Towards a Framework for the Assessment and Quality Assurance of Non-Traditional Learning Experiences

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Reference Formats (APA 7th Edition)
Dumezweni, N., Nxesi, N., & Mkhonza, L. (2024). Towards a framework for the assessment and quality assurance of non-traditional learning experiences. In M. L. Mokhele-Makgalwa, M. A. Mohale & T. L. Madise (Eds.), *Proceedings of the 40th AEAA Annual Conference on Reimagining Educational Assessment in the Age of Multiple Dimensions of Learning in a Global Society* (pp. 154–169). ERRCD Forum. https://doi.org/10.38140/obp2-2024-11

Abstract: Non-traditional learning experiences have arguably gained momentum and prevalence in the education system due to their perceived flexibility, broader outreach, responsiveness, and inclusivity. However, the speed at which these alternative learning experiences have been institutionalised parallels growing concerns and antagonisms regarding their quality. First, the sluggish and rigid response to developing effective frameworks for assessing and quality-assuring non-traditional learning experiences can be counterproductive, stifling innovation and adaptation to new demands. Second, the lack of quality assurance hinders quality improvement, compromising the overall quality of the education system. These limitations have made it difficult for stakeholders to advocate for the uptake and integration of these non-traditional learning experiences into the broader education system. In light of these issues, the study employed a mixed-method approach to investigate what assessing and quality-assuring non-traditional learning experiences will entail, through the examination of literature and the development of survey questionnaires for participation from the following quality assurance bodies: Council on Higher Education (CHE), South African Qualifications Authority (SAQA), Council for Quality Assurance in General and Further Education and Training (UMALUSI), Quality Council for Trades and Occupations (QCTO), and Sector Education and Training Authorities (SETAs) provided valuable insights. The results indicated the key design considerations for institutions when developing their respective frameworks for quality assurance and assessment of non-traditional learning experiences. Respondents highlighted the importance of prioritising factors such as academic integrity, student information integrity, equity of access, and quality student experiences. The study's findings are anticipated to significantly contribute to the body of knowledge regarding non-traditional learning experiences in South Africa, offering a promising future for these innovative learning methods.

Keywords: Quality assurance, assessment, non-traditional learning experiences, regulatory framework, skills.

1. Introduction

The incremental adoption of teaching and learning technologies, accelerated by shocks such as COVID-19, has generated an appetite for the transition to online teaching and learning. Consequently, the education sector has experienced growth in the adoption of several non-traditional learning experiences (NTLEs) (Makalula-Kalumbi & Pitsoe, 2024, p. 63).

In line with these expansions, the formation of NTLEs has taken various forms, including online and/or e-learning, blended learning, internships/apprenticeships, self-directed learning, experiential learning, peer learning, and gamification, all aimed at meeting the needs of key

stakeholders. These educational formats have proliferated across all levels of the education system, including early childhood education, primary and secondary schooling, tertiary studies, and adult education. Technological advances have driven this shift by expanding digital tools and internet access, allowing for greater accessibility, flexibility, and personalised learning opportunities (Haleem et al., 2022). Additionally, changing workforce demands have prioritised skills over traditional credentials, demonstrating the ability to quickly equip individuals with the requisite skill sets—often at lower costs and in shorter timeframes (OECD, 2024, p. 30). Fundamentally, education has arguably evolved and become more democratic, facilitating greater access and inclusion, wherein personalised learning paths are supported by a focus on students' strengths and the ability to advance at their own pace—a component of the traditional format that has been repressed.

1.1. Problem statement

Correspondingly, quality assuring and assessing these NTLEs has presented a unique challenge due to the diverse and often unconventional nature of these educational formats. Compared to traditional methods, these approaches often lack standardised benchmarks and encompass a wide range of teaching methodologies and learning outcomes, making it difficult to achieve uniform quality assurance measures (Shet, 2024). The challenges are further compounded by the fact that traditional quality assurance and assessment frameworks have been designed for stable and predictable education models and have, to this extent, struggled to keep up with the dynamic and fluid nature of these programmes and platforms.

