African Conference on Information Systems and Technology

THE 8TH ANNUAL ACIST PROCEEDINGS (2022)

Aug 26th, 2:25 PM - 2:50 PM

Adapting an Online Learning Quality Assurance Framework in a Developing Country Setting: The Case of a HEI in Malawi

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ABSTRACT

Covid-19 prompted many higher education institutions (HEIs), even in developing countries like Malawi, to abruptly shift from their traditional face-to-face mode of delivery to online learning. However, quality issues with online learning remain one of the greatest challenges to acceptance of online learning by many students and stakeholders. This paper presents an action research based study at the Malawi University of Science and Technology, in which an online learning quality assurance framework is adapted to a developed country setting. The adapted framework builds on the Online Learning Consortium (OLC) Quality Scorecard for the Administration of Online Programs. The contextualization and validation of the framework is done using a modified mini-Delphi technique. Validation of the adapted framework identified key issues including financing of online learning, IT infrastructure challenges, lack of faculty training in online teaching and need for proper quality assurance instruments for monitoring online learning.

Keywords

Online learning framework, online learning, blended learning, quality assurance, contextualizing online learning framework

INTRODUCTION

Covid-19 prompted many higher education institutions (HEIs) in developing countries to abruptly shift from their traditional face-to-face mode of delivery to online learning (Matizirofa, 2021). This was necessary due to social distancing restrictions employed to combat the pandemic, as directed by government regulation. This meant that universities had to turn to online learning to avoid interrupting their academic calendars (Matizirofa, 2021).

However, this abrupt adoption of online learning had so many challenges, including lack of general acceptance of online learning by stakeholders including students, mainly due to quality issues in online learning (Adnan & Anwar, 2020; Agustina & Cheng, 2020). However, quality assurance remains one of the greatest factors that determine acceptance of a mode of delivery in education contexts (Machumu & Kisanga, 2014). It is therefore imperative that quality assurance instruments are set up and used by HEIs to gauge themselves in their readiness as well as implementation of online learning.

One popular online learning quality assurance scorecard is the OLC Quality Scorecard for the Administration of Online Programs (Online Learning Consortium, 2021) which was developed by the Online Learning Consortium. The scorecard has seven quality assurance pillars, namely, Institutional/Administration Support (8 quality indicators); Technology Support (7 indicators); Course Development/Instructional Design (18 quality indicators); Teaching and Learning (4 quality indicators); Faculty Support (9 quality indicators); Student Support (15 quality indicators); and Evaluation and Assessment (9 quality indicators). The scorecard components are described in Table 1.

Component	Number of Quality Indicators	Description
Component 1: Institutional / Administration Support	8	Assesses how online learning has buy-in from top institutional leadership and administrators.
Component 2: Technology Support	7	Assesses the readiness of technology infrastructure for online learning.
Component 3: Course Development and Instructional Design	18	Assesses the effectiveness of instructional design approaches and pedagogical elements which are essential for student satisfaction and learning outcomes in online courses.

Component 4: Teaching and Learning	4	Assesses the manner in which online teaching and learning are conducted.
Component 5: Faculty Support	7	Assesses technical, pedagogic and facilitation support needed for instructors during the design and delivery of online courses.
Component 6: Student Support	15	Assesses technical and administrative support needed for online learners.
Component 7: Assessment and Evaluation	9	Assesses progress of online learners and other quality assurance indicators.

Table 1: Components of the OLC Quality Scorecard for the Administration of Online Programs

Popular online learning quality assurance instruments such as the OLC Quality Scorecard for the Administration of Online Programs were, however, designed for a developed country context and perspective. However, wholesale adoption of existing online learning quality assurance instruments which are mainly developed for HEIs in developed countries can be a problem for HEIs in developing countries as the operating environment is fundamentally different in many aspects such as social-economic context and IT infrastructure context (Machumu & Kisanga, 2014). Strydom (2000) specifically called for more research in quality assurance in higher education with respect to the development and establishment of quality assurance frameworks and models uniquely relevant to developing countries, particularly in Africa.

This paper, therefore, presents an action research based study at Malawi University of Science and Technology in Malawi, one of the developing countries in sub-Saharan Africa. It was imperative for the institution to have an online learning quality assurance instrument as it had also abruptly shifted to online mode of delivery due to Covid-19. The objective of the action research was, therefore, to adapt a relevant online learning quality assurance framework that would be suitable within the context of the institution considering developing country realities. The research had two research questions: RQ1- What are the quality pillars of an online learning quality assurance framework that would be reflective of the contextual realities of a HEI in developing country like Malawi? RQ2 - What are the relevant corresponding quality indicators for each identified pillar of the online learning quality assurance framework?

