policies that will be required for its effective implementation.

These include the institution's ICT policy and Quality Assurance Policy. Institutions should indicate their approach and criteria for the selection of programmes for e-Learning.

4.1.1.3 Strategies for staff buy- in, welfare and motivation for e-Learning, such as career progression should be clearly stated

4.1.1.4 The institution e-Learning strategic plan and policy should demonstrate conformity to national legal and ethical frameworks by making clear statements on the use of staff and student data, security, electronic fraud, access to physically challenged staff and students, copyright and intellectual property rights and other ancillary matters.

4.1.1.5 The strategic plan and policy should outline its supporting structure plan for e-Learning, the roles and responsibilities as well as in relation to other related structures in the institution.

4.1.1.6 The e-Learning strategic plan and policy should address issues pertaining to collaborations, partnerships and agreements. The roles and responsibilities of all participants in any partnership must be clearly spelt out and understood by all.

4.1.1.7 Institutional plans for resourcing e-Learning development should include requirements such as IT equipment and digital infrastructure, software purchase and installation, staffing and training, and staff workloads.

4.1.1.8 The Institution's e-Learning strategic plan and policy should be widely publicised and understood by all stakeholders in the university system.

4.1.1.9 Institutions should develop a strategy for tracking their students in virtual environments for the purpose of research into improving students' learning experiences using learning analytics.

4.1.1.10 Institutions should make provision for access to their virtual learning environments for accreditation by regulatory bodies.

4.1.1.11 Institutions should ensure that plagiarism and AI-assisted detection tools, and proctoring software for assessment where applicable are in place on their learning platforms to enhance the authenticity of learning

4.1.1.12 Policy guidelines should be provided for different processes of teaching and learning, content development, delivery and assessment.

4.1.2 Human Resource and Development

There is a critical need to build capacity for e-Learning in the NUS to ensure the effectiveness and sustainability of the integration. To achieve this, institutions should make provision for an effective human resource development plan for the recruitment of suitably qualified staff, and training and retraining of academic, support, technical and administrative staff for the key roles they perform as well as on latest developments in e-Learning.

The following are the guidelines:

4.1.2.1 Institutions should carry out a needs assessment of training needs and develop plans for capacity building in digital literacy and e-Learning

4.1.2.2 All staff should also be trained on the use of any e-Learning and administrative software deployed.

4.1.2.3 Institutions should include specific qualifications and experience in e-learning in the criteria for academic staff recruitment.

4.1.2.4 Institutions should always maintain an active repository of all staff data.

4.1.2.5 Institutions should consider that more time is required for the development of technology-supported programmes and courses. Hence

institutions should ensure adherence to the recommended **ratio** of facilitator/tutor to learners; and monitor academic **workload** of staff involved in e-Learning.

4.1.2.6 Institutions should ensure that **roles** are properly assigned (e.g. facilitator, e-tutors, teaching assistants etc), regarding course design and development, design and preparation of assessments, online facilitation, course monitoring and management; research and evaluation, communication with learners, and learner support.

4.1.2.7 Institutions may develop a framework for incentivising the staff for the deployment of e-Learning to boost staff performance.

4.2 Course Design and Development

In all institutions, the course content must conform with the approved FGN/NUC Core Curriculum Minimum Standards (CCMAS) for each programme and its expected learning outcomes. Institutions are expected to develop an e-Learning framework that will facilitate the achievement of these expected outcomes. In this regard, institutions should adhere to the principles of flexibility and adaptability in their course design such that learners are able to customise their learning experience according to their needs and preferences and progress at their own pace.

The e-Learning framework should therefore ensure the following:

4.2.1 There are clear guidelines and procedures for the design and development of curriculum and course content to ensure the learning outcomes, learning resources, learning activities and assessment for the courses are adequate and the selection of media and technology is appropriate for online (distance, blended) delivery.

4.2.2 Institutions should determine the percentage of blend of online and traditional methods (face to face or distance) to inform course design.

4.2.3 The course structure should be logical and indicate the number of assignments, discussions, and assessments and the duration of the course to facilitate self-directed learning.

4.2.4 The course structure should indicate links to learning resources in library databases and other relevant websites.

4.2.5 The course design should be flexible to allow for updates of content, activities, assignments and learning resources.

4.2.6 The course design should have e-Learning components that facilitate navigation through the course content to facilitate interactivity and a flexible learning path for learners, while ensuring the achievement of the required learning outcomes.

4.2.7 Interaction and collaboration are central to e-Learning. Institutions should deploy strategies for engaging learners and provide opportunities for collaborative learning with other learners, interaction with tutors, and with the content using a variety of social networking tools (e.g. mobile applications, video conferencing platforms etc) to support active learning.

