The role of quality management systems in enhancing online education: A case study of a business school in KwaZulu-Natal

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ABSTRACT

The shift to online education created opportunities for innovation while raising questions about the effectiveness of existing quality assurance (QA) systems. This study evaluated the Quality Management System (QMS) of an online learning programme at a Business School in KwaZulu-Natal (KZN). A mixed-methods approach was used, combining surveys of students and interviews with academic experts in quality management and higher education. Ninety-six students participated in the survey and eleven academics participated in the interviews. Findings from the survey revealed key challenges such as limited internet access, high data costs, and cybersecurity risks, which negatively affected student engagement and equitable access to learning. Despite these challenges, the students reported overall satisfaction with the programme, particularly with lecturer support. The interview data highlighted the need for structured QA frameworks to maintain academic standards in online education. A gap analysis at the business school showed institutional strengths such as a clear mission and commitment to continuous improvement, but also weaknesses, notably the absence of a dedicated QMS framework tailored to online education. The study proposes a QMS framework based on the ISO 21001:2018 standard and supported by Total Quality Management (TQM) principles. The framework incorporates continuous improvement mechanisms, regular assessments, and feedback systems to strengthen quality assurance and support the sustainability of online programmes.

Keywords: Online education, quality management systems, higher education, technology, infrastructure

INTRODUCTION

The sudden shift to online education during the Covid-19 pandemic revealed several weaknesses within educational institutions, including limitations in existing systems,

disparities in access to digital technologies, insufficient infrastructure, and limited institutional readiness to support effective online teaching and learning (Dube 2020, 138; Ndung'u and Signe 2020, 73). In many cases, the shift to digital platforms was executed without adequate evaluation mechanisms, leaving educational institutions uncertain about the effectiveness and sustainability of their online programmes (Adnan and Anwar 2020, 46; Mukhtar et al. 2020, 1). Stakeholders, including students and faculty, faced numerous obstacles, ranging from limited internet access and cybersecurity risks to high data costs, all of which hindered the overall learning experience (Mailizar, Maulina, and Bruce 2020, 1).

The traditional Quality Management Systems (QMS) and Quality Assurance (QA) frameworks were predominantly designed with traditional, in-person education in mind, leaving education institutions not fully prepared for the operational and technological demands of digital educational environments (Seke 2020, 71). These frameworks, though effective in conventional settings, failed to account for the complexities and unique needs posed by online education (Silaeva and Semenov, 2018, 71; Naveed Bin Rais et al. 2021, 5). As a result, many educational institutions faced significant barriers in maintaining educational standards and operational efficiency during this transition.

Seyfried and Pohlenz (2018, 261) highlight that robust QA mechanisms are essential for effectively managing educational programmes, particularly during periods of rapid change. ISO 21001:2018 is a standard that provides educational institutions with a structured quality management framework that emphasises process-based management and risk considerations to support the improvement of teaching and learning (Silaeva and Semenov 2018, 72; Zuhairi, Raymundo, and Mir 2020, 297). This standard provides flexibility to accommodate the unique requirements of diverse learning environments while ensuring educational institutions uphold high-quality standards and engage in continuous improvement. However, achieving a dynamic quality culture in online education also necessitates integrating Total Quality Management (TQM), which complements ISO 21001 by fostering continuous improvement and stakeholder engagement (Maimuna et al 2024, 416). TQM treats educational institutions as service-oriented entities, prioritising the needs of students, faculty, and external stakeholders (Jasti, Venkateswaran, and Kota 2022, 1250). Together, TQM and ISO 21001 enable education institutions to adapt to technological advancements, align processes with best practices, and build a responsive, student-centred learning ecosystem (Aniskina and Terekhova 2019, 219).

This study aimed to evaluate the QMS of a selected University of Technology Business School's online learning programme in accordance with ISO 21001:2018. The business school is located on the East Coast of South Africa, KwaZulu-Natal. The South African higher education system currently operates under the Council on Higher Education (CHE), which is

responsible for quality assurance and programme accreditation. It adopts Harvey and Green's (1993) fitness-for-purpose approach in its quality accreditation and review processes to assess whether educational programmes align with institutional objectives and national development priorities (CHE 2021). The research questions that have been crafted to guide the study are as follows:

- What gaps exists within the current QA practices of the selected business schools' online learning programme?
- How effective is the current online learning programme at the selected business school?
- What are academic perspectives on QMS's and online learning?
- What improvements can be made to the selected business schools online learning programme through the application of ISO 21001:2018 and TQM principles?

