

Flexible Modes of Assessment in Digital Learning through Asynchronous Course Delivery

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Abstract

The huge impact made by the advances in Information and Communication Technology (ICT) and rapid development in contemporary society on our educational systems calls for prompt and adaptive responses in addition to adequate preparedness from all stakeholders, especially educators for effective service delivery. A significant offshoot of this impact is the increased flexibility in teaching and learning at all levels of education, which has informed the adoption of blended /hybrid modes of education delivery in higher institutions in Nigeria. As the popularity of online teaching via the blended/ hybrid mode is growing, the complexity of assessing various levels and domains of achievement in flexible learning is becoming an emerging phenomenon that is attracting the attention of educators in tertiary institutions. Which assessment designs and procedures should be employed in the totally/blended online teaching to achieve the desired quality assurance of learning outcomes? This paper addresses the current explanation of flexible learning in terms of open and distributed/distance learning and presents an overview of asynchronous course delivery as practiced in tertiary institutions. In addition, it presents acceptable web-based assessment frameworks suitable for asynchronous learning modes, and quality online assessment models that yield valid assessment results.

Keywords: Assessment, Asynchronous course delivery, Flexible learning, Higher education, Online learning

Introduction

The rapid developments in the information and communication technology coupled with the COVID-19 pandemic have caused a re-designing of education delivery from the traditional face-to-face classroom and in-person teaching mode to flexible technology-driven modes, like open and distributed/distance teaching, hybrid, and blended online teaching. This global shift in education delivery has necessitated the adoption of a mix of traditional and the new-technology-driven teaching approaches in tertiary institutions in Nigeria, to achieve desirable flexibility in learning and consequently increased access to higher education in any community. The increased flexibility in learning enables the learner to study at their chosen location, time, and pace in a technology-supported learning environment beyond the institutional walls. As with all changes, education experts are tackling the integration of flexibility in learning to avoid throwing the institutions off-balance from achieving the usual learner satisfaction, high quality of instruction, and low drop-out rate (Khan & Smith, 2006). In addition, a re-thinking of the past centuries' models of assessment in the present 21st century online models of computer-based assessments are deemed necessary to maintain the quality of learning (Burke, 2020). As the online in higher education is gaining ground, focus has been heightened on student assessment regarding its accountability and the nature of reporting performance outcomes (Newman, 2015). Of critical importance is the level of complexity that is added to the usual responsibilities of educators and learners in assessment by the application of assessment in a digitally mediated context (Conrad & Openo, 2018). A reduction of this perceived complexity is envisaged if educators understand the dynamics of flexible learning in an online environment created in tertiary institutions. This paper presents the meaning of flexible learning and the practice of asynchronous online courses. It also focuses on online assessment strategies which can be employed to achieve quality assurance in flexible learning. Since online learning lends itself to a variety of strategies for assessment, from which educators can choose, they are termed flexible modes of assessment in this paper.

Flexible Learning

This has been described as an innovational approach for creating a well-designed, interactive, and learner-centered learning environment that is available to anyone, in any location, at any time by the use of features and assets of the internet and technological competence, and various modes of learning in line with well-informed instructional designs (Khan, 2007). The flexibility of learning satisfies the diversity in the characteristics of a variety of learners in the educational system and especially in tertiary institutions. It serves the interests of various stakeholders, like managers,

politicians, and all adult learners whose available periods of learning are regimented. However, for teachers and students, it is seen as a democratization of teaching and learning in which the learner is the focus in the teaching process and their diversities are catered for. Generally, the aim is to design courses and learning experiences that will empower all categories of students to learn qualitatively and with fulfilled satisfaction. In this case, a distributed learning environment could be created to support learning-on-demand that is suitable to students' needs. Distributed learning describes the education which enables students to study academic courses individually, by accessing information provided online by the instructor using technology from various locations. It is also seen as open and distributed learning because the education is provided outside the normal classroom setting (open), using other media to achieve flexibility in teaching and learning. It is accessible to all, regardless of age, qualification, and quota groupings. It is also described as distance education to indicate that the location of the place of study (i.e. learning place) is away or separated from the institution (the teaching place). This quality differentiates it from the traditional classroom, learning that is within the confines of the institutional walls, also known as a closed system (Khan, 2007). With the increasing digital literacy of learners and the availability of a variety of ed-tech devices, the use of a variety (or blend) of approaches/strategies for learning is employed to achieve flexible learning. This can be done by combining (blending) face-to-face classrooms, live online learning (synchronous) and self-paced learning (asynchronous), or many other blends of approaches (Singh, 2003).