4.2.8. Learners should be engaged with a variety of learning activities that are linked to the stated learning outcomes and encourage critical thinking. They should be supported with learning resources integrated into the design using media such as short videos and other interactive tools.

4.2.9 There is provision for access to high quality virtual laboratory tools to complement in-person laboratory sessions to enable learners to participate in practicum remotely, where physical attendance is not possible.

4.2.10 Institutions should ensure that assessments and examinations are linked to courses' learning outcomes. The online platform and assessment types for formative and summative assessments should be appropriate for online assessment, ensure timely feedback, efficiency and security to prevent malpractice such as impersonation, plagiarism and AI- assisted practices.

4.2.11 Institutions should explore collaboration in the development of course content.

4.2.12 Provision should be made in the course design for interaction between learners and tutors and learners in both real time (synchronous) and offline (asynchronous)

4.2.13 Provision should be made in the course design for continuous monitoring of students' performance and progress in the Virtual Learning Environment (VLE)

4.2.14 The use of resources such as Open Educational Resources (OER) and Massive Open Online Courses (MOOCs) in the development of a course should be properly attributed and referenced and in line with relevant institutional policies. Institutions are also encouraged to licence their course materials as OERs and in line with the National Policy on OER.

4.2.15 A mechanism should be in place for obtaining feedback from learners on the quality of the course, facilitation, and assessment to inform curriculum and course reviews.

4.2.16 Institutions should provide guidelines for regular reviews of course content and their lifespan.

4.2.17 Courses should be designed and developed in such a way that they provide access to all learners and support an inclusive learning experience. This includes making access to course content flexible and affordable in formats that

are accessible to all learners including those with special needs by incorporating design elements that facilitate interactivity, low bandwidth consumption, and are compatible with different platforms and devices.

4.2.18 Institutions should put in place Continuous Professional Development plans for training of course design and development teams to ensure the sustainability of quality content.

4.3 Course Delivery

This section covers the provision, maintenance and management of the Virtual Learning Environment and ICT infrastructure required for institutions to deliver the course content, teaching and learning as well as the learning facilitation of course offerings. Institutions should utilise a mix of interactive content such as videos, audio recordings, quizzes, simulations, and interactive activities to engage learners and promote active learning. They should also put policies in place to ensure the adequacy of learning infrastructure to achieve course learning outcomes. Policies on course delivery should meet the following benchmarks:

4.3.1 The Institutional' ICT infrastructure backbone should be robust enough to support academic, social and administrative functions. The technical specifications should take into consideration the number of users and reflect the expected level of usage of ICT infrastructure.

4.3.2 Institutions should ensure adequate provision for archiving, storage, security and disaster recovery for all data on staff, learners for learning, teaching, assessment, and research activities.

4.3.3 Institutions should ensure that staff and students have adequate information and training on using the institution's e-Learning systems and services.

4.3.4 Institutions should ensure secure means and access to the Virtual Learning Environments and other facilities to authorised personnel for monitoring, review and updating and to take necessary actions to improve service delivery.

4.3.5 Institutions should ensure that the choice of Virtual Learning Environments (VLEs) or Learning Management Systems (LMS) is compatible and can be integrated with the institution's Management Information System (MIS) to ensure seamless access to all information such as enrolment, registration and to facilitate data analysis

4.3.6 The VLEs or LMS should be learner friendly and should accommodate learners living with disabilities or special needs.

4.3.7 Institutions should make provision for their course content to be available in multimedia formats with options for downloading resources for offline access.

4.3.8 Institutional information and courseware accessible through the VLE should be regularly monitored, reviewed and updated. This responsibility should be clearly defined, and management should provide identified persons with appropriate and secure access.

4.3.9 Appropriate provision should be made for regular system maintenance and updating of the learning infrastructure.

4.3.10 Learning systems should be compatible with a wide range of devices, operating systems, and browsers, to accommodate diverse learners and facilitate access to the course content.

4.3.11 Institutions should make adequate arrangements for the recruitment, training and performance evaluation of their academic staff for the facilitation of courses online.

4.4 Staff Support

The achievement of a seamless integration of e-Learning in an institution implies a major paradigm shift and change management from classroom contexts to online and blended contexts. Staff should be supported in the new roles that they are expected to perform. Universities are expected to adopt the following guidelines and benchmarks to adequately provide training, technical, and administrative support for staff.

4.4.1. Institutions should put in place plans for sensitisation and advocacy of its staff for buy-in of e-Learning.

4.4.2 Institutions should ensure that adequate technical and administrative support are available to all academic staff and tutors in each programme.