1.2 Research questions

- What should be the key principles and dimensions in quality assuring and assessing online learning experiences?
- What challenges are related to quality assuring and assessing non-traditional learning experiences?
- What methods or instruments are suitable for assessing and quality-assuring non-traditional learning experiences?

2. Literature Review

2.1. Non-traditional Learning Experiences

According to Tularam and Machisella (2018), traditional learning experiences are structured so that students sit and listen while the teacher directs the lesson. Similarly, Martirosov et al. (2023)define traditional learning as a teacher-centred approach that focuses on explaining topics from a textbook through lectures or reading texts. Parasuram et al. (2014) note that traditional learning experiences exhibit characteristics of rigidity, wherein problem-solving and critical thinking competencies are not prioritised. As a result, critics of conventional learning experiences consider non-traditional learning experiences (NTLEs) a favourable alternative for addressing these gaps. Proponents of non-traditional teaching methods praise them as

alternatives that offer a student-centred perspective, encouraging curiosity, creativity, and student participation in class activities. However, advocates of NTLEs have not fully illustrated the extent to which these approaches can ensure uniform standardisation, making quality assurance and assessment practices challenging to quantify and replicate. One example of an NTLE that has gained popularity in education is online learning.

2.1.1 Online learning

Kuhlmann et al. (2024) define online learning as a multidimensional ecosystem that occurs across different times and places, characterised by various instructional methods (such as in-person, blended, formal, and informal) and encompassing numerous types of media (including social media platforms, learning management systems, mobile devices, computers, and advanced technologies).

Similarly, the definition provided above aligns with Allen and Seaman's (2007) assertion that the spectrum between online education and traditional teaching to online learning is as follows:

- Traditional: Course content is typically delivered in writing or orally. Technology use is absent or limited.
- Web-facilitated: Lessons are facilitated through course management systems or web-based technologies.
- Blended/Hybrid: A course that combines online and face-to-face delivery.
- Online: These courses typically do not have face-to-face meetings and are facilitated chiefly online.

Broadbent and Poon (2015) caution that success in online learning environments requires learners to be more independent and to engage in the learning process autonomously and actively. The physical separation between student and teacher increases the demand for self-regulation in students' engagement in e-learning contexts. Consequently, Banson (2022) recognises that traditional regulation methods for learning are ineffective in this environment. Non-traditional learning experiences culminate in the transformation of teacher-led learning into self-directed and self-determined learning (Scott, 2015). As a result, self and co-regulation are increasingly gaining importance as methods of measuring learning progress, and these need to be reflected in the quality assurance and assessment structures of the education system. Where the literature falls short is in addressing the challenges associated with the quality assurance and assessment of non-traditional learning experiences.

To this end, Snyder (2013: p. 6) posits that the crux of the tension with these emerging non-traditional learning experiences in the form of online learning lies with "the centre (government), which is held responsible for the steering of the educational system but often finds itself confronted with a diffuse field of demanding and increasingly data-savvy stakeholders and fewer direct levers of control available to it." As such, the current landscape is characterised by

sprawling education networks, formats, and emerging platforms that present immense opportunities for the large-scale education of entire societies, no longer restrained by space or time.

At the same time, however, systemic paralysis or outright rejection of these innovative practices can result from these unorthodox learning and teaching methods due to a perceived lack of control and agility in quality assurance and clear assessment processes. Long-term studies tracking the effectiveness of quality assurance measures over time will be crucial for further understanding how the system needs to be structured and supported.

2.1.2 Quality Assurance and Assessment Regime in South Africa

Bond et al. (2023, p. 5) have described quality assurance as processes that ensure that provision is accountable, controlled, and compliant, and that it is improved using accreditation, audit, assessment, and external review approaches. This definition denotes that quality assurance has a dual mandate of enforcing accountability and facilitating enhancement or innovation. Furthermore, governance and regulation issues, medium of delivery, qualifications, organisational processes, administrative support, financial viability, course content, learning experience, and curriculum design become pertinent indicators of quality.