The framework adapted built on the OLC Quality Scorecard for the Administration of Online Programs but contextualized to a developed country setting. Validation was done using a modified mini-Delphi arrangement (Boberg & Morris-Khoo, 1992).

LITERATURE REVIEW

Quality assurance in higher education institutions is responsible for safeguarding the public interest in sound academic standards of higher education qualifications (Machumu & Kisanga, 2014). Higher education institutions in the developing world, including Africa, also have to adhere to quality assurance norms in order to compete well globally as well as to satisfy local expectations hence must also establish robust quality assurance systems (Machumu & Kisanga, 2014). Indeed, Strydom (2000) specifically called for more research in quality assurance in higher education with respect to the development and establishment of quality assurance frameworks and models uniquely relevant to developing countries, particularly in Africa.

There are several online learning quality assurance frameworks developed outside Africa (Pedro & Kumar, 2020). For example, the OLC Quality Scorecard was developed in the United States of America. On the other hand, the Asian Association of Open Universities Quality Assurance framework was developed in Asia. The ACODE Benchmarks for Technology Enhanced Learning was developed in Australia. The Sequent Handbook for Quality in Elearning procedures was developed in the European Union. However, the challenge with these frameworks from developed countries is that most do not directly fit to developing countries due to lack of improved technologies, funding, context etc (Machumu & Kisanga, 2014).

Nevertheless, there have also been some online learning quality assurance frameworks developed within Africa (Pedro & Kumar, 2020). For example, the Africa Virtual University Quality Assurance Framework for Open, Distance and eLearning Programmes and the Distance Higher Education Programmes in a Digital Era: Good Practice Guide for South Africa. The challenge with these frameworks is that they are not necessarily tailored for online learning but rather also for distance learning. In our case, the study sought a tailored online learning quality assurance framework.

THEORETICAL FRAMEWORK

This research work is an intersection of three knowledge domains namely; quality assurance, higher education and online learning as also used in Fresen (2006). Figure 1 presents situation of the study in three knowledge domains of quality assurance, higher education and online learning.

Quality Assurance, in general, may be defined as a function that defines and implements the processes necessary to produce quality products and services (Espinoza & González, 2013). However, the term quality assurance in higher education maybe defined as practices whereby academic standards, i.e., the level of academic achievement attained by higher education graduates, are maintained and improved (Dill, 2007). In this study, the products are high quality graduates that have used online learning as one aspect of their mode of learning. The underlying quality assurance philosophy used in this study is Total Quality Management (TQM) (Venkatraman, 2007) which harnesses the efforts of everyone in an organization to achieve quality assurance. This is based on the realization that without the commitment and involvement of every stakeholder, it is difficult to attain quality products. In this research, quality assurance in online learning in higher education entails the involvement of all stakeholders from faculty, students, administrators, technical staff, guardians, etc.
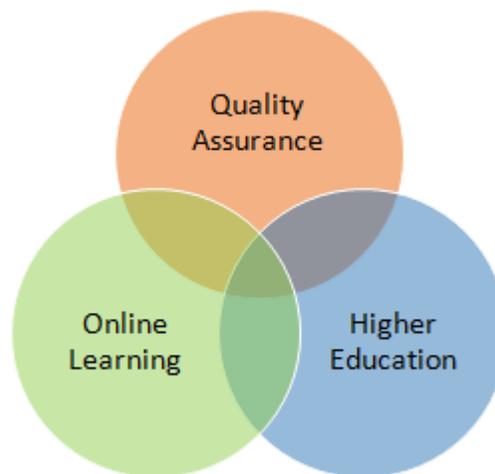
Figure 1: Situation of study in three knowledge domains of quality assurance, higher education and online learning.

Validation of quality assurance instruments in online learning in higher education should therefore involve all stakeholders. Online learning is viewed from the perspective of the Community of Inquiry (CoI) framework which is a process model of online learning which views the online educational experience as arising from the interaction of three presences–social presence, cognitive presence, and teaching presence (Swan et al., 2009). A quality assurance framework should also address these dimensions presence in an online learning programme.