4.4.3 Course facilitators and tutors should be adequately trained with evidence of professional qualifications from recognised organisations in blended learning and e-Learning.

4.5 Learner Support

A major paradigm shift in integrating e-Learning into education is the flexibility and ease of learning it engenders such that learners can access learning at any time, from any place and at their own pace. In the light of this, institutions should ensure that necessary support is provided for learners to improve their learning experiences and provide access to resources required to promote

learner retention and success. These support services include academic, administrative, technical, tutoring, informing, advising, guidance and counselling support.

The following guidelines are expected to be followed in supporting students:

4.5.1 Learners should have access to support in both face-to-face and online modes through a range of platforms and tools such as e-mails, mobile applications, video-conferencing or any other collaborative tool.

4.5.2 Learners should have access to clear instructions on course requirements and expected learning outcomes.

4.5.3 Learners should be supported with orientation on registration procedures, their online courses as well as support in developing requisite skills for e-learning, ICT and information literacy, time-management, writing, effective study, note-taking, presentation, team building and self-spaced learning via the e-Learning platform.

4.5.4 Learners should have clear access and up-to-date information about the learning support available to them physically and remotely for their programmes

4.5.5 Learners should be able to obtain prompt feedback on their academic performance and guidance on their academic progression

4.5.6 Learners should have access to documents that set out their own responsibilities as learners, and the commitments of the awarding institution.

4.5.7 Learners should have access to several channels of communication with their institution and staff. These may include the use of AI- assisted tools such as chat bots to respond to frequently asked questions and counselling support.

4.5.8 There is a wide range of learner support services provided in order to cater for the diverse needs of learners including those with special needs.

4.5.9 Learners should be provided with clear guidelines for engagement for online interaction and collaborative learning is encouraged through peer support and discussion groups.

4.5.10 Learners should be supported with provision of access to their learning content in multimedia formats.

4.5.11 Mechanisms are put in place to enable learners to engage adequately with their learning content and delivery sessions synchronously and asynchronously.

4.6. Assessment

Assessment is an integral aspect of teaching and learning that derives from the stated learning outcomes in the course. Therefore, institutions should appropriate design of assessment for e-learning contexts and provide regular feedback and assessment opportunities to enable learners to track their progress and receive timely feedback on their performance. They should also develop policies and mechanisms to ensure the integrity and credibility of their assessment and evaluation systems in online learning contexts. Institutions may deploy electronic examinations or online examinations in addition to, or as alternative options to face-to-face examinations. In this regard, they should deploy appropriate technology to optimise efficiency and ensure the security of their assessment and examination processes.

The following benchmarks should guide institutions in achieving the above:

4.6.1 Their assessment and examination policy has clear procedures that adequately provide guidelines for all aspects of the assessment and examination

processes including items setting, moderation processes and other examinable aspects such as projects, practicum, and industrial attachment in online contexts.

4.6.2 Institutions should ensure assessment of practical such as projects, practicum, industrial attachment evaluate mastery in terms of application of acquired knowledge and skills to real life situations.

4.6.3 Assessment procedures are clear, accessible, and assessment types are appropriate for various modes including online contexts.

4.6.4 That the e-assessment and examination items allow for critical thinking, creativity, and demonstration of in-depth knowledge and competencies of the learning outcomes.

4.6.5 There is adequate provision for timely feedback to learners and they can monitor their progress through self-assessment questions and online quizzes with feedback.

4.6.6 There is a question bank in place to generate multiple questions that are of a comparable level of difficulty and designed to be offered electronically.

4.6.7 Institutions are encouraged to use rubrics and marking guides that outline the criteria for grading of assignments, projects, presentations, examinations whether in paper or electronic formats to ensure consistency and enable learners to understand the expectations and components of an assignment or examination.

4.6.8 Examination results are processed and released on schedule using appropriate technology.

4.6.9 There is a robust LMS in place that links all relevant units (e.g. Faculties, ICT and Academic Registry) with the provision of appropriate levels of access regarding assessment.

4.6.10 All assessment and examination-related data (including examination scripts) are properly stored and archived in digital format for easy retrieval and for a stipulated period.

4.6.11 Institutions should ensure that there are policies in place for proctoring electronic and online examinations, addressing plagiarism and AI-assisted practices to ensure the originality of learners' outcomes in assignments, examinations and projects.

4.6.12 Institutions that are deploying electronic or online assessments and examinations should put in place adequate proctoring for online contexts to ensure the integrity and quality of such tests and examinations.