METHODS

The study adopted a convergent mixed methodology approach. The mixed-methods approach was selected because it allows qualitative and quantitative methods to complement one another, while also addressing some of the limitations associated with using either approach independently (Asenahabi 2019, 77). The quantitative component used a survey questionnaire to assess the effectiveness of the online learning programme at the selected business school. The qualitative component used focus group interviews to obtain detailed insights into stakeholders' experiences and views regarding QMS's and online education. The data were collected concurrently and integrated during the interpretation phase to perform methodological triangulation (Leavy 2017, 153).

Study instrument design

The development of the measuring instruments was guided by the ISO 9001 and ISO 21001 QMS standards, together with relevant principles and concepts of TQM (Jasti, Venkateswaran, and Kota 2022, 1250). The survey questionnaire consisted of section A, which sought the biographical information from the respondents, and section B, which investigated the current state of online education at the selected business school in terms of technological challenges and resources, learning environment and support, emotional and social impacts, and programme organisation and transition. It incorporated closed-ended items with a five-point Likert scale to assess respondents' attitudes and the strength of their views. Braun et al. (2021,

645) explain that the scale enables respondents to indicate their degree of agreement, from strong agreement to strong disagreement.

The interview guide comprised ten questions requiring open-ended responses designed to obtain detailed perspectives and experiences regarding QMS's and online education. This is supported by Langley and Meziani (2020, 371), who noted that interviews are beneficial and appropriate when researchers seek in-depth insights, capture personal experiences, and explore complex issues that may not be fully addressed through surveys.

Sampling strategy

The survey population consisted of 145 learners that were enrolled in the online learning programme of the selected business school. The required sample size was calculated as 106 participants using Yamane's formula, with a 5 percent margin of error and a 95 per cent confidence level (Adam 2020, 94). The learners who met the predetermined criteria were then purposively selected to participate in the survey. The questionnaires were distributed to the selected participants, of whom 96 completed it, resulting in a response rate of 90.6 percent.

For the qualitative component of the study, eleven academics with expertise in quality management and higher education participated in the interviews. These participants were selected based on their knowledge and experience in these areas. The sample size was considered appropriate for the focus group, as Lohr (2021, 4) indicates that four or more participants can be sufficient for a focus group. The eleven participants provided sufficient information to achieve data saturation, which supported the suitability of the sample for the qualitative component of the study.

Fieldwork / Data collection

The existing QA procedures of the selected business school were explored through a gap analysis interview with the head of department of the business school. ISO 21001:2018 was used as the reference framework for guiding the interview process and examining the existing QA practices in relation to the standard (Syahrullah et al. 2022, 67). The gap analysis interview focused on obtaining information about the current QA practices and their relevance to the implementation of the standard.

The survey questionnaires were emailed to the respective participants, and they were given two months to complete them. After the first month, a courtesy email was sent to those participants who did not complete the questionnaire, informing them that the survey would remain open until the end of the second month. The programme administrator of the selected business school provided the contact details of the survey participants. The participants for the

interviews were contacted through telephone and email. The interviews were conducted online through the MS Teams platform.

Data analysis

The Statistical Package for the Social Sciences (SPSS) version 27 was used to analyse the quantitative data. The percentage frequency distributions were used to assess the participants' levels of agreement or disagreement with the various constructs related to the online learning programme. This approach facilitated an initial understanding of patterns and trends within the dataset, particularly regarding the prevalence of specific perceptions and attitudes among participants.

The qualitative interview data were analysed using the NVivo software. Content and thematic analysis were applied to the interview transcripts to examine recurring words, themes and concepts within the responses. Crowe et al. (2017, 644) reported that this type of approach is considered appropriate when analysing interview data. The NVivo word frequency function was also used to determine which words occurred more often across the transcripts. The frequency results were then considered alongside the qualitative analysis to identify the main themes and concepts emerging from the data.

Reliability and validity

The Cronbach's alpha coefficient was used to assess the reliability of the survey questionnaire and determine the internal consistency of the questionnaire items. According to Hajjar (2018, 52), a Cronbach's alpha coefficient value between 0.6 and 0.8 is considered an acceptable level of reliability. The reliability analysis of the four constructs in this study yielded a Cronbach's alpha value of 0.632, indicating an acceptable level of internal consistency for the questionnaire.

Construct validity was considered during the development of the indicators and measurement items, which were informed by relevant literature and established TQM concepts (Taber 2018, 1280). The measures were developed to ensure that the items reflected the concepts being investigated and were consistent with the theoretical perspectives identified in the literature. Sürücü and Maslakci (2020, 2695) describe validity as the extent to which a measuring instrument accurately measures what it is intended to measure.