METHODOLOGY

As an action research based study, firstly the urgent need for an online learning quality assurance framework to guide the online learning processes was identified. The researchers then drew up a plan of action which included doing a desk review of existing online learning quality assurance instruments. From this, the OLC Quality Scorecard for the Administration of Online Programs was selected to be more applicable to the situation at hand due to the quality pillars and quality indicators indicated. However, the framework needed to be contextualized and validated by various stakeholders as per the recommendation in Machumu & Kisanga (2014) that quality assurance frameworks need contextualization and validation by stakeholders.

Several methods for contextualizing and validating quality assurance frameworks for online learning exist and these include: reviewing research literature related to effectiveness in online learning; seeking input from an expert panel; undertaking empirical research; undertaking survey research; conducting pilot projects; and drawing on case studies (Inglis, 2008). In this study, input was solicited through a modified mini-Delphi arrangement in which participants were brought together and could debate and reach consensus, firstly, on each quality pillar and secondly, on each of the quality indicators under each pillar . The participants were identified through   purposive sampling, and comprised of stakeholders including two administrators, four faculty, two IT support staff and two student representatives (student union president and deputy president).

PROPOSED ADAPTED FRAMEWORK

The proposed adapted framework, illustrated in Figure 2, has seven components (pillars) just as the OLC Quality Scorecard for the Administration of Online Programs. However, Pillar 1 has been renamed as Institutional Support instead of Administration/Institutional Support as stakeholders observed that administration support is essentially captured in Institutional Support. Pillar 7 has been renamed as Monitoring and Evaluation instead of Assessment and Evaluation. This is to emphasize the critical role of monitoring the quality assurance process in the overall implementation of quality assurance. Moreover, assessment is also a component of monitoring.

Each of the seven pillars of the adapted framework is described in Table 2. The quality indicators for each pillar are given in Appendix 1.
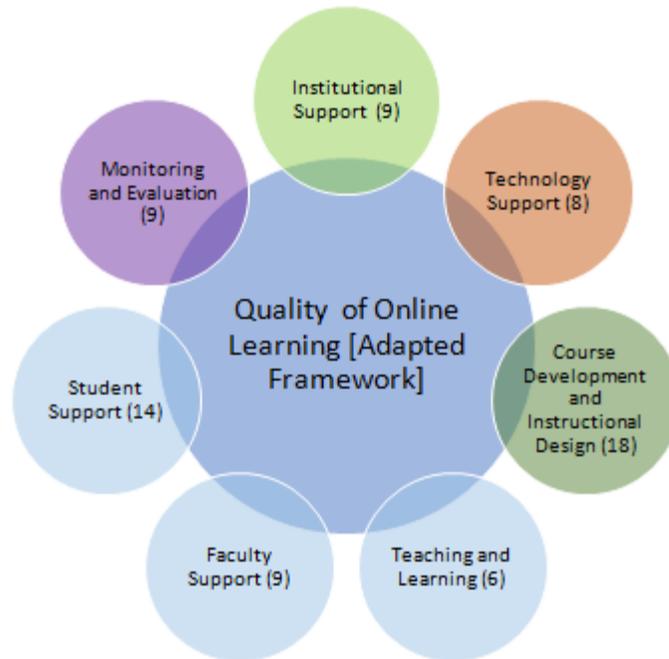
Figure 2: Illustration of the adapted quality assurance framework for online learning at the institution.

Pillar	Number of Quality Indicators	Description
Pillar 1: Institutional Support	9	Assesses how online learning has buy-in from top institutional leadership and administrators.
Pillar 2: Technology Support	8	Assesses the readiness of technology infrastructure for online learning.
Pillar 3: Course Development and Instructional Design	18	Assesses the effectiveness of instructional design approaches and pedagogical elements which are essential for student satisfaction and learning outcomes in online courses.
Pillar 4: Teaching and Learning	6	Assesses the manner in which online teaching and learning are conducted.

Pillar 5: Faculty Support	9	Assesses technical, pedagogic and facilitation support needed for instructors during the design and delivery of online courses.
Pillar 6: Student Support	14	Assesses technical and administrative support needed for online learners.
Pillar 7: Monitoring and Evaluation	9	Systematic process of collecting, analyzing and using information to track progress of online learning at an institution.

Table 2: Description of the pillars of the adapted online learning quality assurance framework.

