

# Influence of Total Quality Management and Knowledge Management on Quality of University Academic Programmes: A Literature Review

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## ABSTRACT

*Total Quality Management (TQM) and Knowledge Management (KM) have gained significance in the education sector for the last two decades. The purpose of this paper is to assess the application of TQM and KM principles in higher education institutions. Precisely, the paper reviews the broad empirical literature on the influence of TQM and KM on the quality of academic programmes. Two key findings are disclosed; first, effective execution of TQM principles in higher education results in the improvement of the quality of academic programmes particularly by focusing on the teaching and learning activities, which include inputs (students and faculty), outputs (graduate capabilities), and processes (interaction between inputs and outputs). Second, the application of KM philosophies in higher education contributes to the quality of academic programmes through curriculum development and reviews, knowledge sharing, and documentation. This paper serves as a guide to future studies especially in areas focused on the quality of academic programmes in higher education.*

**Keywords:** Knowledge management, total quality management, academic programme quality

## I. BACKGROUND

The quality context has become a strategic weapon in the globally competitive marketplace due to the rapidly changing societal needs, which increases the demand for quality outputs ([Bendermacher et al., 2017](#); [Elken & Stensaker, 2018](#)). In the last decade, there has been a strong emphasis on the search for quality education especially with the persistent educational reforms in higher education (HE) both locally and internationally ([Anafinova, 2020](#)). As a result, defining and measuring quality has remained contentious due to multifaceted stakeholders' viewpoints and expectations ([Becket & Brookes, 2006](#); [Rodman et al., 2013](#)). Likewise, [Seyfried and Pohlenz, \(2018\)](#) established that quality is defined and assessed differently based on the concerns and expectations of the parties involved, which makes defining and measuring quality in HE a challenging task. Besides, [Green \(1994\)](#) observed that quality is an indescribable concept that is easy to understand but difficult to articulate.

The author defined quality as the provision of distinct and exclusive products and services that convoke the status of the user or owner such as high standards of production, delivery, and presentation. Similarly, [Materu \(2007\)](#) delineates quality in HE as ‘fitness for purpose,’ which also means conformance to acceptable specification or standard. A study by [Owlia and Aspinwall \(1996\)](#) concluded that any quality improvement programme should have specific measurement parameters to determine the quality of the products or services. The authors developed a framework highlighting six (6) key dimensions of quality (i.e. tangibles, competence, attitude, content, delivery, and reliability) in HE that form a basis for evaluating and improving the quality of education. [Tight \(2020\)](#) expressed quality in HE as the fundamental theories, practices or guidelines that organizations should use to achieve desired goals.

Though quality in education has existed since time immemorial, the concept of quality assurance emerged in the late 1980s with the introduction of the ‘evaluative state’ of educational institutions. For instance, according to [Green \(1994\)](#), the notion of quality in the educational context originated from the competitive business world and later the education sector embarked on adopting business techniques and practices into managing educational institutions.

Similarly, the author observed that the recent global educational reforms are influenced by the speedy expansion of student enrolments, shrinking financial support, increased competition, accountability, efficiency, and quality. A study by [Amaral \(2014\)](#) stated that the rapid expansion of quality mechanisms was vastly influenced by the initiation of quality assessment campaigns especially in the developed countries such as the USA, UK, and Australia emphasizing quality enhancement and accountability. The author argues that the evaluative state was due to changes in the educational systems such as increased student mobility, complexity, and regulations of the higher education institutions (HEIs).

Correspondingly, the Bologna Declaration, which was established in June 1999 stressed more on the necessity to develop common criteria and methodologies to serve as points of reference to assure the quality in HE ([Neave, 2003](#); [Rosa & Amaral, 2014](#); [Manatos et al., 2017a](#)). Another contributing factor to the QA progression in HE is the establishment of international QA frameworks and QA regulatory watchdogs such as the European Association for Quality Assurance in Higher Education (ENQA) in Europe, the Council on Higher Education Accreditation (CHEA) in the US, the African Standards and Guidelines for Quality Assurance (ASG-QA), and other topical developments ([Jarvis, 2014](#)).

