Improving Total Quality Management Implementation at the University of Technology and Applied Sciences in the Sultanate of Oman

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Abstract: Education is recognised as a crucial pillar in the economy and social growth plans of Oman. However, Oman's educational system continues to face challenges that require institutions to improve their quality management systems. It is essential that higher education institutions (HEIs) in Oman equip their graduates with the necessary skills to meet the professional challenges and address the gaps in the local curricula to achieve the required academic standards. Additionally, there is a notable lack of awareness among some academics regarding the latest industrial trends. In this regard, the study aims to investigate the implementation of total quality management (TQM) at the University of Technology and Applied Sciences (UTAS). Utilising a quantitative approach, this study employed a questionnaire to assess the implementation of quality management systems at UTAS. Targeting staff and students across various levels, the survey was distributed among the seven colleges of technology in UTAS. The study used convenient sampling and obtained 300 completed responses to the questionnaire. The *p*-value was used in hypothesis testing and Statistical Package for the Social Sciences (SPSS) was employed to analyse the factors. The findings indicate that, aside from customer focus, there is a significant correlation between TQM procedures and the quality of teaching and learning, as well as support services and facilities. Furthermore, the study highlights the critical components necessary for adopting TQM at UTAS and suggests changes for the future in various operational areas. It views quality as the most important factor for HEIs. The results of this study can assist UTAS and other HEIs in Oman in developing a new strategy to enhance their current quality systems. The findings can also provide valuable insights for researchers and specialised practitioners to gain a better understanding of TQM methods in HEIs.

Keywords: Total quality management, TQM implementation, Quality of teaching and learning, Customer focus, Support services and facilities

INTRODUCTION

In comparison to the past, educational institutions now have a more significant role in meeting society's requirements. Rising expectations for higher-quality educational services and the need to remain competitive have led to improved

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quality management practices (Alauddin, 2019). High-quality assurance management is essential for sustaining long-term growth in higher education since continual quality assessment is crucial to the performance of a nation's higher education system (Dwaikat, 2021). When employing total quality management (TQM), it is crucial to have clearly defined implementation goals. Target customers should also be identified since TQM emphasises meeting or exceeding customer demands to achieve quality (Jasti, Venkateswaran and Kota, 2022).

Several organisations strive to produce outstanding customer service that meets or exceeds customer expectations. Continuous improvement has become essential for higher education institutions (HEIs) to demonstrate that their services are customer focused. Therefore, as customers receive services, they form perceptions and they evaluate the quality of those perceptions by comparing them with their expectations (Kwarteng, 2021). However, there is disagreement in the literature regarding the evaluation of quality in higher education. The term "quality" is used to refer to legal compliance audit, management, monitoring, or evaluation (Dwaikat, 2021).

Concerns have also been raised regarding the rapid expansion of the higher education sector and the subsequent decline in quality standards, which can to a large extent affect graduate employability (Choudhury, 2019). According to an empirical study conducted by Psomas and Antony (2017), TQM improves the performance of HEIs. Despite the extensive literature on TQM in education, there are relatively few comprehensive studies available. Currently, many HEIs require accreditation from various national and international agencies. However, these HEIs often encounter challenges due to the significant variations in the essential processes and standards required by different accrediting bodies (Wilkerson, 2017).

In this context, education has been recognised as a crucial pillar in Oman's economic and social growth plans. To regulate the quality of education and encourage educational institutions to improve their quality management systems, the Oman Authority for Academic Accreditation and Quality Assurance of Education (OAAAQA) was established (The Education Council, 2018). In Oman, institutional accreditation involves a range of procedures that work simultaneously to ensure that institutions can pursue their specific objectives and strategies while meeting basic criteria. The institutional accreditation procedure consists of two stages. Stage 1 involves a quality audit and Stage 2 encompasses a standards assessment. Typically, a HEI in Oman will undergo a standards evaluation four years after a quality audit, initiating a five-year institutional accreditation cycle. The quality audit allows HEIs to critically evaluate their procedures and practices and identify areas for improvement. Subsequently, the standards assessment determines

whether HEIs have fulfilled the necessary requirements for accreditation. The accreditation cycle is maintained through a standards assessment conducted every five years (OAAAQA, 2024).