KEY ISSUES IDENTIFIED IN THE CONTEXTUALIZATION AND VALIDATION OF THE FRAMEWORK AND DISCUSSION

Several key issues were identified by participants in the course of contextualization and validation of the framework as follows:

Institutional Support

The participants emphasized need for having institutional buy-in for online learning and this can be exemplified through having a clear governance structure on online learning. Moreover, it is not enough having a budget for online learning in an institutional budget but actual budget allocated is of paramount importance. To this end, quality indicator 7 under this pillar was paraphrased to read: *The institution has a budget allocation, including human and financial resources, in order to effectively support the mission of online education.*

Technology Support

Participants noted that Information Technology infrastructure such as learning management systems, Internet access and access gadgets are key to online learning. Indeed, in many developing countries, including Malawi, Internet access, particularly in rural areas, remains a challenge (West, 2015). These factors determine the mode of online learning. Clearly, synchronous learning tools such as video conferencing will be a challenge to many rural based students. However, to promote student-lecturer interaction and liveliness in class, many students prefer a combination of synchronous and asynchronous communication in online learning (Giesbers et al., 2014).

Participants also noted the need to provide technology support for those with disabilities so that they can also participate fully in online learning. This is also in line with recommendations by Roberts et al. (2011).

Course Development/Instructional Design

Participants, emphasized that for online learning, policies should be in place to ensure instructional materials are easily accessible to the student and easy to use, with an ability to be accessed by multiple operating systems and applications. Moreover, instructional materials need to be easily accessed by students with disabilities. The course structure should also ensure that all online students, regardless of location, have access to library/learning resources that adequately support online courses. Opportunities/tools should also be provided to encourage student-student collaboration through web conferencing and instant messaging, as appropriate. This reduces the risk of isolation (Stoytcheva, 2021).

Teaching And Learning

Participants noted that instructors should use effective strategies to create a presence even in an online course. This is also in line with with the Community of Inquiry (CoI) which views the online educational experience as arising from the interaction of three presences–social presence, cognitive presence, and teaching presence (Swan et al., 2009). The environment should also be conducive for teaching and learning online. Working from home for faculty should be conducive e.g. without distractions. Similarly, in developing countries, like Malawi, students may lack a conducive environment for online learning due to lack of electricity, physical space and may even be involved in household chores. This can be distractive to a student in learning online (Chaputula, 2012). Two more quality indicators were thus added to this pillar: *The environment is conducive for teaching and learning online* and *Teaching and learning online is conducive to persons with disabilities.*

Faculty Support

Participants also noted that it is important that faculty receive training, assistance and support to prepare them for course development as well as how to teach online. This is important as most faculty may only be familiar with face to face teaching methods . Faculty should also have access to training, online resources and support related to Fair Use, plagiarism, and other relevant legal and ethical concepts. This is important as it is easy to post copyrighted textbooks online which may infringe on copyright requirements (Denney et al., 2021).

Student Support

Participants emphasized that students should have access to minimum technology skills and equipment required before starting an online course. Access to appropriate access gadgets such as laptops, remain a huge challenge for many students in developing countries like Malawi, as most students come from low-income families (Chaputula, 2012). Students should also have access to required course materials in print and/or digital format,

such as textbooks, book suppliers, and delivery modes prior to course enrollment. Opportunities should also be provided to engage students with the course and institution in order to minimize feelings of isolation as also explained by (Stoytcheva, 2021). A course delivered online should be student-centered and should address online student needs rather than trying to fit existing on-campus services to the online student.

Monitoring and Evaluation

Participants also noted that course assessments in online learning, should be done using a process that applies specific established standards (e.g. continuous assessments, end of semester assessments, internal and external moderation of final assessments, departmental and senate assessments, etc). A process should also be in place and followed for the institutional assessment of faculty online teaching performance. A process should also be in place and followed for the assessment of stakeholder (e.g., learners, faculty, staff) satisfaction with the online course. Stakeholder satisfaction is one key element to acceptance of online learning (Yawson & Yamoah, 2020).

The first quality indicator in this pillar was paraphrased as follows: *Course assessments are done using a process that applies specific established standards. (e.g. continuous , mid semester, end of semester, internal and external moderation, departmental, school, senate assessments*).