The reliability of the interviews was assessed using the concept of qualitative trustworthiness, which includes the elements of credibility, transferability, dependability, and confirmability, as recommended by Elo et al. (2014, 1). Credibility was ensured through member checking, which allowed participants to review the interview transcripts to confirm

that the transcriptions were accurate and that their views were captured correctly. The transferability was addressed by providing detailed descriptions of the study settings and the participants. Dependability was achieved by maintaining a clear record of the study's procedures. Lastly, the confirmability was maintained by ensuring that the results reflected the participants' voices rather than personal opinions.

RESULTS AND DISCUSSIONS

GAP analysis

Table 1 presents the findings from the gap analysis interview undertaken at the selected business school. It outlines the QMS focus areas, the business school's current status, the identified gaps, and their corresponding implications.

Table 1: Gap Analysis Results (Source: Authors 2025)

Clause	Current Status	Identified Gap	Implication of Gap
Context of the Organisation	The Business School has a clear mission, but the scope of the Quality Management System (QMS) is not formally documented or aligned with ISO requirements.	No formal, documented scope of the QMS. Lack of identification of internal and external issues impacting the management system.	The absence of a formal scope limits the effective application of the QMS and makes it difficult to assess the broader context, which is critical for meeting the standard's requirements (Khawaja and Khan 2022, 480). In addition, it may lack direction, leading to suboptimal performance.
Leadership	Leadership commitment to quality is evident, but there is no formal documented Quality Policy or an established organisational structure for the QMS.	No formal Quality Policy established. Absence of an organogram that outlines clear roles and responsibilities related to QMS.	This gap could lead to confusion regarding leadership responsibilities, affecting decision-making, resource allocation, and alignment with the school's mission. It could also lead to disjointed efforts in addressing quality-related challenges and to organisational inefficiencies (Andrade et al. 2020, 39; Sukkar 2017, 1397; Ahmed 2016, 187).
Planning	SWOT analyses are used for internal review, but planning for changes and quality objectives is underdeveloped.	Lack of documented Educational Organisational Management System (EOMS) that aligns with planned improvements. Insufficient planning to address changes in the educational environment, especially related to online learning.	These gaps make it difficult to plan and manage change, especially in relation to continuous improvement, which is important for responding to technological developments and changing educational needs. Failure to plan for the evolving landscape of higher education could leave the institution behind in its competitive positioning and hinder student success (Camilleri, 2021, 270; Khawaja and Khan 2022, 480).

Clause	Current Status	Identified Gap	Implication of Gap
Support	The Business School allocates adequate resources for teaching, but the communication channels for quality management are not formalised.	No formal communication policy for the QMS. No structured system for competency development for quality management roles.	The lack of a formal communication structure and competency framework could impede the flow of information and the development of skills needed to maintain a strong QMS. Ineffective communication regarding QMS could also create confusion and misalignment across departments and stakeholders, weakening the overall performance of the system (Zhao, Llorente, and Gómez 2021, 10)
Operation	The school follows general programme design guidelines, but operational processes are poorly documented, and there is no control over external providers.	No documented operational processes or control of external services. Lack of clear guidelines for evaluating external educational content or services.	Without defined processes, the quality and consistency of programmes may vary, making it difficult to maintain educational standards and to handle external collaborations effectively. The absence of external provider controls also exposes the institution to risks associated with vendor services and course material quality (Camilleri 2021, 270; Andrade et al. 2020, 38; Khawaja and Khan 2022, 481)
Performance Evaluation	The Business School conducts studies on student satisfaction, but formal internal audits and management reviews are missing.	No documented internal audit procedures. Absence of management reviews and evaluations of QMS performance.	The absence of regular evaluations, audits, and reviews reduces the ability to monitor the QMS's performance, making it difficult to identify areas for improvement. This lack of evaluation could result in missed opportunities to enhance processes, affecting overall organisational effectiveness and student outcomes (Lois et al 2020, 205; Alyahyan and Düştegör 2020, 17).
Improvement	The Business School has a general focus on improvement, but corrective actions are not formally documented or tracked.	No documented corrective action processes. Limited formal processes for tracking improvements and implementing corrective actions.	This gap leads to a lack of accountability for resolving issues and prevents the systematic implementation of improvements, potentially affecting quality in the long run. Continual improvement efforts are less likely to be effective without a structured approach to tracking and resolving non-conformities (Aburizaizah 2022, 3; Khawaja and Khan 2022, 480; Andrade et al. 2020, 38).