The blend can be obtained by combining learning approaches from the following three categories:

1. Live physical pattern (of synchronous learning): These include classroom lessons and lectures, hands-on laboratory and workshop activities, and field trips.
2. Live online learning pattern (of synchronous learning): These include virtual classrooms, web seminars and coaching, instant messaging/chats, and video conference calls.
3. Self-paced pattern (of asynchronous learning): They consist of the use of online documents and web pages, online assessment tests, surveys, recorded video, and voice events.

Framework for Flexible Learning

Framework in this context is a basic structure that underlies a concept and supports its existence. Some studies have identified the significant factors that contribute to meaningful flexible learning (Khan & Smith, 2006; Komiszowski, 2004.). These factors that relate to flexible learning in tertiary institutions and their corresponding descriptions/indications constitute a practical framework. Some of them are listed as follows.

Institutional Category: This defines the provision of administrative and academic support related to online learning as services to students. The creation of a distance learning unit in tertiary institutions falls under this category.

Management and Technological Category: This relates to the maintenance of an online learning environment with the required technological infrastructures for the distribution of information. The setting up of ICT centers in institutions, e-libraries, and internet facilities with hardware and software acts as a motivation for students to flexible learning.

Pedagogical Category: This refers to the availability of digitally competent teachers/learners and the use of appropriate learning strategies to foster flexible learning. The organization of seminars/workshops in tertiary institutions to equip teachers and learners with the digital skills to operate learning management systems (LMS) and manage online learning content relates to this category.

Resource Support: This category refers to the provision of online support in terms of resources required to foster meaningful flexible learning. The provision of data bonuses, accessible tools, and usable devices in tertiary institutions belong to this factor.

Evaluation Category: This addresses the assessment of learners and the evaluation of the learning programmes, approaches, or strategies. From this framework, important decisions should be made on the design and implementation of flexible learning in an institution. Lecturers and faculty members can decide on the modes of blended learning that could be more suitable for their environment and their type of students. The focus of this paper is the evaluation category. How can flexible learning be assessed considering the variety of blends that it accommodates? A common blend of flexible learning in tertiary institutions is the asynchronous online mode, used in most distance learning units. However, in the use of a blended mode of teaching for any course in the regular programmes of institutions, asynchronous teaching/learning can be embedded.

Asynchronous Course Delivery

In this mode of course delivery, students are given the opportunity to access course contents online, at any time,

in any place from their technological devices. If it is the only method used in a programme, then learners complete their studies at their own pace. Hence it can be used for part-time studies where learners need a high level of flexible schedules that are convenient for them to study courses. In this paper, asynchronous learning is considered as part of the strategies for achieving a blended learning mode when it is combined with other strategies. The combinations can be as follows:

Blended/Hybrid Learning Designs (including asynchronous learning):

A course can be delivered with a combination of face-to-face (F2F) and asynchronous modes. This is most common in tertiary institutions in developing countries in this post-pandemic era. Course delivery can also be done by combining synchronous and asynchronous online modes. Martin et al (2020) referred to this combination as 'bichronous' online learning, which is not very common in the current tertiary institutions, though it is practiced.

Implementing Asynchronous Course Delivery:

The effective delivery of the content of a course in asynchronous learning has been shown to be very significant in achieving learners' satisfaction in online courses (Kumar & Kumar, 2020). Studies show that it is most significant in ensuring better and overall learning, leading teacher presence, availability of internet connection and ICT devices (Kumar et al, 2021). Furthermore, Schoenfeld-Tacher and Dorman (2021) found no difference in the performance of veterinary preclinical students taught using asynchronous course delivery mode and that of those taught using F2F mode. How is effective course content delivery in asynchronous mode achieved? The following guidelines have proved helpful from various studies, referred to earlier.

Learners should be provided with the course content and clearly defined objectives. The expectations should be vivid.

Platforms for interactions in the course delivery should be provided. Dynamic online collaboration or discussions should be facilitated to engage learners.

Learners should be encouraged to evolve their personal schedules that will help them meet the deadlines for completion of learning tasks,

Opportunity should be provided for learners to engage in self-testing through quizzes.