PROBLEM STATEMENT

The Oman Vision 2040 places a high priority on raising the quality standards of higher education (Oman Vision 2040 Implementation Follow-up Unit, 2020). However, Oman's educational system faces ongoing challenges that require institutions to improve their quality management systems. It is crucial for Oman to prepare its graduates to be job-ready and meet the professional challenges as well as to address the shortcomings of the local curricula to achieve the required standards. Additionally, it has been noted that some of the academics lack an awareness of the latest industrial trends (Shaibany, 2018; The Education Council, 2018). The University of Technology and Applied Sciences (UTAS) is the newest university in Oman. It was founded in 2020 under the Royal Decree 76/2020 and comprises seven colleges of technology and six colleges of applied sciences (The Government of the Sultanate of Oman, 2020). Achieving institutional-standard accreditation is critical for UTAS, particularly for the seven colleges of technology under its jurisdiction. These colleges are in the initial stages of institutional accreditation and must align their services and operations plans with the accreditation criteria. Currently, existing research on TQM studies at UTAS is limited and insufficient. The UTAS has experienced several challenges, including the need to establish a uniform set of policies and procedures, enhance teaching and learning quality, develop a consistent system of customer focus and improve support services and facilities (Samsamiya, 2021; Majlis A'shura Oman, 2022). Consequently, the implementation of TQM at UTAS is inadequate in terms of the quality of teaching and learning, customer focus and support services and facilities. The critical components of TQM implementation appear to be misaligned, resulting in a gap between the implementation of TQM and its effectiveness. This paper investigates the implementation of TQM at UTAS, focusing on the quality of teaching and learning, customer focus, support services and facilities and the critical components of TQM implementation at UTAS.

LITERATURE REVIEW

Concept of Total Quality Management

The TQM is a management theory that advocates for the involvement of every individual in the overall development of an organisation. The three words that make up the acronym TQM, namely, total, quality, and management, can be

interpreted in various ways by different academics and practitioners (Alauddin, 2019). The TQM is characterised as a change in the way an organisation is managed, where quality is defined as understanding and meeting consumer needs by aligning specifications with those needs. This transformation entails focusing the organisation's efforts towards the continuous enhancement of all procedures and functions, particularly the various stages of work (Anil and Satish, 2019).

Manatos, Sarrico and Rosa (2017) emphasised the importance of incorporating quality management into higher education. They argued that to provide a comprehensive approach to quality, organisations should apply their management systems across a range of processes. The incorporation of management techniques and activities is particularly appealing to universities. Key areas of focus in quality management include teaching, learning, support systems and customer focus, which are fundamental principles of quality management. Elken and Stensaker (2018) introduced the concept of quality work as an additional perspective on quality improvement. Quality work adopts an action-oriented strategy that concentrates on both formal and informal procedures, as well as various players, that continuously affect daily operations to enhance quality in higher education. Furthermore, external quality accreditation plays a pivotal role in demonstrating certified quality and appropriate educational policies to the public and society. This accreditation can determine the professionalism and appropriateness of an institution's internal quality assurance activities. As part of its quality accreditation policy, educational institutions must collaborate with reputable local and international accrediting bodies to determine the best approach, timing and scope of accreditation (Tien et al., 2022).

Quality of Teaching and Learning

Currently, HEIs face challenges due to the rapid expansion of knowledge, which necessitates shifting from the traditional, rigid, teaching-centred approach to a more learning-centred model. This shift aims to produce competent workers who are capable of managing their knowledge effectively (De Vincenzi, Garau and Guaglianone, 2018). Nonetheless, recent studies reveal that the application of quality management in the teaching and learning processes of HEIs is not well understood (Das and Mukherjee, 2017). Quality assurance in teaching and learning is an integral component of university governance and quality management has become a fundamental issue in educational institutions. There has been a growing scholarly emphasis on quality control in teaching and learning, evidenced by an increasing number of publications, particularly in higher education journals. Professionalism among the teaching and academic staff is essential for any HEI seeking to implement a quality-control plan in its programmes and training activities (Usaci and Sargu, 2021).

Achieving the goals of higher education depends on ensuring and enhancing the quality of teaching and learning. Institutional quality assurance systems play a crucial role in this regard as they promote a culture of quality and directly impact student learning outcomes (Kadhila and Iipumbu, 2019). In higher education, improving teaching quality is always a priority and feedback from society and students has been increasingly emphasised by higher education authorities and institutions as a valuable source for improving the quality of education. Teaching and learning quality are consistently sought indicators that most educational institutions strive to achieve throughout their establishment. Moreover, the aim of accreditation organisations is to improve the efficiency of management education resulting in expected improvements in quality and efficacy (Lagrosen, 2017).