Within the South African context, the institution entrusted with ensuring the above attributes is Umalusi, which quality assures the assessments for public schooling and further quality assures and accredits assessments provided by private/independent schooling administered by the Independent Examinations Board (IEB).

2.1.3 Umalusi: Council for Quality Assurance in General and Further Education and Training

- Monitors and moderates students' achievements, primarily through external examinations.
- Evaluate whether education and training providers can deliver and assess qualifications and learning programmes and whether they are doing so to expected quality standards. Umalusi sets the accreditation standards that providers must meet.
- Evaluate the quality of qualifications. This mainly means looking at the curricula of different qualifications, the rules for how many subjects must be passed, and at what level to obtain a qualification. The issue surrounds the notion that educational institutions face contradictory pressures for change.

Quality assurance finds itself at a crossroads, balancing the autonomy required by private education providers with the need to standardise quality assurance and assessment frameworks. This standardisation is essential to ensure fit-for-purpose assessments in the schooling sector. Given this context, Umalusi's task is to facilitate an agile and responsive regulatory system that is self-critical and transparent, capable of matching the speed at which NTLEs emerge.

2.1.4 Challenges with quality assuring and assessing online learning

Some of the challenges associated with the quality assurance and assessment of online learning and its ecosystem are complicated by the diverse platforms through which online learning is administered, characterised by different features, tools, and capabilities, which make it difficult to establish uniform standards. Secondly, overarching questions regarding cheating and identity verification in virtual classrooms compromise academic integrity and authenticity. Thirdly, accrediting bodies may have different criteria for online programmes, and ensuring compliance with these standards can be challenging (Demir, 2021).

Moreover, access and equality in terms of affording opportunities for students of all socioeconomic and geographical backgrounds, particularly in South Africa, are pertinent considerations that online education needs to address. Timmis et al. (2015) underscore this structural flaw by highlighting concerns over social exclusion, new forms of digital divide, and the increasing risks associated with big data and the rise of learning analytics. Lastly, educators require continual professional development and adapted quality assurance processes to keep up with the rapid changes in technology and educational approaches (Yan, 2019; Mukalula-Kalumbi & Pitsoe, 2024).

Similar sentiments are illustrated by Baillie et al. (2013), who note that the challenges of introducing digital assessment in an online education framework comprise the following:

- Lack of relevant knowledge concerning alternative assessment forms and how to use digital technology in assessment.
- Lack of digital competence among academics and administrative staff.
- Major organizational changes cause a lack of time to learn and implement new digital solutions.
- No risk analysis/legal challenges.
- Lack of assessment policy within the institution.
- Lack of motivation among staff.
- Economic challenges/lack of resources
- Lack of cooperation within and between organisations.

In the final analysis, Bengoetxea et al. (2011: p. 8) contend that the "focus should not be on building one integrated quality assurance system for all sectors, but rather on increasing transparency and improving understanding of the different quality assurance systems, as well as fostering practical cooperation between the main quality assurance actors across various sectors, particularly in resolving bottlenecks for the recognition of qualifications."

2.2. Theoretical framework: Complex Adaptive Systems (CAS) theory

The Complex Adaptive Systems (CAS) theory is a framework used to understand the dynamics and behaviours of systems comprising interacting components. These systems exhibit high adaptability and complexity due to the interactions between their parts (Snyder, 2013). Inherent

in this understanding is the acknowledgement that the systems under review are in constant flux and present increased unpredictability, where the system is informed by diverse behaviours rather than linear, singular actions. It then becomes critical for quality assurance and assessment that these entities facilitate a conducive environment for trends to emerge by increasing interaction and communication within the system to its highest manageable level (ibid). Flexibility and feedback mechanisms become crucial components in regulating complex systems in the form of NTLEs, where it is difficult to enforce a one-size-fits-all approach to quality assurance and assessment.