4.6.13 Institutions should make adequate provisions for post examination activities to include for electronic and online examinations. These provisions should include access to the examination Malpractice Committee to assess recorded evidence on the conduct of the examinations. Official reports of infractions during the examinations should be made to the committee and properly investigated.

4.6.14 All acts of fraudulent behaviour that are deemed fraudulent in in-person examinations should also be deemed fraudulent in an online proctored tests and examinations.

4.6.15 Institutional Boards of Examiners should determine whether a fraudulent act has been committed and recommend relevant penalties and sanctions to be imposed.

4.7. Technology, Learning Infrastructure and Facilities

Institutions should ensure adequate planning, selection and deployment of appropriate technology to enrich students' learning experiences and manage their institutional provisions in an efficient and technology-enabled manner.

The following guidelines apply:

4.7.1 Institutions should have a master plan for their physical ICT infrastructural development, and it should align with the institution's strategic plan. The plan should include plans for adequate bandwidth, computing facilities, and devices for staff and learners.

4.7.2 Institutions should have in place a digital transformation plan for all their operations and services.

4.7.3 Institutions should have comprehensive policies covering areas like accessibility, acceptable use, privacy, intellectual property, technical support, AI- assisted practices (e.g. use of ChatGPT), course design, development delivery, academic and student support.

4.7.4 Institutions should take into consideration their infrastructure, access to learners, in the selection of technological platforms and tools (e.g. LMS, email, mobile applications) that can enhance achievement of stated learning outcomes.

4.7.5 Institutions should ensure that their adopted e-Learning systems or Virtual Learning Environments are compatible with their Management Information Systems; that cater for registration, enrolment, payment and administration.

4.7.6 Institutions should have virtual libraries that can facilitate learners' access to information to meet the stated learning outcomes and to support access to resources for research, teaching and learning within the University community.

4.7.7 Institutions should have mechanisms in place to regularly evaluate the adequacy and accessibility of resources and services for learners and staff, and procedures for appropriate remedial measures to address inadequacies.

4.8. Collaboration and Partnership

Institutions are encouraged to enter collaborative relationships with other institutions and organisations that have similar mandates with a view to sharing resources such as ICT facilities, content development, training, networking, credit transfer, staff exchange, facilitating work placement services, and other employability initiatives.

To achieve the above, institutions should:

4.8.1 Put in place policy, guidelines and procedures on collaboration and partnership.

4.8.2 Have designated Units responsible for handling collaborations and partnerships, for updating, maintaining a database of all agreements and their review.

4.8.3 Pursue collaboration or partnership with relevant national and international institutions, agencies and/or organisations with similar goals and objectives for the utilisation of learning facilities (such as libraries, learning centres, ICT facilities and examination centres), training, staff/student exchange/training, credit transfer, research, joint programmes and conferences.

4.8.4 Foster collaboration and partnership with industries for research and skills acquisition and development of learners

4.9 Research

Institutions should provide an enabling environment to promote institutional research on e-Learning and technological innovations for teaching and learning that are in consonance with institutional strategic plans.

Institutions should therefore:

4.9.1 Ensure that there is a research policy in place and that makes provision for ethical guidelines for staff and learners' research in online contexts.

4.9.2 Ensure that there are plagiarism and AI-assisted policies in place to guarantee originality of research outputs by staff and learners.

4.9.3 Establish and maintain accurate, digitised archiving systems and repositories for research and records of research published by staff and learners.

4.9.4 Utilise research findings to guide planning of its programmes and innovative practices shall be disseminated among stakeholders.

4.9.5 Train staff regularly in research harnessing the affordances of digital technology and e-Learning.

4.9.6 Encourage research through provision of grants, capacity building programmes and creation of an enabling environment for institutional collaboration and partnership in research.

4.10 Quality Assurance

A major challenge to assuring the quality of higher education is the dynamic nature of values that are constantly changing in response to changing societal demands and needs. Institutions should ensure that their institutional quality assurance policies are regularly reviewed to ensure relevance and enhance continuous improvement. Similarly, it is critical to ensure that e-Learning provisions are subject to the same rigour as face-to-face provisions. In order to enhance and maintain quality of e-Learning provisions, the following general guidelines should be adopted by universities:

4.10.1 Institutions should have quality assurance policy and systems in place for the implementation and review of the quality assurance procedures especially for their e-Learning provisions.

4.10.2 Institutions should ensure that the quality assurance processes implemented in the design of e-Learning courses adequately prevent the direct transfer of course content from the face-to-face system into the digital context

and there are mechanisms in place that enhance continuous quality improvement of their e-Learning course content.