As shown in Table 1, the selected Business School has many elements of the ISO 21001:2018 framework in place. Still, it lacks formal documentation and structured processes in key areas, such as scope, communication, change planning, and corrective actions. Although leadership demonstrates commitment to quality, formal structures such as a Quality Policy and clearly defined roles remain absent, which could affect overall quality outcomes and organisational cohesion. There is also insufficient planning for continuous improvement, particularly regarding external collaborations and technology-driven educational methods. Insufficient documentation of operational processes and the absence of external provider controls limit the school’s ability to maintain consistent educational standards and manage external collaborations effectively. A lack of formal internal audits, management reviews, and corrective action processes limits the business school’s ability to monitor and improve its QMS, potentially undermining overall quality assurance efforts.

QUANTITATIVE ANALYSIS

Section A – Demographics

The demographic analysis revealed that the majority (64%) of respondents spoke IsiZulu as their home language, while 62 per cent were working on a full-time or self-employed basis. A large proportion of respondents were Black Africans (77%), with 56 per cent female and 49 per cent single. In addition, 39.6 per cent of the participants reported that a diploma was their highest educational qualification. These demographic characteristics are valuable for understanding the context in which students engage with online learning. As Baker et al. (2023, 37) suggest, demographic data provides predictive insights into students' behaviours and cultural influences, which can inform the design of educational programmes. The flexibility of the online learning programmes is therefore particularly relevant to the respondents who are employed full-time, as it allows them to manage their studies alongside their work responsibilities more effectively.

Section B – Online education

Technological challenges and resources

The results about technological challenges and resources are presented in Table 2.

Table 2: Technological and resource challenges (Source: Authors 2025)

Statement	Disagree	Neutral	Agree
B1 – I have my own device to attend the online learning programme (not sharing with family members)	13.7	3.2	83.1
B2 – I have a good internet connection at home	24.2	20	55.8
B3 – Data/Internet charges have increased since I started online learning	21.1	13.7	65.2
B4 – I have noticed an increase in electricity consumption since I started online learning	34.7	9.5	55.8
B5 – Load shedding has disrupted my online lectures	11.6	6.3	82.1

Table 2 indicates that 83.1 per cent of the students used their own devices for online learning (B1), which is a critical factor in shaping educational experiences. However, internet connectivity posed challenges: 55.8 per cent reported good connections, 20 per cent remained neutral, and 24.2 per cent disagreed (B2). These findings are consistent with Ferri, Grifoni, and Guzzo (2020, 7), who identified ongoing global bandwidth issues, particularly in rural areas. Additionally, high internet data usage (B3, 65.2%) and electricity costs (B4, 55.8%) were significant concerns highlighted by the respondents. The increased expenses associated with online learning technologies were similar to the findings of Landa, Zhou, and Marongwe (2021, 168), which highlighted financial burdens, such as high internet usage and the energy demands of video-conferencing platforms. Load shedding exacerbated these challenges, with 82.1% of students reporting disruptions to online lectures (B5). This finding is supported by Kgarose,

Makhubela, and Setaise (2023, 448), who noted the negative effects of recurring electricity disruptions on the South African education sector.

Learning environment and support

The results about the learning environment and support are presented in Table 3.

Table 3: Learning environment and support (Source: Authors 2025)

Statement	Disagree	Neutral	Agree
B6 – My environment at home was conducive to the learning process. (Noise levels, family or pet disturbances)	17.9	18.9	63.2
B7 – I have assistance from technical staff when I have connection issues	53.7	24.2	22.1
B8 – I have assistance from the administration staff when needed.	41	21.1	37.9
B9 – I am satisfied with the assistance from facilitators/lecturers	5.2	20.6	74.2
B10 – I am satisfied with innovative methods of teaching	5.2	20.8	74

As shown in Table 3, 63.2 per cent of students agreed that their home environment was conducive to learning (B6), indicating that a peaceful, comfortable atmosphere plays a key role in supporting their academic activities. This is consistent with Ayadat et al. (2021, 357) who affirm that such environments can positively influence students' engagement in online learning. However, limited technical support (B7, 53.7%) and administrative support (B8, 41%) were identified as key barriers to the online learning experience. Alqahtani and Rajkhan (2020, 3) emphasise the need for ongoing support services to address connectivity issues, complex software interfaces, and other technical challenges to improve the overall standard of online learning. The lecturer’s support was positively reflected in student satisfaction, with 74.2 per cent reporting that they were satisfied with the assistance provided by the lecturers (B9). Tan et al. (2024, 401) reported a similar finding, indicating that interaction between lecturers and students significantly improves the online learning experience. In addition, the majority of students (74%) appreciated the innovative teaching methods (B10) employed in the online environment. Castro and Tumibay (2021, 1371) emphasise the importance of adopting innovative pedagogies in online education, especially in response to rapid technological developments.