Customer Focus

According to Talapatra and Uddin (2019), HEIs compete for a competitive advantage and excellent service quality, making the assessment of educational service quality critical for motivating and providing feedback on the efficacy of educational planning and implementation. Focusing on customers helps organisations improve since customer satisfaction is essential. Customer focus is an integral part of many quality management systems and the TQM approach emphasises its importance. The fundamental definition of TQM describes a management strategy for long-term achievement through customer satisfaction (Bangert, 2019). Customer focus has been identified as the most prevalent TQM practice linked to customer satisfaction. To cater for the needs and desires of customers, the organisation aims to establish an efficient style that minimises cost, time and effort through the efforts of all employees. Furthermore, TQM has grown in importance as a means for organisations to reduce costs, boost revenue and productivity, enhance customer satisfaction, obtain a competitive edge and gain substantial returns (Fernandes et al., 2017).

Polese et al. (2019) asserted that the implementation of TQM requires a customer-focused strategy. Consequently, numerous scholars have recognised that different customers may exist in various contexts and stages. According to Latif et al. (2019), students are the main customers of the university. The study also evaluated student satisfaction and the extent to which the quality indicators impacted them. Student commitment to their university was based on their level of satisfaction (Mattah, Kwarteng and Mensah, 2018). Furthermore, Ellitan and Mullia (2019) categorised customers into two groups: students and internal staff (faculty and non-academic staff). They concluded that treating employees as the most dedicated consumers of the management may prove to be highly beneficial. This change in perspective can enhance staff well-being, employee retention and productivity. Subsequently, the institution may gain a higher reputation (*Business Matters*, 2020).

Support Services and Facilities

To help students manage the emotional and academic demands of education, appropriate support services for students are essential. The HEIs are under increasing scrutiny from the public, students and other stakeholders. As such, these institutions must provide effective support services that enhance the academic experience and success of students, enabling them to reach their full potential (Shikulo and Lekhetho, 2020). All educational institutions should be equipped with advanced infrastructure and facility management strategies can significantly streamline the process of managing and monitoring facilities in HEIs. In the context of a university, facility management significantly impacts an organisation's goals by influencing both revenue and expenditure. As a result, the university's development plan gains additional value (Alsayyari et al., 2019; Khan, Malik and Janjua, 2019). Bröchner, Haugen and Lindkvist (2019) stated that the role of facilities management in the education sector is to maintain buildings in good condition and meet the demands of its users. Any campus that aspires to provide high-quality education must have appropriate facilities, resources and maintenance services, all of which help to create a more positive learning environment for its students.

According to Abbas, Kumari and Al-Rahmi (2024), resources are important as they serve as a basis for HEI to achieve their objectives. These resources include personnel, the campus environment, infrastructure and facilities such as the library, internet access and support for research and development, all of which play a key role in helping HEIs accomplish their quality goals. Effective HEIs can manage their resources to enhance their policies and processes while balancing between the demands of all stakeholders, in particular managers, society and the government. According to OAAAQA (2016), HEIs should manage their facilities strategically to ensure that all facilities and services effectively meet the needs of students and employees and are aligned with the university's goals. Furthermore, there should be a well-designed plan for support services that cater to students' educational needs. To enhance student performance, it is imperative to understand how students perceive themselves and how these support systems are used. In all educational settings, whether formal or informal, students require support. Students need assistance not only with academic matters but also social and emotional aspects of their education (Kaur, 2016).

Conceptual Framework

Based on the literature review, the following hypotheses were created, as shown in Figure 1.

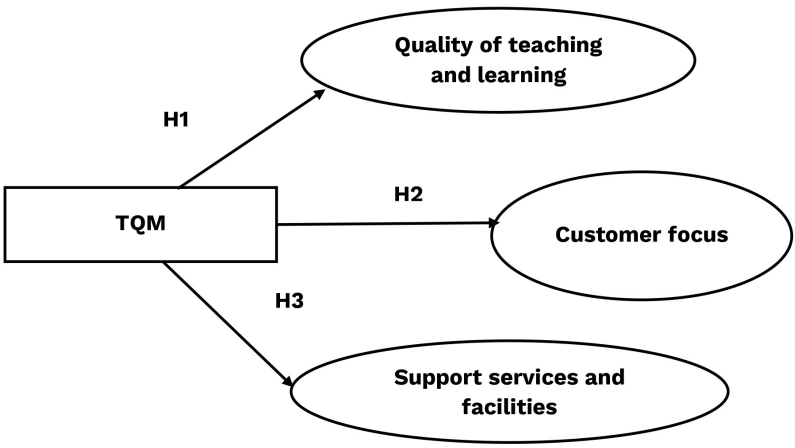

Figure 1. Conceptual framework

H1: TQM implementation and quality of teaching and learning are significantly correlated