CONCLUSION AND FUTURE WORK

This paper reported an action research based study at the Malawi University of Science and Technology in Malawi, in which an online learning quality assurance framework, used in a developing country, was adapted. The adapted framework builds on the OLC Quality Scorecard for the Administration of Online Programs but contextualized to a developed country setting. Validation of the adapted framework was done using a modified mini-Delphi arrangement. The first key contribution of the paper is the contextualized and validated online learning framework for a higher education institution in a developed country. The second key contribution are identified key issues to be considered when rolling out and implementing online learning in a developing country setting which include proper and budgeted financing of online learning initiatives, need to realize IT infrastructure challenges such as lack of access gadgets and insufficient bandwidth in rural areas where a majority of students may be based, lack of faculty training in online teaching and need for proper quality assurance instruments for monitoring online learning. The limitation of the study is that the framework has been contextualized and validated in a single institution setting. Nevertheless, the methodology used in adapting the framework can be used in other institutions. As part of future work, the researchers will conduct similar studies in other institutions with similar contexts in Malawi.

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APPENDIX 1

Quality indicators for Pillar 1 (Institutional Support)

1. The institution's mission, value and strategic plan are inclusive of online learning and the structure for delivering online education supports the institution's mission, values and strategic plan.
2. The institution has a buy in strategy for its stakeholders (management, staff, students, and the community) to embrace online learning.
3. The institution has clearly defined and communicated the strategic value of online learning to all stakeholders (students, faculty, staff, community, etc.).
4. The institution has a governance structure in its organogram to enable clear, effective and comprehensive decision making related to online education.
5. The institution has a process to enable systematic and continuous improvement related to the administration of online education.
6. The institution has a budget for online learning, including human and financial resources.
7. *The institution has a budget allocation, including human and financial resources, in order to effectively support the mission of online education.*
8. The institution has policy and guidelines (including regional accrediting requirements) that confirm a student who registers in an online course or program is the same student who participates in and completes the course or program and receives academic credit.
9. The online program's strategic plan is reviewed for its continuing relevance and periodically improved and updated.

Quality indicators for Pillar 2 (Technology Support)

1. The technology delivery systems are highly reliable and operable with measurable standards being utilized such as system downtime tracking or task benchmarking.
2. A centralized technology system provides support for building and maintaining the online education infrastructure.
3. A documented technology plan that includes electronic security measures (e.g., password protection, encryption, secure online or proctored exams, etc.) is in place and operational to ensure quality, in accordance with established accreditation standards and regulatory requirements.
4. Institutional technology systems [related to online programs] are administered in compliance with established data management practices such as the Information Technology Service Management (ITSM) standards, which include appropriate power protection, backup solutions, disaster recovery plans, etc.
5. The institution has established a contingency plan for the continuance of data centers and support services in the event of prolonged service disruption.
6. The course delivery technology is considered a mission-critical enterprise system and   supported as such.
7. Faculty, technical staff, and students are supported in the development and use of new technologies and skills.
8. Technology is available to support access to instructional materials by persons with disability via alternative instructional strategies and/or referral to special institutional resources.

Quality indicators for Pillar 3: Course Development/Instructional Design

Course Development (Institution or Program/Level)

1. Guidelines regarding minimum requirements for course development, design, and delivery of online instruction (such as course syllabus elements, course materials, assessment strategies, faculty feedback) are in place, periodically reviewed and followed.
2. Course development guidelines are in place and followed to ensure courses are designed so that students develop necessary knowledge and skills to meet measurable course and program learning outcomes.
3. Instructional materials and course syllabi are reviewed periodically to ensure they meet online course and program learning outcomes.
4. Student-centered instruction is considered during the course development process.
5. There is consistency in the design of course navigation and utilization of course components to support student retention and quality.
6. Course design promotes both faculty and student engagement.
7. A process is followed that ensures that permissions (Creative Commons, Copyright, Fair Use, Public Domain, etc.) are in place for appropriate use of online course materials.
8. Policies are in place to ensure instructional materials are easily accessible to the student and easy to use, with an ability to be accessed by multiple operating systems and applications.
9. Usability tests are conducted and applied, and recommendations based upon Web Content Accessibility Guidelines (WCAGs) are incorporated.
10. Instructional materials are easily accessed by students with disabilities via alternative instructional strategies and/or referral to special institutional resources.
11. Curriculum development is a core responsibility for faculty (i.e., faculty should be involved in either the development or the decision making for the online curriculum choices).