At present, each country globally has established quality frameworks and regulatory bodies responsible for assuring the quality of HE by giving baseline standards, guidelines, and procedures.

Quality has become a central theme influencing the way HEIs operate with exceptional terms such as accreditation, audits, and assessments revolving around them. Currently, quality is one of the necessary mechanisms enabling HEIs to adapt to the changing societal needs and continued globalization ([Seyfried and Pohlenz, 2018](#); [Westerheijden, et al., 2007](#)).

Previous literature postulates that there are multiple stakeholders with diverse interests in the educational sector such as students, faculty and scientific community, labour markets, the regulators, policy analysts, quality agencies, the public and other interested parties ([Amaral, 2014](#); [Rosa & Amaral, 2014](#)). The quality principles, approaches and practices in HE are largely driven by the needs and demands of the stakeholders ([Sahney et al., 2004](#)). As a result of the ever-increasing demands from multi-layered stakeholders, the HEIs are gradually adopting market-oriented strategies such as TQM and KM principles to delight their customers and other stakeholders. The following sub-sections highlight the key aspects of the extensive literature on the effectiveness of TQM and KM principles and their influence on the quality of academic programmes.

### 1.1 Total Quality Management

There has been a greater emphasis on the significance of TQM in HE. [Wiklund et al. \(2003\)](#) defined TQM as a continuous improvement management approach focused on the quality and involvement of everyone in the organization. Similarly, [Grundey \(2008\)](#) delineated TQM as a managerial concept that organizations implore to develop mechanisms for continuous improvement of the quality of products and services, efficiency, and customer satisfaction.

According to [Becket and Brookes \(2006\)](#), TQM is one of the international quality tools that has contributed largely to the efficiency of operations in HE. The authors argue that based on TQM principles, several criteria for quality awards have been developed such as the Malcolm Baldrige National Quality Award (MBNQA), the European Foundation for Quality Management (EFQM) model and much more quality models utilized by organizations for self-assessment processes.

However, other scholars in quality assurance suggest that the application of TQM principles is more appropriate to the business environment than education systems due to the complexity of the educational process ([Becket & Brookes, 2006](#); [Harvey, 1995](#)),

TQM ambiguity, bureaucracy and cumbersomeness ([Mosadeghrad, 2014](#); [Newby, 1999](#); [Stensaker et al., 2019](#); [Tight, 2020](#); [Wiklund et al., 2003](#)), and little impact on the student learning experience, curricula, and teaching quality and performance (Harvey & Newton, 2004; [Houston & Paewai, 2013](#); [Koch, 2003](#); [Manatos et al., 2017b](#); [Milliken & Colohan, 2004](#)). The key reason for criticism of QA and quality management practices in HE is largely due to the focus put on compliance, efficiency, accountability, and “managerialism” approach at the expense of quality enhancement ([Tight, 2020](#)).

Nevertheless, a study by [Dejager and Nieuwenhuis \(2005\)](#) posits that TQM principles are critical since they focus strongly on the ultimate customer. Hence the organization should continuously listen to their consumers in this case the students and other stakeholders by constantly reassessing the quality of academic programmes to respond to the changing needs of society. The aforementioned authors provide consent/attestation that TQM is a management-led initiative built on strong organizational culture, teamwork, top management directives, and scientific methods and tools.

TQM in HE denotes activities and processes that are conducted to develop, assure, and assess the quality of teaching and learning activities ([Kleijnen et al., 2011](#)).

This comprises setting standards for quality self-assessments, programme accreditation procedures, benchmarking tools, and other quality-related mechanisms for continuous improvement. The procedures and evidence of TQM activities are well-documented and made available to contribute to the ultimate goal of education.