The goal of educational systems is to equip graduates with the knowledge and skills required to positively impact society and give their lives significance (Hasan et al., 2018). One of the essential elements of effective teaching is flexibility. It is important to take into account the different learning styles as well as procedures when teaching. Active teaching is necessary to engage students in learning activities that will lead to the intended outcomes (Jeyaraj, 2019). Applying TQM to teaching and learning management is a consistent and effective approach to ensure that teaching and learning are successful. This encompasses the quality of the curriculum, the instructors and staff, the administration and policies, the students and the subjects being taught. Furthermore, the TQM technique facilitates the educational process. The effectiveness of the teaching and learning process is greatly impacted by the TQM technique (Bunglowala and Asthana, 2016). Additionally, teaching quality is a crucial aspect of overall quality management and creating a supportive environment for teaching and learning is the primary objective of TQM in the educational system (Mahmood and Ismail, 2018).

H2: TQM implementation and customer focus are significantly correlated

Customer focus is an essential part of TQM necessary to achieve outstanding service (Zakaria et al., 2018). It is key element of TQM procedures used to evaluate the quality of organisational services (Iqbal and Asrar-ul-Haq, 2018). According to Anil and Satish (2019), there is a direct and favourable relationship

between TQM practices and customer satisfaction levels. Consequently, customer focus has emerged as the most popular TQM strategy associated with customer satisfaction. The concept of customer focus is an integral part of many quality management systems (Bangert, 2019). The primary and most crucial component of TQM is the organisation's focus on its customers. The TQM recognises that if a customer is dissatisfied, good service is meaningless (Daru, 2016). The focus on customers consistently helps the organisation to improve, as such satisfying customers is vital.

H3: TQM implementation and support services and facilities are significantly correlated

Institutions should ensure the quality of their support services and facilities. Adequate infrastructure and facilities, such as classrooms equipped with the necessary teaching materials, are essential for enhancing student education. The TQM can identify approaches for enhancing services provided to staff and students, acting as indicators of support services and facilities (Zakaria et al., 2018). Moreover, TQM is linked to student life outcomes in the context of colleges and universities. The highest level of governance is necessary to guarantee both academic and non-academic services for students, who are the primary consumers (Rosinawati, Khadijah and Warta, 2021). Better services for the community and its students are made possible through TQM (Hasham, 2018). Modern facilities and the most recent educational resources will ensure that learners have the finest possible learning experience in a conducive environment (Jackson, 2024).

METHODOLOGY

The goal of this research is to investigate TQM implementation with regards to the quality of teaching and learning, customer focus and support services and facilities. Additionally, it aims to identify the critical components of TQM implementation at UTAS and provide recommendations for future improvement. To properly understand the research problem, a theoretical framework was constructed using secondary data collected from reliable online sources. The review framework discusses variables such as quality of teaching and learning, customer focus and support services and facilities. The secondary data gathered for this study informed the theoretical framework, which helped to establish the hypothesis and better understand the research problem. The study employed a quantitative method to analyse the problem.

The study evaluated the hypotheses and obtained valid and accurate results by applying a deductive approach. An online questionnaire was employed targeting staff and students from seven colleges of technology at UTAS in the

Sultanate of Oman using a convenient sampling technique. The research design was both exploratory and descriptive. Scholars and relevant practitioners can use the study's findings to address various issues faced by the institution. The HEIs can use the outcomes as a benchmark for improvement, utilising the findings on factors related to the quality of teaching and learning, customer focus, support services and facilities.