NTLEs present a complex system as they involve a significant number of varying individuals engaged in simultaneous interactions, resulting in a plethora of behaviours geared towards adaptation to emerging circumstances. Moreover, system complexity is compounded by these agents devising projections and anticipating outcomes to better align themselves with what they believe the outcome of the change will be. Naturally, this evolving structure makes the quality assurance and assessment of NTLEs challenging to regulate (Holland, 1992). Ellis and Herbert (2011) argue that the "origins of quality assurance were predicated on rational reductionism and linearity. As a result, new forms of governance do not and fundamentally cannot neutralise traditional models but rather add further dimensions to them." Thus, Online Learning, viewed through the lens of the CAS framework, has the potential to illustrate the interacting component units, which can result in system-wide governance wherein quality assurance and assessment doctrines influence rather than control the regulation of NTLEs.

Preiser et al. (2018) note the following six features that characterise a complex system. The contextual feature denotes the importance of context, roles, and identities that give meaning to actions and behaviours. The second feature acknowledges that information and interactions are porous, and systems are open and not isolated. The CAS framework also highlights that systems exhibit diverse relational components and networks, including elements of hierarchical structures, emphasising that relationships matter.

Furthermore, systems are dynamic in that they illustrate periods of static and rapid change as a result of feedback loops, wherein there is no one clear action pathway. Systems are also adaptive through their ability for self-organisation, institutional memory, and capacity to anticipate. Finally, a key consideration in the analysis of complex systems is the understanding that some conditions can produce different outcomes, wherein small inputs have the potential to cause significant effects, and interventions can lead to unintended consequences.

Informed by the above considerations, the CAS framework assisted the study in recognising that the quality assurance and assessment of NTLEs is a dynamic process consisting of various complex features. These features were tested in the questionnaire design and data collected for the study. The utilisation of the CAS framework allowed the study to recognise the importance

of interactions and relationships between different components, which coincide and are critical in the quality assurance and assessment of NTLEs. Table 1 below illustrates these interactions.

2.2.1 Complex Adaptive Systems (CAS) theory framework – Quality assurance and assessment of online learning

- Acknowledges the dynamic and interconnected nature of educational environments

Table 1: CAS Framework illustrating interactions and relationships between various units

Indicators	System Design
Agents & Roles	**Students** Active participants and learners (engaging with non-traditional learning experiences).
	Instructors/Educators Facilitates and guides (supports the learning process) ☐ Experienced Data Science Educators
	Quality Assurance & Assessment Bodies Organisations/committees responsible for monitoring and ensuring quality education.
	Content Modules Learning materials and resources used. ☐ Video lecturers, Learner Management System, interactive assignments and assessment,support Services
	Technology Platforms Tools and systems used for delivering learning experience.
	Quality Assurance Interaction Agents
Mapping Interactions between Agents	**Students with Instructors** Engagement through feedback, assessment, and support.
	Students with content modules Interaction with learning materials, assignments, and activities.
	Students with Technology platforms Usage patterns, engagement metrics, and technical support.
	Instructors with content modules Course design, updates, and customization.
	Instructors with technology platforms Utilisation of tools and resources for effective teaching.
Evaluating Adaptation and feedback loops	Assess the ability of the system to respond to student needs and feedback.
	Mechanisms for regular updates and improvements based on data and feedback
	Evaluate how well the system supports personalised learning paths and adapts to different learning styles.
Analysing emergent Outcomes	Identify and measure emergent properties, i.e., student engagement, knowledge retention, and skills acquisition.
	Impact of the learning experience on student competence and quality of education.
	Consider unintended consequences and emergent challenges that may arise from the interactions within the system.
	Establish guidelines and standards to ensure quality without stifling innovation.