Online resource links that are related to the course contents and objectives should be provided to learners.

Activities that motivate learners to practice critical thinking skills should be included.

Learners should be promptly and actively guided and given feedback as they post their discussions in the platforms/ Their posts makes their thinking and learning visible.

Use of Essential Tools for Asynchronous Course Delivery: The tools for distributing course contents include emails (with attached text documents), discussion forums, recorded video and audio lectures, quizzes, assignments, self-guided assessments, resource (or online) links related to the course content, relevant games, and variety of engaging activities (like video demonstrations, research projects, student presentations, and individual student projects). Online tools like google.docs and Dropbox could be used as tools for collaboration.

Challenges in Asynchronous Course Delivery

Studies have revealed that a lack of instructor interaction was a perceived barrier to learners' satisfaction in asynchronous teaching (Schoenfeld-Tacher and Dorman, 2021; Demarchi, 2019; Gillet-Swan, 2017; Jorgensen, 2003). It requires intentional self-discipline for the learner to give full attention to the course delivery. The challenges of asynchronous learning have been addressed using appropriate frameworks for course delivery in higher institutions. The course contents are designed to cater to the diversity of the learners, the level of available technology, and the assessment modes. In tertiary institutions, the focus of asynchronous course delivery is collaboration, interaction, and communication in distributing content online. Prior to the pandemic, Kurubacak and Yuzer (2007) identified some essential elements that exist in a macro-level framework for asynchronous course content irrespective of the level of development of any nation. They are the **digital gap** (at the *societal level*); **learning needs, styles, and strategies** (at the *institutional level*); **technological literacy, infrastructure, and readiness of staff and students** (at the *technology level*); and the **types of assessment and feedback** (at the *evaluation level*). Designing regular course assessments (Kumar and Kumar, 2020) and creating engaging activities (Simpson, 2006) have been used to achieve enhanced learners' motivation, collaboration, attention, and performance (Harackiewicz et al, 2016).

Strategies for Making Asynchronous Course Delivery Effective

Focus students' attention on the learning objectives and expectations for every activity. Asynchronous learners will be more engaged when they are provided with clearly defined course outlines, specifying the skills they should acquire throughout the course. The expectations regarding the weekly hours they should set aside for the coursework, assignments, and activities they should carry out, the estimated time for them to receive feedback on their assignments, and the plans for receiving responses to their inquiries and emails they posted should be communicated to them.

Variety of interactive activities should be designed within the course delivery. Interactive activities like the use of prompts, generating anticipation guides, guided notes with twists, and quizzes help to engage them as they watch the recorded video or podcasts. Anticipation guides enable students to generate their own questions they could answer from recorded video or audio materials while guided notes with twists require them to supply some missing words or content from lecture slides (Major et al, 2016).

Facilitate online discussion with discussion forums. These are used to provide students with the opportunity to collaborate and interact with one another by posting their answers to some questions, reply other students' posts, interpreting some course content, or writing comments.

Provide related resources for students from websites and online links. This helps to enrich students' access to relevant documents and articles.

Break the course contents into bite-size modules. This makes it easier for students to retain knowledge, review specific topics, and pay attention as they watch to listen to several shorter, (instead of exceedingly long) videos.

Provide short assignments and quizzes on each module of the course materials to enhance self-guided engagement and motivation.

Provide targeted feedback on the assignments and quizzes. Timely feedback enhances learning and motivation.

Conduct surveys to evaluate strategies and tap into the factors that motivate a particular group of students. Audience research through surveys and focus groups helps to identify what motivates a particular learning community.

Facilitate group collaboration using peer feedback. Peer feedback provides peer support like the social interactions in the traditional classroom

Harness the use of stories and real-world situations to boost motivation. Humor, entertainment, and gamification can be incorporated into course delivery to reduce isolation while maintaining focus on course objectives.

Provide an online facilitator or virtual assistant. This can guide the overall learning experiences and provide regular assistance (e.g technical) and support to learners.

Use the institutions' learning management system (LMS) to deliver the course materials. LMS such as Moodle, Microsoft Teams, Google Classroom, Edmodo, Blackboard, and Canvas by Instructure provides safe, reliable, and flexible learning environments for course delivery in tertiary institutions.