A study by [Stensaker et al. \(2019\)](#) postulated that the quality practices that influence the academic programmes in HE has been established using different labels as each institution launch its quality management systems (QMS). Another study by [Manatos et al. \(2017b\)](#) argued that HEIs should work towards an integrated approach of quality into global academic structures encompassing holistic educational systems and processes rather than focusing only on specific aspects. According to [Grundy \(2008\)](#), TQM in HE focuses on teaching and learning elements these include, inputs (students and lecturers), outputs (graduates) and processes (interaction between inputs and outputs). The author emphasizes that academic programmes features, their delivery, and assessment methods are the crucial aspects of the overall educational quality.

Further, the standards of an academic programme can be enhanced by improving constantly and unceasingly curriculum contents through review and delivery aspects ([Hughey, 2000](#); [Motwani & Kumar, 1997](#)).

A study by [Sahney \(2016\)](#) revealed that though implementing TQM in HE remains debated, it is still relevant in the current competitive world. The scholar developed an integrated model of TQM in HE, which highlight key indicators of a quality academic programme as comprising of well-defined goals, relevant curricula content and procedure for curricula design and review and much more. Generally, HEIs are viewed as knowledge-intensive service organizations as they are involved in the continuous creation and dissemination of knowledge through research activities, consultancies, and knowledge-sharing forums.

### *1.1 Knowledge Management*

Knowledge management (KM) has become a source of sustainable competitive advantage to the education sector ([Brewer & Brewer, 2010](#); [Devi Ramachandran et al., 2009](#)). In this era of the knowledge-based economy and unpredictable environmental forces affecting organizational activities, consistent dissemination and conversion of tacit knowledge to explicit are a key contributing factor to both individual and organizational performance ([Anvari et al., 2011](#); [Edge, 2005](#); [Mchombu, 2007](#); [Wiig, 1997](#)). [Demchig \(2015\)](#) views KM as that purposeful knowledge creation and sharing activities that an organization undertakes to efficiently enhance performance.

The KM is the process that comprise of knowledge acquisition, dissemination, and application among the faculty staff and students ([Nejadhussein & Azadbakht, 2011](#); [Ooi, 2009](#)). In addition, KM is focused on explicit usage of appropriate methods and tools for performance improvement.

The management of knowledge in HE means not only the storage and manipulation of data but also acquiring the deeply hidden tacit knowledge and leveraging it into the institutional explicit knowledge for easy access and utilization ([Edge, 2005](#); [Omerzel et al., 2011](#); [Wiig, 1997](#)).

Despite the numerous benefits of KM such as excellence in the business sector, there is still limited knowledge on the use of KM to improve the teaching and learning processes and particularly the quality of academic programmes in the HE sector ([Cheung & Man Wong, 2012](#); [Edge, 2005](#); [Fullan, 2001](#)).

Further, one of the challenges facing HE is that most HEIs are yet to develop and execute a KM strategy. A study by [Veer Ramjeawon and Rowley \(2017\)](#) found several barriers to the implementation of KM in HE as; inadequate resources, data, rigid culture and structures, policies, and research activities.

The scholars also found the key enablers to KM as; competent and experienced academic staff, information technology infrastructure, library resources and funds to support knowledge creation and transfer. Similarly, [Mavodza and Ngulube \(2012\)](#) highlighted various challenges that face the knowledge generation and integration as; lack of appropriate guidelines on knowledge sharing, bureaucratic and complex procedures, inadequate information technology platform and organizational directives.

A study by [Gill \(2009\)](#) found that KM applications in HE are achieved by the creation of relevant information systems for library resources and enhancing the quality of academic programmes through curriculum development and constant reviews.

Similarly, [Nejadhussein and Azadbakht \(2011\)](#) highlighted several KM approaches for HE, which include; developing KM centres, creating KM disciplines and incorporating them into the curricula, launching KM learning courses on academic programmes and integrating KM in the university teaching and learning processes and systems. The extant literature also describes educational planning, teaching and learning activities, and curriculum evaluation to increase student performance as KM approaches in the education sector ([Bain, 2006](#); [Devi Ramachandran et al., 2009](#); [Gupta et al., 2015](#); [Mason, 2003](#)).