Emotional and social Impacts

The results about emotional and social impacts are presented in Table 4.

Table 4: Emotional and social impacts (Source: Authors 2025)

Statement	Disagree	Neutral	Agree
B11 – Attending the online learning programme has been stressful	34.8	10.5	54.7
B12 – I have trouble with time management for online learning	44.2	30.5	25.3
B13 – I feel isolated from friends and colleagues when I am learning online	34.8	13.6	51.6
B14 – I am concerned about having my personal information online	26.3	23.2	50.5
B15 – I prefer online learning to face-to-face contact sessions	33.6	20	46.4

As indicated in Table 4, over half of the respondents (54.7%) found the online learning programme stressful (B11), which is consistent with Harjule, Rahman, and Agarwal (2021, 411), who observed an increase in mental health issues as teaching moved to an online format. Most students either disagreed or remained neutral regarding time management challenges in online education (B12), suggesting that time management was not a significant concern. This finding is consistent with the demands of online learning, where students need to manage assignment and examination deadlines alongside their employment and family commitments (Heo, Bonk, and Doo 2021, 1640). A sense of isolation was reported by 51.6 per cent of students (B13) during online learning, which corroborates the concerns raised by Chametzky (2021, 1190) and Stoytcheva (2021, 2), who linked loneliness in online learning to heightened stress and reduced engagement. Furthermore, cybersecurity concerns were also prominent, with 50.5 per cent of the students' expressing apprehensions about data security (B14). This aligns with Alexei and Alexei (2021, 130), who highlighted the vulnerabilities of online platforms to breaches and malware attacks, posing significant risks to data security and user trust. Preferences for learning modes were mixed, with 46.4 per cent of students preferring online learning, while 33.6 per cent disagreed with online learning (B15). These findings mirror the global studies conducted by Adnan and Anwar (2020, 45) and Mali and Lim (2021, 3), which indicate that students generally prefer traditional classroom-based learning. At the same time, online learning provides greater flexibility, which can be particularly beneficial for employed students.

Programme organisation and transition

The results for the programme organisation and transition are presented in Table 5.

Table 5: Programme organisation and transition (Source: Authors 2025)

Statement	Disagree	Neutral	Agree
B16 – The online learning programme has been effective for me	13.7	14.7	71.6
B17 – The class was very well organised	6.3	10.5	83.2
B18 – It was difficult for me to change from traditional face–to-face classroom learning to an online learning platform	34.8	20	45.2
B19 – I know how to use the software and computer programs for online learning	17.9	25.3	56.8
B20 – I am satisfied with the overall format of the programme	7.3	24.7	68

As shown in Table 5, majority (71.6%) of the students agreed that the online learning programme was effective (B16), aligning with Bahasoan et al. (2020, 102), who found that well-structured online learning can improve learning outcomes. Similarly, 83.2 per cent of students reported that classes were well-organised (B17), which supports Valantinaitė and Sederevičiūtė-Paciauskienė's (2020, 5) view that effective organisation contributes to the quality of online education. However, 45.2 per cent of the students reported difficulties with the transition from face-to-face to online learning (B18). Richardson and North (2020, 10) argue that migration to online platforms can be a disruptive process that usually requires substantial adaptation from both students and educators. The students' technological proficiency was a notable strength, with 56.8 per cent indicating confidence in using software tools for online learning (B19). This aligns with Enwereji et al. (2024, 381), who emphasise the need for ongoing training that further develops students' digital competencies and support effective online learning. The online learning programme format received a high satisfaction rate, with 68 per cent of students approving of it (B20). This positive perception may be linked to the design of the online learning programme. Giday and Perumal (2024, 9) note that how online programmes are structured can significantly influence student engagement and communication with lecturers, ultimately improving learning outcomes.