Indicators	System Design
Balancing regulation and innovation	Promote a culture of life learning and experimentation.
	Encourage collaboration and sharing best practices among stakeholders.
	Training and professional development for staff and instructors are needed to help them implement innovative practices while adhering to quality standards.
	Collaborative Networks: Collaboratively develop solutions

Adapted by the Study Researcher

3. Materials and Methods

The study adopted a mixed-method approach, involving both qualitative (desktop analysis) and quantitative research designs. A purposively sampled online survey was sent to experts from four quality assurance bodies and four quality assurance public entity directorates. The final response rate (n=7) included one quality assurance body, four SETA Quality Assurance (QA) Units, one Teacher Union, and one provincial education department. The participants were requested to rate the level of priority with which the predetermined design considerations and contextual factors should be prioritised when developing quality assurance and assessment frameworks. Some design considerations tested by the research tool included academic integrity, equity of access, and integrity of student information. The priority scale which the respondents utilised to score each design dimension had five options, where 1 = very high priority, 2 = high priority, 3 = moderate priority, 4 = low priority, and 5 = very low priority. The study aimed to validate the design considerations and contextual factors that should shape the development of the framework to ensure quality and assess NTLEs for online learning in South Africa, with the active participation of the stakeholders.

3.1 Data analysis

The survey tool was developed using the Google Forms application, and responses were collected and prepared for analysis by exporting the results via an Excel spreadsheet. The data were then formatted to identify the frequency of the same responses recorded per question and the differences in responses posed. A frequency analysis was conducted where respondents had to rate the priority level for each design dimension. The design dimensions that scored higher on the priority scale were noted, and the design dimensions that scored lower were equally added and analysed. The survey results were cross-referenced with the literature to validate and finalise findings.

4. Presentation of Results

This section presents the respondents' perceptions of the priority level of various design considerations when developing a framework for quality assurance and online learning

assessment. The results are based on the seven respondents (n = 7) who ultimately completed an online questionnaire consisting of both closed and open-ended questions.

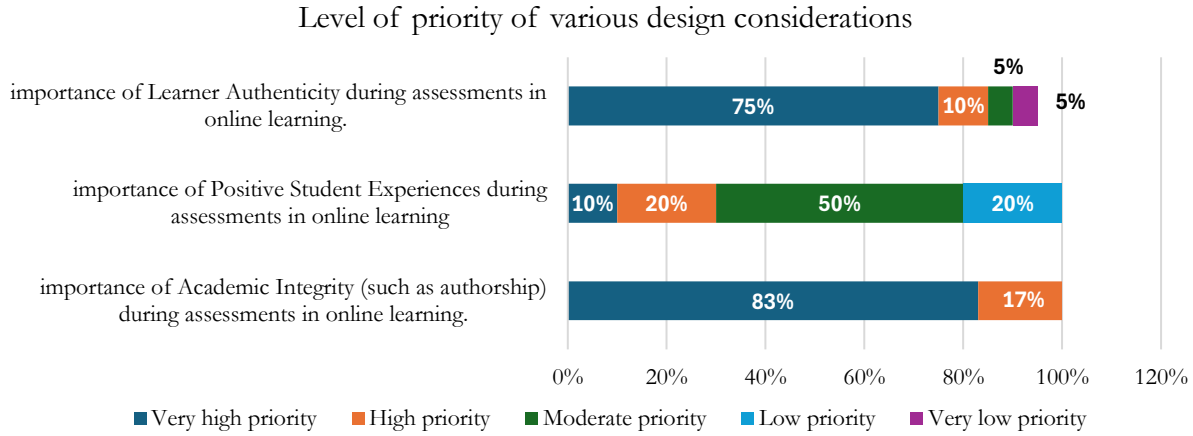

Figure 1: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers.

The relatively high consideration for learner authenticity and academic integrity in developing frameworks for quality assurance and assessment of NTLEs underscores the importance of an education system that offers an authentic learning experience. As demonstrated above, fail-safe systems that validate learner identity and protect learners' learning outcomes indicate a critical value system. Positive student experiences illustrate a variety of responses as opposed to the relative consensus and uniformity demonstrated by responses for learner authenticity and academic integrity.