Assessment of Asynchronous Learning in Higher Education

In higher education, the current emphasis on online assessment is authentic assessment. Authentic assessment, in online learning (including asynchronous learning), is designed to increase learner engagement, develop higher-order skills, and meet expected employment needs (Conrad & Openo, 2018). Assessment is considered the heart of the learning experience. Hence, learners are expected to be motivated to engage in relevant assessment tasks, as active participants, in the same way, they are encouraged to experience greater autonomy in flexible learning.

Web-based Assessment Framework

Authentic web-based assessment in higher education is designed to follow an interactive participatory model. This model encourages the use of multi-dimensional assessment strategies, more learner-centered assessment, and performance-based assessment. Assessment is made to be less teacher-dominated and includes self and peer-assessment activities. It emphasizes alternative assessment in which assessment is integrated with the learning process/cycle, and includes real-life performance, unlike the traditional assessment. These terms, authentic, alternative, integrative and holistic assessment are synonymous. Students contribute to the assessment process as active participants, using communication tools in asynchronous networks. In this framework, the use of the web to support

assessment offers greater flexibility than in the traditional method (McLoughlin & Luca (2001).

Facilitating multi-dimensional assessment techniques in asynchronous learning

Assessment activities are used to facilitate meaningful learning in the flexible mode. Vonderwell et al (2007) described it as an “assessment for learning” in which feedback is used to motivate students to assess their own level of learning and improve to achieve the course objectives. This is opposed to “assessment of learning” which is for grading and reporting purposes. The online techniques for this assessment include the following.

1. *Quizzes, in multiple-choice, short answer, completion, dichotomous (true/false), essay types.* There are variety of tools for creating online quizzes like 'thrive quiz builder', 'interact'. 'Leadquizzes', but 'google form' is commonly used in tertiary institutions.
2. *Self-assessment tools like rating scales and checklist types.* There are variety of online self-assessment rating scales, but they can be developed at institutional levels for various courses or through the learning management systems (LMS).
3. *Web-based examinations of various categories* Variety of online tools like Socrative, Kahoot, Quizziz, and Quizlet are used to assess students' learning and offer prompt feedback to them. Teachers can use tools within the learning management system approved by the institution.
4. *Assignments of various types* These can be communicated to students in a variety of ways like emails and attachment, text messaging, and preferably through the LMS.
5. *Discussion posted in online platforms.* In a discussion platform learners can converse or dialogue using texts, videos, audios, and imageries. Every member of the platform accesses the posts and makes individual comments. Tools like padlets and flipgrid are employed for online discussions.
6. *Projects.* In a project work, individual students are required to perform some tasks in order to demonstrate mastery of concepts in a course. Students can present and discuss their project work online using appropriate technology to share their documents and have their progress tracked.
7. *Group work.* Like project work, group work can be presented online through video records and shared documents. It could require peer assessment of members of the group.
8. *Learning journals* These are instruments with which the learners document of their growth in knowledge and share it online.
9. *E-portfolio.* Using e-portfolio, learners compile facts about their own competence acquired in a course and share it online.
10. *Digital badges* are used to break down learning into units that require learners to demonstrate mastery of associated outcomes. They are used in an online assessment and recognition of students.
11. *Rubrics* are used to communicate course objectives to students, in addition to the criteria for success, in all components (written, oral or visual). As an assessment tool, they are used to differentiate students' levels of performance on a given learning activity.
12. *Social media assessment platforms like **wiki** and **blog**.* Wiki is a collection of online spaces for posting assignments and sharing information. A blog is used to generate group discussions and for posting information generated by learners. Wiki and blog can be used to establish a student's performance in a given activity in an online space.

The effective use of these techniques depends largely on the competence, readiness, and innovativeness of the higher education teacher in addition to the availability of adequate ICT infrastructure in the institutions.

Conclusion

This paper presents flexible learning as the direction in which online learning is expanding in higher education in the digital age. Considering asynchronous teaching and learning, the paper argues that flexibility in assessment is also being focused on in higher education. The current emphasis on authentic assessment requires the use of varieties of strategies, as discussed. It is expected that the effective use of the strategies makes the assessment in asynchronous learning compare more favorably with the traditional assessment.

Recommendations

1. For the effective use of these flexible modes of assessment, the provision of adequate technological infrastructure is a necessity.

2. The readiness of the higher education teachers should be aroused by in-service training on the use of the digital tools in assessment.
3. Specifically, robust learning management systems should be available in all higher education institutions in the current dispensation.

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