QUALITATIVE ANALYSIS

Online learning

The participants expressed positive perceptions of online learning by emphasising its potential to improve access and encourage innovation in the higher education sector. Some of the illustrative responses included:

> "Online learning allows students to learn at their own pace; they have access to the recordings and can watch them again"

> "It promotes innovation and greater access to students who may be employed or reside far from the University"

However, the participants also highlighted significant challenges, including:

- Load Shedding: The most frequently reported challenge was the impact of power outages, which disrupted teaching, access to online resources, and student attendance. This finding aligns with Kgarose, Makhubela, and Setaise (2023, 449), who highlighted the mental health impacts of load shedding, and with Malik et al. (2022, 1165), who reported its adverse effects on academic punctuality and performance.
- Data Costs: The rising costs of data were noted as a barrier to participation, thereby reducing student engagement. These findings are consistent with Sarosa (2022, 478), who observed that financial pressures may unintentionally limit students' opportunities to participate in online learning.
- Transition to Online Learning: The participants described increased stress and burnout as the major difficulties in adjusting to online teaching and learning, which was consistent with the similar challenges reported by Maatuk et al. (2022, 29).
- Assessment Integrity: This challenge included concerns about maintaining academic integrity during online assessments and the privacy implications of online proctoring, as corroborated by Vazquez, Chiang, and Sarmiento-Barbieri (2021, 1)
- Time-Intensive Marking: Grading in an online context was described as time-consuming, especially for large classes.

Quality in higher education

The participants supported the application of QA frameworks within higher education institutions, emphasising their role in maintaining academic standards and ensuring global credibility. Some of the excerpts from the participants were as follows:

> "It is necessary to maintain standards and ensure qualifications are relevant"

> "A relevant QMS is essential to uphold quality and integrity"

Despite the general agreement on the importance of QA, the participants highlighted the following common challenges that hinder its effective implementation:

- Bureaucratic processes: It was noted that lengthy administrative procedures were described as a significant impediment, which often slows down decision-making and reduces the efficiency of QA activities, aligning with Asiyai (2022, 844).
- Organisational resistance: The resistance to change within institutional cultures emerged as a recurrent theme. Naveed Bin Rais et al. (2021, 10) similarly found that cultural inertia in organisations can significantly reduce the effectiveness of quality improvement initiatives.
- Resource constraints: The limitations due to financial, human and training resources were identified as barriers to implementing QA measures effectively. Greere (2023, 166) explained that without adequate funding and skilled personnel, institutions struggle to maintain consistent quality standards.
- Communication gaps: Poor communication strategies, such as unclear guidelines and inadequate feedback mechanisms, were seen as common factors that hinder staff understanding and engagement with QA processes. This issue resonates with Aburizaizah (2022, 3), who highlights that communication gaps can significantly compromise the adoption and effectiveness of QA systems.

Perceptions of QMS

The participants emphasised the importance of adopting a QMS tailored to the needs of educational institutions. ISO 21001:2018 was identified as particularly relevant due to its focus on addressing the distinct needs of the education sector. The participants also highlighted the importance of integrating the Quality Assurance Framework (QAF) developed by the Council on Higher Education in South Africa, which was introduced to strengthen national QA mechanisms (Lalendle, Tsephe, and Naidoo 2022, 5816).

SUMMARY OF MAIN FINDINGS

The gap analysis interview showed that the selected business school had a vision, mission statement and processes for assessing student needs, but did not have a documented scope or a dedicated QMS. The analysis also found no formal quality policy, organogram or communication policy, and no established procedures for process control and internal audits. However, processes for addressing non-conformities and supporting continuous improvement were in place.

The survey results indicated that the students generally regarded the online learning programme as effective, although they experienced considerable pressure from balancing

responsibilities, connectivity issues, and increased costs for data, electricity, and load shedding. Despite these challenges, students value the convenience offered by the online learning programme and are generally positive about the support provided by lecturers. However, technical and administrative support is lacking.

The qualitative data highlighted the flexibility and accessibility of online learning, while also identifying challenges associated with load shedding and the importance of introducing innovative approaches to teaching. The participants supported QA in higher education but noted barriers, including bureaucracy and resource constraints. They further recognised the value of ISO 21001:2018 and national Quality Assurance Frameworks in strengthening QA practices.

The triangulation of findings from both sets of data confirmed that load shedding and connectivity issues were among the main challenges identified in the study. Both sets of findings also highlighted the difficulties experienced when moving from face-to-face to online learning. The students and lecturers also identified the higher costs of equipment, data and electricity as additional challenges, which is consistent with Enwereji et al. (2024, 380).