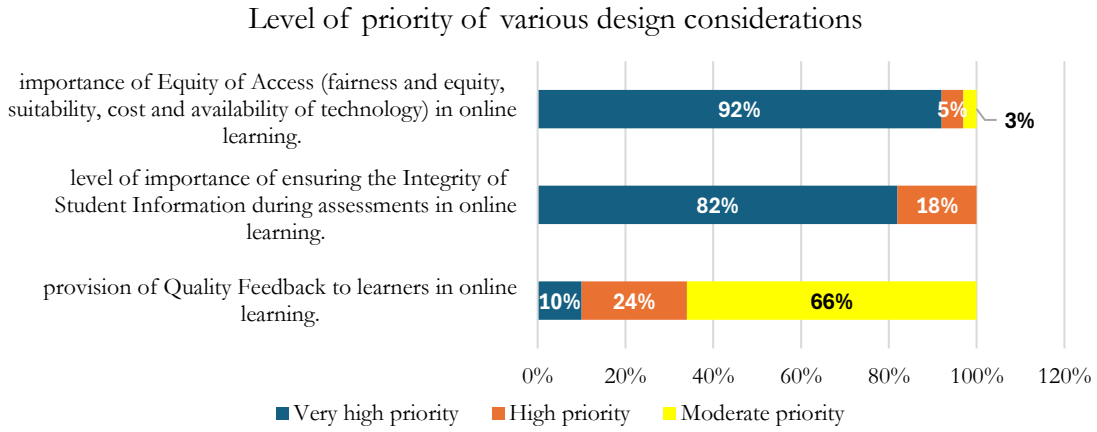

Figure 2: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers

Sustainable Development Goal 4 (SDG 4) states that for education to be for all, concerted efforts must be made to facilitate and ensure access, inclusion, equity, equality, and lifelong

learning. Online learning requires further efforts due to the material costs involved in the continuous design, maintenance, and upgrading necessitated by this teaching and learning medium, particularly for a highly unequal society to meet this objective. For quality assurance and assessment frameworks to be relevant and practical, and arguably to mitigate against adverse behaviours and promote the democratic principles they seek to espouse, access is critical to ensure legitimacy. Furthermore, the protection of student information is essential to maintain legitimacy and trust among all stakeholders. Similarly, as demonstrated by Figure 1, design considerations show relative uniformity and consensus regarding equity of access and integrity of student information, with more varied responses for considerations related to providing feedback to learners.

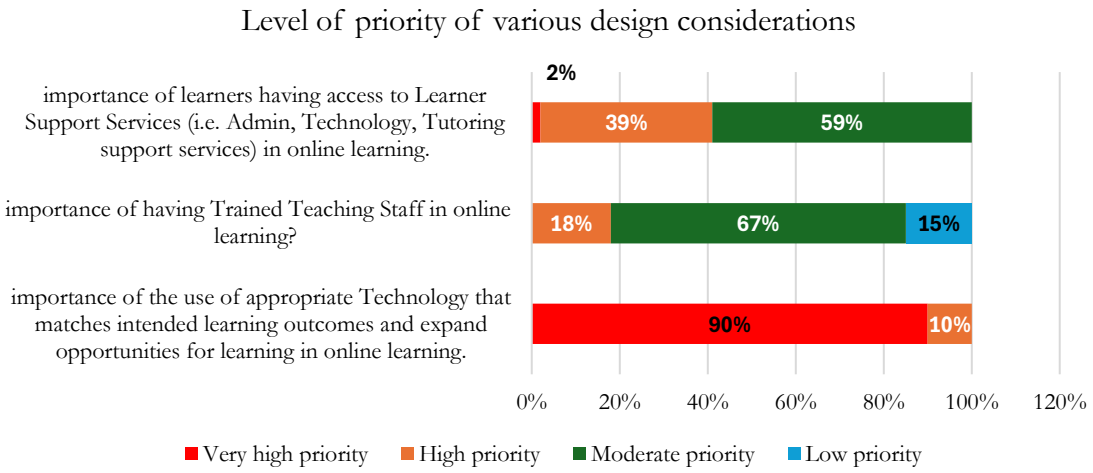

Figure 3: *Respondent's ratings of various design considerations*
Source: Developed by the study researchers

Figure 3 continues to illustrate that the primary design considerations identified by respondents as foundational building blocks for quality assurance and assessment frameworks relate to concerns about system legitimacy, trustworthiness, and technological resources. Understandably, appropriate technology that aligns with intended learning outcomes received a very high priority rating. A flaw in this design consideration arguably undermines the overall objective of an education system. Technologies will require constant updating and upgrading to ensure that learning outcomes are achieved and the integrity of the education system is maintained. The design considerations for trained staff and support services received moderate consideration, indicating that while these are necessary, they may not be central to quality assurance and assessment frameworks.