Questionnaire Development

The questionnaire was derived from the literature review and developed to serve as the foundation for TQM implementation at Omani HEIs, particularly UTAS. It includes the following sections: (1) demographic information, (2) quality of teaching and learning, (3) customer focus and (4) support services and facilities. The demographic section contains data from respondents such as gender, UTAS colleges of technology branches, position in the institutions, years of experience in UTAS and level of education. The questionnaire was reviewed by a quality assurance expert in UTAS. The tests for reliability and validity were conducted to examine these concepts. Each of the 10 items which comprised 30 sub-items, achieved a Cronbach's alpha score close to 1. This indicates that the scale has an overall high reliability, making the data analysis valuable. The questionnaire was developed using Google Forms and was rated on a five-point Likert scale ranging from strongly disagree to strongly agree.

Sampling Method

The questionnaire was distributed on 2nd March 2023 via UTAS outlook email and was sent to 36,949 students enrolled in various degree levels at UTAS and 2,881 staff holding various roles across seven technical colleges in the Sultanate of Oman. A total of 300 completed questionnaires were collected from 149 students and 151 staff. A convenient sampling approach was used for this study due to its reliable approach of gathering data from individuals in the specified group. This approach ensured that everyone had an equal chance of participating in the evaluation making it a trustworthy data collection method.

Data Analysis

A quantitative analysis was adopted for this study. To determine whether the sample mean is statistically significant to the population mean, descriptive statistics was used, more specifically Statistical Package for the Social Sciences (SPSS) version 27 (IBM Corp., Armonk, NY, US). To assess the validity of the null hypothesis and the likelihood that the data is accurate under

the null hypothesis, one-sample *t*-tests were conducted and *p*-values were applied in testing the hypothesis. A 95% confidence interval for the difference and a significance level of 0.05 were used in the statistical tests.

RESULTS AND DISCUSSION

Demographic Analysis

Participants in this research were staff and students from seven technical colleges affiliated with UTAS, representing a range of job titles and educational backgrounds. Out of 300 respondents, 125 were male (41.6% of the total population) and 175 were female (58.0% of the total population). Among the respondents, 49.67% were students and 37.30% were lecturers at seven colleges of technology. The largest percentage of respondents were from Shinas College of Technology, with 32%. Additionally, 2% of the lecturers had been working with UTAS for more than 26 years and 4% between 16 years to 20 years. Among the staff, 15.67% held PhD degrees. Table 1 displays the demographic information of respondents.

Table 1. Demographic information

Demographic Profile	Category	Frequency	%
Gender	Male	125	41.67
	Female	175	58.33
UTAS branch	Muscat	18	6.00
	Nizwa	18	6.00
	Ibra	25	8.00
	Al-Musanaa	54	18.00
	Shinas	97	32.00
	Ibri	30	10.00
	Salalah	58	20.00
Position in the institution	Student	149	49.67
	Lecturer	111	37.30
	Admin staff	25	8.30
	Technician	12	4.00
	Dean/Assistant Dean/Head of Centre/Head of Department	3	1.00

(*Continued on next page*)

Table 1 *Continued*

Demographic Profile	Category	Frequency	%
Years of experience in UTAS	Less than 5 years	172	57.30
	6 years to 10 years	47	15.67
	11 years to 15 years	63	21.00
	16 years to 20 years	12	4.00
	More than 26 years	6	2.00
Level of education	Undergraduate	87	29.00
	Diploma	83	27.67
	Post-graduate	83	27.66
	Doctorate (PhD)	47	15.67

Hypothesis Testing Results

In this study, the research objective is to identify the TQM implementations at UTAS in relation to the quality of teaching and learning, customer focus and support services and facilities. The results of the null hypotheses are as follows:

Null Hypothesis (H1): There is no significant correlation between the quality of teaching and learning and TQM implementation. Table 2 shows that the *p*-value is less than 0.05. The observed *t*-value is 3.167 with degrees of freedom (n – 1) = 299 and the statistical significance (*p*-value) = 0.002 [Sig. (2-tailed)] of the one-sample *t*-test. Since p = 0.002 and is less than 0.05, the null hypothesis is rejected. Therefore, the analysis is valid and a significant correlation exists between the quality of teaching and learning and TQM implementation. The findings of this study is consistent with the studies conducted by Bunglowala and Asthana (2016), Mahmood and Ismail (2018) and Jeyaraj (2019), who emphasised that flexible teaching is a crucial aspect of effective education and that integrating TQM into learning management and teaching is a logical and reliable way to ensure successful teaching and learning. The TQM methodology enhances the teaching and learning process by prioritising the creation of a supportive environment, making it the primary objective of TQM in the educational system.