RECOMMENDATIONS

To address the identified gaps, it is recommended that the Business School align with ISO 21001:2018, starting with the development of a clear quality policy that will serve as a guiding document to ensure consistency in quality management practices across the institution. Alongside this, formal communication procedures and internal audit processes should be established to improve transparency and a structured approach to quality management, as indicated by Vhumbunu (2021, 4). Furthermore, key supporting policies should be developed to strengthen the Business School's quality framework. This requires the EOMS scope to be formally documented, organisational responsibilities to be clearly established, and procedures for managing change and controlling processes to be put in place to support operational efficiency and compliance (Greaves 2024, 69).

To address the challenges posed by load shedding, the Business School should implement flexible timetables that allow rescheduling of classes during power outages and designate study areas equipped with backup power sources to alleviate connectivity issues faced by students and staff. Ongoing training should also be provided to the staff and students to strengthen their ability to use digital platforms and adapt to emerging technologies. Additional technological and administrative support should also be provided to ensure that students can access help when needed. At the same time, efforts should be made to keep online learning accessible to all students, as Almahasees, Mohsen, and Amin (2021, 2) indicate. To address the financial

barriers, the business school should consider providing some form of subsidy to help students reduce the financial burden of internet data and offer guidance and support for applications to government funding, bursaries, and grants. Lastly, improvements in online pedagogy should be strengthened through better course planning and delivery, with greater use of class discussions, group projects and practical examples to promote student participation and confidence in online learning.

PROPOSED QMS FRAMEWORK

The study proposes the integrated QMS framework shown in Figure 1. The framework combines the requirements of ISO 21001:2018 with the Plan-Do-Check-Act (PDCA) cycle and incorporates TQM principles to support quality management within educational institutions. Its purpose is to support the delivery of quality education, student satisfaction and ongoing improvement, while linking educational processes to the institutions vision and strategic objectives. As noted by Hamadi and El-Den (2024, 6), an integrated framework can support the consistent implementation of new systems across institutions and contribute to greater reliability.

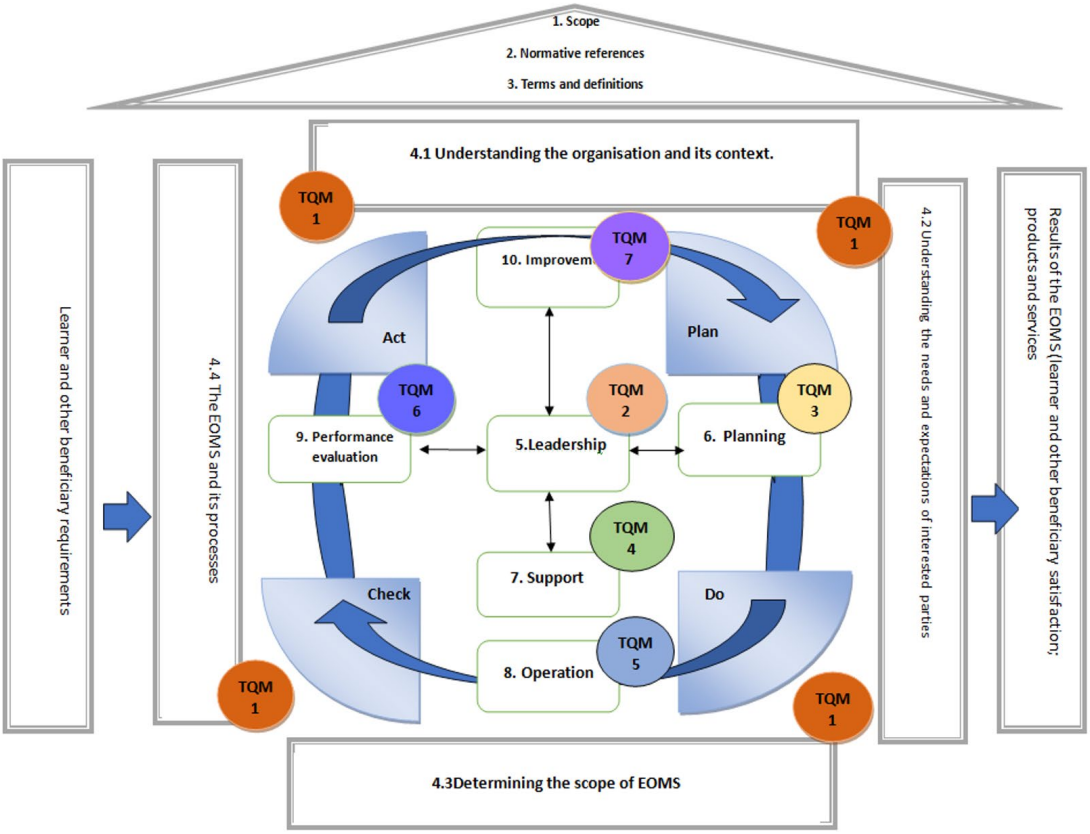


Figure 1: Proposed QMS framework enhanced by TQM principles (Source: Authors 2025)