5. Discussion of Findings

The initial research questions of this study concerned understanding the key principles and dimensions of quality assuring and assessing online learning experiences. Further to that, the

challenges and methods related to quality assuring and assessing non-traditional learning experiences were also of primary concern.

With this in mind, the design considerations that recorded the highest priority amongst respondents are related to the importance of equity of access, the use of appropriate technologies that match intended learning outcomes, and academic integrity. These dimensions indicate that if not adequately addressed in quality assurance and assessment frameworks, programme integrity is undermined as fairness and a level playing field, wherein everyone is assessed based on their capabilities and circumstances, are not guaranteed. These prioritised design considerations also illustrate that they are the potential building blocks upon which a quality assurance and assessment system should be built. This is in line with the literature, which illustrates that the dimensions of some of the features that quality assuring and assessment frameworks should exhibit are oriented around developing a system that meets its intended objective, does not disadvantage anyone on the basis of access, and is secure from manipulation, gaming, and hacking (Bond et al., 2023; Butler et al., 2020; Foerster et al., 2020).

In a developing country such as South Africa, it is encouraging to witness the recognition of the importance of having quality assurance and assessment frameworks that are highly cognisant of class and inequalities in society. This has seen the study participants advocating for frameworks that consider fairness and equity in online assessments. The frameworks must take, among other aspects, the challenges that may arise for learners living with disabilities and learners with different technical backgrounds into account. The cognisance of contextual factors such as equity of access aligns with the features of complex adaptive systems theory, which advocates for contextual factors to be considered as one of the components that shape systems. Academic integrity is one dimension that the respondents of this study felt should be highly prioritised by frameworks of quality assurance and assessment. As noted by the literature, having frameworks that are academic integrity-proof will ensure that student assessments have value and credibility (Foerster et al., 2020); thus, frameworks for quality assuring and assessing online learning need to ensure learner authentication and authorship (ibid).

According to the study results, educational digital technologies that match intended learning outcomes are one of the dimensions of the quality assurance framework that should be prioritised. One indicator of this dimension's presence is the adequate allocation of resources, which will ensure the system's uninterrupted running. As guided by the literature (ibid), the deployed technologies must ensure wide coverage and alignment with the various e-assessment approaches.

Dimensions that received a moderate priority response include the provision of quality feedback to learners, the importance of having trained staff, and access to learner support services. These dimensions speak to administrative and personnel arrangements within the system. The importance of feedback between the end user (students) and the online learning platform,

according to the literature, is a crucial design feature that enables information sharing, allowing for the system to adapt and reconfigure where it is necessitated for learning to be fit for purpose and responsive to the students' needs. Feedback mechanisms also allow for assessing student progress and identifying entry points for intervention to enhance learner self-regulation when the learning outcomes are not reflected in the learners' progress and improve future assessment design (Huber et al., 2024).

The moderate response concerning trained staff as a priority in design considerations is concerning, as it was anticipated that it would have scored higher. A highly educated and competent workforce is integral to ensuring that online learning is engaging, interactive, and aligned with learning objectives through efficient navigation of the online learning platform. Trained staff can also detect ways the system may be abused, thereby being an effective watchdog of originality in student work. Okada et al. (2019) note that "there is evidence that insufficient resource provision for staff training constrains the efficacy of online assessment." Trust is also a value fostered when educators are seen to be competent and knowledgeable, thereby providing credibility to the system and the competencies of the graduates of the respective programmes. This moderate consideration indicates that these are secondary to the elements indicated above. The final consideration that recorded a moderate response relates to learner support services, whose primary goal is to enhance the learning experience by promoting engagement and resolving technological challenges promptly, not compromising learner outcomes. Furthermore, access to these services allows for the retention of learners and facilitates inclusivity and responsiveness.