4.10.3 Plans should be in place for the regular review of online course content and institutions should ensure that they keep abreast of changes in content and technology.

4.10.4 Learners should have opportunities to provide feedback on their learning experience in form of course evaluation and mechanisms should be put in place to continuously improve on e-Learning provisions based on the feedback

4.10.5 Mechanisms for tracking of learners' participation, progression and for ensuring engagement on the LMS and with their course content should be put in place.

4.10.6 Institutions should ensure periodic review of their quality assurance criteria to keep in line with global trends.

5.0 INTEROPERABILITY OF THE DIFFERENT MODES OF e-LEARNING

e-Learning is currently being deployed in both distance and face-to-face contexts across Nigerian institutions of higher learning. It is therefore critical that these guidelines should be applicable across the different modes of teaching and learning namely, distance, online, blended, and face-to-face modes, to ensure a seamless and aligned approach to the successful deployment of e-Learning in the Nigerian University System.

6.0 IMPLEMENTATION GUIDELINES

e-Learning implementation in Nigeria demands proper planning and consideration of the country's peculiar circumstances. The following guidelines outline responsibilities for key actions to ensure effective implementation of these policy guidelines as well as sustainability:

Institutions shall be responsible for the following:

1. Situation Analysis: Carry out a situation analysis on their readiness for e-Learning in preparation for the effective use of the guidelines.

2. Advocacy: Ensure adequate promotion of the advantages of online learning to stakeholders like learners, teachers, parents, and policymakers. There should also be buy-in from most stakeholders for seamless integration.

2. Infrastructure: Ensure that they have the necessary infrastructure to support e-Learning, including an adequate internet connection, reliable power supply, and necessary equipment like computers, tablets, or smartphones.

3. Curriculum and Content Development: Develop a robust curriculum that is aligned with the CCMAS. Ensure that the content is relevant, designed for e-learning mode of delivery, and appropriate for the target audience.

4. Training and Support: Constitute an e-Learning Committee whose focus is to facilitate the integration of technology into distance, online, blended and face-to-face courses and teaching and learning delivery modes; ensure adequate training, technical, instructional design support services for staff; identify resources for the institution's staff and learners; and provide information to learners on how to use the e-Learning platform and the use of technology in their courses to facilitate a successful online learning experience.

5. Accessibility: Ensure that their e-Learning platforms are accessible to learners with impairments and that the content is designed to be inclusive and accessible to all learners.

6. Cost: Consider the cost of deploying e-Learning and digital infrastructure, by identifying funding sources such as making it a component of institutional infrastructural development, to ensure that it is affordable for all learners, regardless of their socio-economic status.

7. Partnerships: Working with educational institutions, research facilities, and governmental organisations to minimise costs and boost the adoption of e-learning in Nigeria.

8. Monitoring and Evaluation: In order to identify areas for improvement and measure the impact on learners' performance, it is important to regularly assess the effectiveness of e-learning programmes.

9. Security and Privacy: Ensure that the e-learning platform has adequate security measures in place to guard learners' personal information and data against hackers and cyber threats.

10. Sustainability: Create strategies for the project's long-term viability, considering funding, technical support, and capacity-building for the academic staff and learners.

The National Universities Commission (NUC) in conjunction with other relevant bodies shall be responsible for the following:

1. Organise induction sessions for institutions on how to use the guidelines

2. Facilitate the development of e-learning strategic plans and policy for digital integration or transformation

3. Facilitate with institutions on the development of a competency framework that will inform institutional staff needs, capacity building, and support for e-learning;

4. Support the development of a legal framework for collaboration among institutions for resource sharing, content development, training etc

5. Facilitate consensus on:

a) the percentage of blending of face-to-face and online learning taking into consideration that institutions are at different stages;

b) assignment of roles of facilitators, e-tutors/teaching assistants in view of the new roles of academic staff and additional persons involved; and

c) ratio of facilitators, e-tutors/teaching assistants to learners; and

d) workload considerations for academic staff arising from involvement in e-learning activities.

6. Facilitate discussions with the relevant bodies towards achieving zero rating in the cost of bandwidth for higher education institutions

7. Develop criteria for identification of assessors/reviewers and induction should be conducted before review exercises.

7.0 CONCLUSION

The adoption and integration of e-learning by higher institutions of learning has tremendous potential and benefits; from widening access to inclusive, lifelong education and to producing 21st century global citizens who are equipped to impact the society. It therefore requires that quality standards for learning design, development, delivery and assessment and infrastructure are set,

maintained and regularly reviewed in line with global best practices in e-learning.

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