Therefore, the requirements for successful implementation of KM in HE include an innovative culture and structures, the capacity to learn from errors, and quality data and information ([Sadiq Sohail & Daud, 2009](#)).

There are two types of knowledge: tacit and explicit, which are classified into four categories that illustrate how knowledge is converted in an organization: socialization (tacit-tacit); externalization (tacit-explicit); combination (explicit-explicit); and internalization (explicit-tacit) knowledge conversion ([Gill, 2009](#); [Nejadhussein & Azadbakht, 2011](#); [Nonaka & Takeouchi, 1995](#)). The literature acknowledges that a large percentage of valuable and intangible knowledge is stored in the human brains that may not be easily shared ([Brewer & Brewer, 2010](#); [Omerzel et al., 2011](#)). Hence, the HEIs can tap into valuable knowledge by developing curricula to externalize and articulate tacit knowledge into explicit context for easy access and sharing of knowledge.

[Gill \(2009\)](#) suggested three key approaches to KM in HE as external learning (through hiring a professional expert from outside), internal learning (sharing teaching experiences among faculty members through curriculum development, peer supervision and coaching, and research partnerships), and experiments (teaching experiments among instructors to identify weaknesses and solutions to improve teaching

experiences). As a result, the KM initiatives employed will enhance the quality of academic programmes as new staff learn from their senior colleagues through knowledge sharing and documentation for easy retrieval. Knowledge creation encompasses the exploitation of the already existing knowledge to create new knowledge and finding of new knowledge through partnerships and interactions among students, staff, industry players and other stakeholders ([Nonaka & Takeouchi, 1995](#)).

According to [Mavodza & Ngulube \(2012\)](#), KM simplifies the integration and usage of both tacit and explicit knowledge through collaborative learning, data mining and best practices. As [Riad Shams and Belyaeva \(2019\)](#) observed, knowledge generation and sharing are the pillars for the development of internationally recognized QA processes. Besides, the scholars emphasized that HEIs are responsible to continuously share their knowledge and experience with their regulators for compliance with the set quality standards. The KM initiatives can also be used as a benchmark for quality standards for other institutions through knowledge sharing and transfers. Based on the literature, it is established that an institutional-wide approach to knowledge sharing leads to numerous improvements such as improved quality of curriculum and academic programmes and evaluation outcomes; accelerates the speed of curriculum revisions and developments; interfaculty curriculum

design through collaborations; increased integration of students' evaluations and other key stakeholders viewpoints and enhances faculty progression and development ([Brewer & Brewer, 2010](#); [Devi Ramachandran et al., 2009](#); [Steyn, 2004](#)).

Another study by [Gupta et al. \(2015\)](#) on knowledge measures or indicators described various evaluation attributes and activities for KM in HE as internal processes (e.g. curriculum development, teaching and learning, and student admissions); intellectual achievements (e.g. research publications, academic programmes, graduate capabilities and work-readiness, consultancy engagements and student supervision and mentoring); stakeholders' involvement (e.g. students, employers, regulators, and society); and cerebral development and augmentation (e.g. faculty progression and other developments).

## 2. TOTAL QUALITY MANAGEMENT AND KNOWLEDGE MANAGEMENT

The increased demand for quality academic programmes in HE has reinforced the need for HEIs to adopt an amalgamation of rigorous and transparent quality approaches. Despite the abundance of research on QA approaches in HE, there is no universal consensus on the effective quality mechanisms that HEIs apply to improve the quality of academic programmes.

Many institutions employ multiple quality approaches to enhance the quality of their teaching and learning activities and other products and services. Therefore, this paper focuses on the influence of TQM and KM on the quality standards of academic programmes in HE.