Moreover, the results of this study demonstrate the complexity that encapsulates the education system as it relates to NTLEs and, specifically, online learning. In line with Ellis and Herbert's (2011) assertions that the evolving structure of the education systems makes regulation difficult, NTLEs, in this way, present a complex system in that they involve a significant number of varying individuals engaged in simultaneous interactions, which results in a plethora of behaviours. Moreover, system complexity is compounded by stakeholders devising projections and anticipating outcomes to better align themselves with what they think the outcome of the change will be. Based on this understanding, it becomes clear that the quality assurance and assessment frameworks must be agile and responsive to this environment. This signals that design considerations that strengthen and support factors related to equity of access, academic integrity and learner authenticity, the integrity of student information during assessment, and appropriate technologies that match intended learning outcomes are at the core of system legitimacy and trust, upon which every other consideration is built.

6. Conclusions and Recommendations

This paper centres on key dimensions and factors that need to be prioritised when developing quality assurance and assessment frameworks for nontraditional learning experiences, utilising

online learning as the primary unit of analysis. The design dimensions, as sourced from the literature tested by this paper, include Academic Integrity, Positive Student Experiences during assessments, Learner Authenticity, Integrity of Student Information, Quality Feedback, Equity of Access, Appropriate Technology, Trained Teaching Staff, and Learner Support Services in online learning. The priority level of these dimensions in the design of quality assurance and assessment frameworks for nontraditional learning experiences was tested with participants who are stakeholders in the quality assurance of basic education. The framework dimensions highlighted in this paper should not be viewed as a compliance exercise that must be addressed in a single assessment item. Instead, they need to be considered in the unique context of each assessment design decision and afforded the agility and responsiveness they require.

It is also important to note that, due to the limited sample size, the results are not comprehensive enough to ensure rigorous validation of the design considerations presented in the study. As such, this study has presented only preliminary considerations for quality assurance and assessment frameworks for stakeholders to observe when developing frameworks. The complexity of nontraditional learning experiences and the quality assurance and assessment regime required to maintain them will necessitate ongoing research and investigation; soliciting more stakeholder input over time will be crucial in further understanding how the system needs to be structured and supported, rather than attempting to develop an integrated quality assurance and assessment system for all forms of teaching and learning (Bengoetxea et al., 2011).

The following are the recommendations of the study:

- It is suggested that a comprehensive analysis of the technological requirements needed by the system to effectively implement online learning assessment and quality assurance frameworks at a scalable level should consider contextual, access, and resource factors in South Africa.
- The upskilling and reskilling of staff to effectively support the online learning environment require investment and continuous professional development. Skilled teaching staff must be among the key dimensions when designing quality assurance and assessment frameworks for non-traditional learning experiences.
- The framework needs to be responsive to the requirement for technical support during assessments. This must involve a seamless and efficient navigational system to enhance the credibility and reliability of the system.
- The assessment frameworks need to ensure that non-traditional learning experiences receive the necessary investment in up-to-date software applications for remote invigilation of online examinations that are not susceptible to security breaches, which is critical.
- It is suggested that student feedback become a central feature of assessment frameworks and should be personalised to ensure fit-for-purpose learning.

- Finally, due to the relational and technical complexity underlying the development of quality assurance and assessment frameworks for online learning, the literature, as well as responses from the survey, recognise that certain design principles can lead to various unintended outcomes. Prioritising one dimension of a design consideration can cause bottlenecks or trade-offs in another aspect, leading to overall inefficiency in the system (Snyder, 2013). It is, therefore, critical to understand the interrelated and dynamic factors highlighted by the Complex Adaptive System when developing these frameworks.

7. Declarations

Funding: This research did not receive any external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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