Course Development (Course Level)

12. The online course includes a syllabus outlining course objectives, learning outcomes, evaluation methods, books and supplies, technical and proctoring requirements, and other related course information, making course requirements transparent.
13. The course structure ensures that all online students, regardless of location, have access to library/learning resources that adequately support online courses.
14. Links or explanations of technical support are available in the course (i.e., each course provides suggested solutions to potential technical issues and/or links for technical assistance).
15. Course embedded technology is actively used to support the achievement of learning outcomes.
16. Opportunities/tools are provided to encourage student-student collaboration (i.e., web conferencing, instant messaging, etc.) if appropriate.
17. Expectations for assignment completion, grade policy and faculty response are clearly provided in the course syllabus.
18. Rules or standards for appropriate online student behavior are provided within the course.

Quality indicators for Pillar 4: Teaching and Learning

1. Student-to-Student and Faculty-to-Student interaction are essential characteristics and are encouraged and facilitated.
2. Instructors use effective strategies to create a presence in a course.
3. Feedback on student assignments and questions is constructive and provided in a timely manner.
4. Students are provided access to library professionals and resources to help locate, analyze, evaluate, synthesize and ethically use a variety of information resources.
5. *The environment is conducive for teaching and learning online.*
6. *Teaching and learning online is conducive to persons with disabilities.*

Quality indicators for Pillar 5: Faculty Support

Course Development Support

1. Faculty have access to university policy about intellectual property that addresses online learning.
2. The institution ensures faculty receive training, assistance and support to prepare faculty for course development.
3. Technical assistance is provided for faculty during online course development.
4. Faculty have access to training, online resources and support related to Fair Use, plagiarism, and other relevant legal and ethical concepts.

Teaching Online Support

5. The institution ensures faculty receive training, assistance, and support to prepare faculty for teaching online.
6. Faculty is provided on-going professional development related to online teaching and learning.
7. Technical assistance is provided for faculty during online teaching.
8. Clear standards are established for faculty engagement and expectations around online teaching (e.g. response time, contact information, etc.) and periodically reviewed.
9. Faculty is informed about institutionally supported education technologies and the selection and use of new tools.

Quality indicators for Pillar 6: Student Support

1. Students have access to minimum technology skills and equipment required before starting an online course.
2. Before starting an online course, students have access to information about the course, including books and supplies, technical and proctoring requirements, and student support services.
3. Students have access to required course materials in print and/or digital format, such as textbooks, book suppliers, and delivery modes prior to course enrollment.
4. Opportunities are provided to engage students with the course and institution in order to minimize feelings of isolation.
5. Course is student-centered and addresses online student needs rather than trying to fit existing on-campus services to the online student.
6. Institutional communications (website, email, letters, etc.) provide clear and timely information to students on where to enlist assistance (advising, billing, library, etc.).

7. Students are provided non-instructional support services such as admission, financial   assistance, registration/enrollment, etc.

8. Students have access to appropriate non human and human technical assistance throughout the duration of the course?

9. Students have access to effective academic and career counseling.

10. Students have access to personal counseling.

11. Policy, processes and resources are in place to support students with disabilities.

12. Throughout the duration of the course/program, students have access to training and information they will need to secure required materials through electronic databases, interlibrary loans, government archives and any new services offered.

13. Online tutoring is available as a learning resource.

14. The institution and/or the instructor provides guidance/tutorials for students in the use of technologies used for course delivery.

Quality indicators for Pillar 7: Monitoring and Evaluation

1. *Course assessments are done using a process that applies specific established standards. (e.g. continuous , mid semester, end of semester, internal and external moderation, departmental, school, senate assessments)*

2. A variety of data (academic and administrative information) are used to regularly and frequently evaluate course effectiveness and to guide changes toward continual improvement.

3. Intended learning outcomes at the course and program level are reviewed regularly to ensure alignment, clarity, utility, appropriateness and effectiveness.

4. Course evaluations collect feedback on the effectiveness of instruction and the quality of online course materials in relation to faculty performance evaluations.

5. A process is in place and followed for the institutional assessment of faculty online teaching performance.

6. A process is in place and followed for the assessment of support services for faculty and students.

7. A process is in place and followed for the assessment of student retention in online courses and programs.

8. Course demonstrates compliance and review of accessibility standards.

9. A process is in place and followed for the assessment of stakeholder (e.g., learners, faculty, staff) satisfaction with the online course.