Null Hypothesis (H2): There is no significant correlation between customer focus and TQM implementation. Table 2 shows that the *p*-value is greater than 0.05. The observed *t*-value is 1.271 with degrees of freedom (n – 1) = 299

and the statistical significance *p*-value = 0.205 [Sig. (2-tailed)] of the one-sample *t*-test. Since*p* = 0.205 which is greater than 0.05, the null hypothesis is accepted. Therefore, there is no significant correlation between customer focus and TQM implementation. The finding does not align with the results reported by Zakaria et al. (2018), Anil and Satish (2019) and Bangert (2019), who claimed that the core definition of TQM is a management strategy aimed at long-term achievement through customer satisfaction, emphasising the importance of customer focus as a key concept in TQM.

Null Hypothesis (H3): There is no significant correlation between support services and facilities and TQM implementation. Table 2 illustrates that the *p*-value is less than 0.05. The observed *t*-value is 2.573 with degrees of freedom (*n* – 1) = 299 and the statistical significance (*p*-value) = 0.011 [Sig. (2-tailed)] of the one-sample *t*-test. Since *p* = 0.011 and is less than 0.05, the null hypothesis is rejected. Hence, the analysis is valid and a significant correlation exists between support services and facilities and TQM implementation. This result aligns with Hasham (2018), Zakaria et al. (2018), Rosinawati, Khadijah and Warta (2021) and Jackson (2024), who argued that TQM serves as an indicator of facilities and support services, identifying strategies for improving the quality of attention given to faculty and students. The TQM enables better services for the community and its students. Therefore, modern facilities and the latest educational resources ensure that learners have the finest possible learning experience in a conducive environment.

Table 2. One-sample *t*-test results for TQM implementation variables

Variables	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Quality of teaching and learning	3.167	299	0.002	0.180	0.068	0.291
Customer focus	1.271	299	0.205	0.072	−0.039	0.183
Support services and facilities	2.573	299	0.011	0.139	0.033	0.245

Table 3 demonstrates the group statistics and displays the mean, standard deviation and standard error mean for each group in terms of quality of teaching and learning, customer focus and support services and facilities.

Table 3. One-sample descriptive statistics for TQM implementation variables

Variables	*N*	Mean	Standard Deviation	Standard Error Mean
Quality of teaching and learning	300	3.68	0.98	0.06
Customer focus	300	3.57	0.98	0.06
Support services and facilities	300	3.64	0.94	0.05

Critical Components of TQM Implementation at UTAS

Based on the research's objective, the critical components of TQM implementation at UTAS were identified. The interpretation of the data used the mean to provide insights. Variance was employed to understand how individual numbers relate to each other within the data set, specifically how far each number is from the mean. This approach is commonly used in research as the central tendency measure because it considers all data values in set to provide the most comprehensive assessment. Therefore, the mean derived from a larger number of data points is more valuable. The findings are presented in Tables 4 to 6.

Table 4 demonstrates that among the components of quality of teaching and learning, the majority of respondents selected Item 1, The professionalism of teaching and academic staff is the priority of the institution, which had an average mean value of 3.81. This was followed by item 10, Chance is always given to students to provide their criticism and feedback, with an average mean value of 3.76. Items 5 (The institution ensures that teaching meets the learning outcome of the student's programme) and 9 (There is regular classroom observation to assist faculty in improving content delivery) also received high average mean values of 3.70 and 3.71, respectively. These findings are consistent with the findings of Usaci and Sargu (2021), who emphasised that professionalism among teaching and academic staff is fundamental for any HEI wishing to implement a quality-control plan in its programmes and training activities. Similarly, a study conducted by Lagrosen (2017) highlighted that in higher education, improving teaching quality is always a priority and the importance of feedback from society and students is increasingly recognised by higher education authorities and institutions as a valuable source of information for improving educational quality. Obtaining high standards in teaching and learning are ever-sought indicators that many educational institutions strive to achieve.