The adoption of TQM philosophy in HE is considered one of the mechanisms used by educational regulators to enhance the quality of education. There is a consensus among the scholars that TQM philosophies contribute to the improvement of educational quality ([Dejager & Nieuwenhuis, 2005](#); [Psomas & Antony, 2017](#)). The literature also illustrates that there is a positive relationship between the successful implementation of TQM principles and the overall quality of academic programmes in HE ([Owlia & Aspinwall, 1996, 1997, 1998](#); [Sirvanci, 2004](#); [Srikanthan & Dalrymple, 2007](#); [Venkatraman, 2007](#)).

The previous studies point out two sides of TQM aspects as hard or technical (tools and techniques) and soft or philosophical (management concepts and principles or practices) that are adopted in HE ([Zwani et al., 2014](#)). Therefore, the focus of this paper is on the soft or key practices of TQM that have been contributed by the quality gurus and the development of quality models such as the Malcolm Baldrige National Quality Award (MBNQA) and the European Foundation for Quality Management (EFQM) quality models.

Based on the MBNQA model, ten TQM elements influence the quality of academic programmes, these include; (1) top-management commitment, (2) education and training, (3) student focus, (4) academic staff involvement, (5) supplier quality management, (6) continuous improvement, (7) process focus, (8) fact-based management, (9) rewards and recognition, and (10) process monitoring and control ([Bayraktar et al., 2008](#); [Ooi, 2009](#); [Owlia & Aspinwall, 1997](#); [Sirvanci, 2004](#); [Venkatraman, 2007](#)).

Managing knowledge has become a source of sustainable competitive advantage particularly in the world driven by massive technology. Previous studies have linked KM to business excellence. For instance, a recent study by [Mahdi et al. \(2019\)](#) described that KM processes enable HEIs to predict the future direction and how competitive they will be in the long run. The scholars emphasized that to attain sustainable competitive advantage; HEIs must continuously generate, store, share, and apply knowledge throughout the entire organization. Numerous benefits are accrued from the effective implementation of KM processes in HE. [Brewer and Brewer \(2010\)](#) found that effective KM strategies increase the ability of an institution to serve both internal and external stakeholders.

A study by [Davenport \*et al.\* \(1998\)](#) identified four broad objectives for KM practices; (1) create and maintain knowledge repositories, (2) improve knowledge access, (3) enhance knowledge environment, and (4) manage knowledge as an asset. Similarly, [Rowley \(2000\)](#) examined the applicability of KM in HE using Davenport's four KM objectives and concluded that knowledge is strategic and HEIs should focus on building culture and values, structures and systems that foster KM practices. The KM practices in HE consist of knowledge generation, acquisition, storage, and dissemination ([Mohayidin \*et al.\*, 2007](#); [Newman & Conrad, 1999](#); [Veer Ramjeawon & Rowley, 2017](#)).

Though there is a close relationship between TQM and KM, and their influence on the quality of academic programmes, to the best knowledge of the researcher, this may be the first study to combine the two constructs in one study. Therefore, this paper examines the influence of quality approaches on the standards of academic programmes. These approaches include TQM and KM.

### 3. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Quality has become a vital component for HE sustainable competitiveness, which requires continuous improvement of syllabi content, learning outcomes, delivery modes and teaching methods to maintain and enhance the quality of academic programmes.

As a result, HEIs have adopted multiple quality management practices and approaches in the search for academic excellence and sustainable competitive advantage. This paper explores the influence of TQM principles and KM dimensions on the quality of academic programmes in HE.

The implementation of TQM principles originated from the manufacturing sector. Though the application of TQM philosophies in the educational sector has received much criticism, there is sufficient evidence that successful execution of TQM principles or practices contributes to the quality of education and particularly the academic programmes. The TQM internationally accepted principles include; top-management commitment, student focus, academic staff involvement, process approach, integrated system, continuous improvement, and fact-based decision-making.

Besides, KM has become strategic to the educational sector and as the source of competitiveness. Effective execution of KM strategies has been linked to numerous benefits including improving the quality of academic programmes. The core activities of KM include knowledge creation, knowledge sharing and knowledge dissemination. Thus this paper explores the existent literature on the influence of TQM and KM on the quality standards of academic programmes in HE.

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