As shown in Figure 1, integrating TQM principles at key points within the framework is intended to improve quality management processes, increase institutional efficiency, and enhance the overall quality of education. This approach takes into account the changing nature of the educational environment, particularly as technological developments and shifts in socio-economic conditions continue to influence the sector (Jasti, Venkateswaran, and Kota 2022, 1250). Therefore, each TQM principle contributes uniquely to this process. For instance, TQM 1 (Relationship Management) underlines the value of strong partnerships within and beyond the institution. The establishment of cross-functional teams can help break silos, promote transparency, and ensure decisions are balanced across stakeholder interests. Building on this, TQM 2 (Visionary Leadership) provides direction by linking institutional strategies to technological trends. The Hoshin Kanri strategic planning tool supports this by cascading policies into actionable goals across departments, ensuring that innovation is not just encouraged but also systematically implemented (Ahmed 2016, 185). In terms of TQM 3, which promotes Evidence-Based Decision-Making, it strengthens institutional improvement cycles by grounding decisions in reliable data. The adoption of Statistical Process Control (SPC) will enable institutions to monitor performance, detect variations, and act proactively before problems escalate. Complementing this is TQM 4 on the Engagement of People, which emphasises collaboration and shared ownership of challenges. Platforms such as Quality Circles would ensure that staff and students jointly discuss problems, propose solutions, and take meaningful responsibility for improvements.

The Process Approach (TQM 5) emphasises the need to understand how different institutional processes connect with one another. Process mapping helps visualise these linkages, identify bottlenecks, and redesign workflows to utilise digital systems better. Similarly, TQM 6, which deals with Learners and Beneficiaries, ensures that curricula and programmes are aligned with the evolving needs of students and employers. Tools such as Quality Function Deployment (QFD) are useful here, as they translate student and employer expectations into concrete programme outcomes, thereby ensuring relevance and responsiveness to what is needed. Finally, TQM 7 (Continuous Improvement) is supported by Kaizen, which encourages small, regular adjustments rather than waiting for large reforms. This creates a culture of gradual but sustainable improvement. For example, since data security and protection are vital in digitalised educational environments, a cause-and-effect diagram could be used to anticipate vulnerabilities, design safeguards, and ensure sensitive information remains secure.

These targeted TQM tools create a robust framework for addressing the challenges and opportunities in modern education. However, when implementing this framework, it is recommended that the selected business school take into account South Africa's cultural diversity by making key documents and training materials available in the most widely spoken languages. In addition, the proposed framework also requires alignment with South African education policies and regulations. To support implementation, awareness activities should be used to explain the benefits of the framework to stakeholders and promote their involvement and commitment. Overall, the framework provides a basis for aligning institutional quality practices with internationally recognised benchmarks while supporting ongoing improvement, accountability and adaptability.

LIMITATIONS

The following limitations emanated from the study:

- Although the study included students, lecturers, and quality management experts, it did not fully explore the perspectives of all relevant stakeholders, such as administrative staff and government policymakers, who play a role in online education and quality assurance.
- Since the study was conducted solely at a selected business school, the findings may not be applicable to other institutions or regions. The perspectives and challenges identified may therefore differ from those experienced by students and staff in different academic settings.
- The implementation of the proposed QMS framework and policies requires significant resources, including financial and human capital. Hence, the study did not assess the feasibility of implementing these recommendations within the Business School's current budget and resource constraints.

CONCLUSION

The study demonstrates the value of a strong QMS in supporting the effectiveness and sustainability of online education at a selected business school. The rapid transition to online learning revealed shortcomings to accessing technology, reliable internet, and a structured quality assurance framework. While the business school demonstrated commitment to continuous improvement, the absence of a dedicated QMS for online education was a notable weakness.

The proposed QMS framework brings together the requirements of ISO 21001:2018 and TQM principles to provide a systematic means of addressing the identified gaps. By introducing key policies, ensuring support for students and staff, and mitigating technological and operational challenges associated with load shedding and the high costs of data, this framework provides a roadmap for strengthening the effectiveness of online education. The study's findings and recommendations seek to improve students' learning experiences, promote fair access to resources, and uphold high educational standards, thereby supporting the business school in delivering effective online education.

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