Table 4. Quality of teaching and learning

Item No.	Statement	Mean	Median	Mode	Variance	Standard Deviation
1	The professionalism of teaching and academic staff is the priority of the institution.	3.81	4.00	4.00	1.27	1.13
2	The regular teaching and learning resources are reviewed and they are appropriate and effective.	3.68	4.00	4.00	1.24	1.11
3	The institution has emphasised feedback from society and students as a valuable source to improve education quality.	3.63	4.00	4.00	1.30	1.14
4	The institution ensures that teaching allows students to fully grow as learners.	3.68	4.00	4.00	1.15	1.07
5	The institution ensures that teaching meets the learning outcome of the student's programme.	3.70	4.00	4.00	1.23	1.11
6	The institution applies TQM approaches to all aspects of the academic units including teaching and learning.	3.65	4.00	4.00	1.25	1.12
7	A well-defined strategy has been implemented for the selection and training of suitably skilled and qualified staff.	3.55	4.00	4.00	1.37	1.17
8	The institution ensures teaching quality by evaluating teaching effectiveness and maintaining appropriate staff-to-student ratios.	3.63	4.00	4.00	1.18	1.09
9	There is regular classroom observation to assist faculty in improving content delivery.	3.71	4.00	4.00	1.22	1.10
10	Chance is always given to students to provide their criticism and feedback.	3.76	4.00	4.00	1.24	1.11

Table 5 shows that among customer focus components, the majority of respondents selected Item 2, The process for evaluating the quality of educational services and offering insightful criticism is well-defined with an average mean value of 3.71. This was followed by Items 1 (The institution

competes for high service quality by concentrating on students' and staff's needs) and 4 (The institution has invested resources in initiatives and strategies that will increase student and staff satisfaction), both with an average mean value of 3.59, respectively. The results are consistent with Talapatra and Uddin (2019), who asserted that HEIs strive for a competitive advantage and excellent service quality, making the assessment of educational service quality crucial for motivating and providing feedback on the efficacy of educational planning and implementation. The findings also align with Bangert (2019), who emphasised that customer focus is the most essential quality management principle, with TQM representing a management approach aimed at long-term achievement through customer satisfaction. Furthermore, Wang and Meckl (2020) highlighted the importance of valuing and considering customer feedback at every stage of the development process to enhance organisational performance.

Table 5. Customer focus

Item No.	Statement	Mean	Median	Mode	Variance	Standard Deviation
1	The institution competes for high service quality by concentrating on students' and staff's needs.	3.59	4.00	4.00	1.13	1.06
2	The process for evaluating the quality of educational services and offering insightful criticism is well-defined.	3.71	4.00	4.00	1.16	1.08
3	There is a proactive approach to resolving concerns and providing high-quality services.	3.55	4.00	4.00	1.18	1.09
4	The institution has invested resources in initiatives and strategies that will increase student and staff satisfaction.	3.59	4.00	4.00	1.21	1.10
5	The institution always comes up with fresh approaches to exceed students' and staff's expectations.	3.49	4.00	4.00	1.28	1.13
6	There is a flexible procedure for accomplishing student and staff satisfaction results.	3.58	4.00	4.00	1.17	1.08

(*Continued on next page*)

Table 5 *Continued*

Item No.	Statement	Mean	Median	Mode	Variance	Standard Deviation
7	The institution has a strong system to know if the efforts to improve the quality of education and services have been successful.	3.55	4.00	4.00	1.12	1.06
8	There is a clear plan to identify the various student and staff personalities, support their needs and improve retention.	3.54	4.00	4.00	1.37	1.17
9	The institution works hard to produce high-quality services that match students' and staff's needs.	3.56	4.00	4.00	1.28	1.13
10	The institution valued students' and staff's feedback at every level of the development process.	3.57	4.00	4.00	1.32	1.15

Table 6 reveals that among support services and facility components, the majority of respondents selected Item 6, Academic advising, learning support and teaching resources are accessible to assist students, with an average mean value of 3.74. This was followed by Items 5 (Academic support services are provided in a well-managed manner to help students meet their learning goals) and 8 (The strategic approach is aligned with facilities management to ensure all services are managed in the correct direction), both with the same average mean value of 3.70. These findings align with Shikulo and Lekhetho (2020), who emphasised that for students to succeed academically and realise their full potential, efficient support services are essential. Similarly, the results also support a study by Bröchner, Haugen and Lindkvist (2019), which highlighted the importance of facilities management in the education sector. They stressed that maintaining buildings in good repair and ensuring they meet the needs of their users is crucial for any campus aspiring to provide high-quality education. Suitable facilities, resources and maintenance services contribute significantly to creating a positive learning environment for students.

Table 6. Support services and facilities

Item No.	Statement	Mean	Median	Mode	Variance	Standard Deviation
1	The infrastructure and educational facilities are sufficient and support the students.	3.45	4.00	4.00	1.42	1.19
2	Institution facility management significantly impacts the goals by affecting both revenue and expenditure.	3.63	4.00	4.00	1.12	1.06
3	Facility managers create a clean, safe atmosphere that promotes student development and learning.	3.69	4.00	4.00	1.11	1.05
4	There is a suitable maintenance service on the campus to support a high-quality educational environment.	3.66	4.00	4.00	1.28	1.13
5	Academic support services are provided in a well-managed manner to help students meet their learning goals.	3.70	4.00	4.00	1.25	1.12
6	Academic advising, learning support and teaching resources are accessible to assist students.	3.74	4.00	4.00	1.20	1.09
7	There is an adequate resource, library, information and learning technology services to support academic and research activities.	3.60	4.00	4.00	1.21	1.10
8	The strategic approach is aligned with facilities management to ensure all services are managed in the correct direction.	3.70	4.00	4.00	1.07	1.03
9	Facilities, activities and student support services are all created to make learning simpler and more interesting for students.	3.57	4.00	4.00	1.16	1.08
10	The institution's support services and facilities comply with regulatory standards.	3.64	4.00	4.00	1.04	1.02

CONCLUSION

The aim of this study is to investigate implementation of TQM at UTAS with regards to the quality of teaching and learning, customer focus and support services and facilities. Additionally, the study seeks to identify the critical components of TQM at UTAS and provide recommendations for the future improvements. The findings, indicate that UTAS prioritises the professionalism of the teaching and academic staff. Opportunities for students to provide criticism and feedback are encouraged, ensuring that teaching meets the learning outcome of student's programme. Regular classroom observations assist faculty in improving content delivery. In terms of customer focus, the findings demonstrate that a systematic approach exists for evaluating the quality of educational services and offering insightful input. The institution aims for excellent service quality by focusing on the needs of students and staff, allocating resources to initiatives and approaches that will boost staff and student satisfaction.

The results indicate that academic advising, learning support and teaching resources are accessible to assist students. Academic support services are managed effectively to assist students in achieving their educational objectives. Additionally, facility management ensures a clean, safe environment that promotes student development and learning. The study concludes that the quality of teaching and learning, customer focus and support services and facilities are all critical components of implementing TQM at UTAS. To enhance the quality of services provided by HEIs, future research should explore the relationships between different factors, identifying which components should be prioritised for better quality services.

Recommendations and Suggestions for TQM Implementation at UTAS

Based on the survey analysis concerning the implementation of TQM at UTAS, several opportunities for future improvements have been identified.

Quality of teaching and learning

For the selection and employment of staff who are suitably skilled and experienced, UTAS should develop a defined and comprehensive plan. The qualifications and previous experience required for each position should be clearly stated in the recruitment and selection processes. Current staff must undergo the most recent training programmes to ensure they are adequately and professionally prepared. It is recommended that new employees should receive training for at least six months and any staff member who leaves the organisation should be promptly replaced with someone new. The recruitment and selection processes should be strategically aligned with UTAS' long-term

goals. The institution should focus on ensuring quality of teaching by assessing teaching efficacy and maintaining appropriate staff-to-student ratios.

Customer focus

To exceed the expectations of both students and employees, the institution should constantly develop innovative approaches. This can be achieved through regular feedback, review of the activities and fostering creative thinking. A robust mechanism is necessary to determine the success of initiatives aimed at enhancing service quality and programmes. Furthermore, to recognise and cater to the diverse personalities and needs of students and staff a clear plan should be in place. The institution must focus on developing excellent facilities that meet the requirements of both students and staff. In addition, UTAS should empower its staff and students to contribute ideas and learn from industry leaders, ensuring it remains up-to-date on trends in education and related industries at national and international levels.

Support services and facilities

The university should prioritise improving its learning facilities, student support services and infrastructure. This can be achieved by benchmarking against top universities, establishing review criteria and seeking input from the educational support centre. To support academic and research activities, the university must ensure sufficient resources, including libraries, information services and learning technology services. Activities, facilities and services for students should be designed to simplify and enhance the learning experience. Conducting surveys of existing facilities, developing improvements where necessary will help foster an environment where employees feel a sense of ownership. Additionally, UTAS should engage with other stakeholders and members of the industry to ensure comprehensive quality enhancement. Finally, the institution's support services and facilities should also comply with regulatory standards.

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