Requirements for Implementing Total Quality Management in Algerian Universities:
An Analytical Examination of Selected Partnerships at Oum El-Bouaghi University with the Socio-Economic Environment



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Abstract:

The higher education and scientific research sector constitutes one of the principal domains, contributing substantially to societal development and advancement. This sector has pursued numerous reforms capable of inducing profound positive transformations across various dimensions to align with the technological era, notably total quality management (TQM) in higher education and scientific research. TQM has garnered significant attention from specialists and researchers seeking to identify essential prerequisites for its implementation in Algerian higher education institutions, as it entails adopting positive changes in diverse activities that promote development, transformation, and economic-social progress in societies. Accordingly, this article elucidates the requirements for applying TQM in Algerian universities.

Keywords: *Algerian universities; partnerships; total quality management; socio-economic environment.*

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Introduction:

Technological transformations in higher education and scientific research have precipitated the emergence of TQM, which has elicited considerable interest among researchers and experts, particularly regarding key prerequisites for its adoption in Algerian institutions and its role in enhancing scientific research quality. Universities serve as engines of progress, innovation, and societal development, achievable only through quality outputs that accommodate rapid global changes. This study examines TQM requirements in Algerian higher education via conceptual analysis, its significance, characteristics, objectives, and an analytical review of select partnerships at Oum El-Bouaghi University with the socio-economic environment.

1. Conceptual Framework of Total Quality Management:

TQM is defined as an integrated administrative and technical system encompassing all phases of industrial or service projects, from planning to performance monitoring of products or services to ensure customer satisfaction (Awad, 2025, p. 1275).

Institutions must employ a suite of methods, processes, and administrative tools to enhance quality, thereby realizing long-term objectives and satisfying stakeholders.

It represents a scientific methodology for organizational and personnel development to deliver goods or services meeting client needs, expectations, and satisfaction through continuous improvement, staff training, teamwork, and client involvement across operational stages (Fachouch, 2022, p. 265).

Robert Binner described it as cultivating a superior performance culture wherein managerial and employee efforts converge to meet client expectations, emphasizing initial performance quality to achieve desired standards at minimal cost and time (Al-Barkano & Boukmiche, 2018, p. 742).

TQM seeks to refine internal and external organizational processes by applying innovative techniques to address challenges amid external variables, ensuring client satisfaction, reputation preservation, mission fulfillment, and sustainability.

2. Nature of TQM in Higher Education:

a. Concept of TQM in Higher Education

TQM constitutes a comprehensive life philosophy reflected in educational institutions' operations across all levels, individuals, circumstances, and temporalities, prescribing administrative practices for continuous improvement of teaching processes and outputs based on clear objectives, authentic work ethics,

and resource optimization, thereby satisfying divine will and participants including faculty, students, and guardians (Ben Mahjoub, 2022, p. 68).

Heng posits that TQM enhances educational quality conceptions, such as student performance improvement, curriculum development, community linkages, and workforce advancement (Chaabani & Ben Yahia, 2018, p. 134).

Quality in higher education resides in the effective utilization of material and moral resources via stakeholder engagement to elevate university outputs, positioning universities as societal engines providing added value through problem-solving and need fulfillment.

Educational objectives under quality paradigms must reflect market, learner, and societal needs, garnering stakeholder satisfaction; institutions must thus:

- Conduct comprehensive needs assessments, discern graduate specifications,

- And formulate realistic, measurable, flexible objectives aligned with societal philosophy (Aoua, 2024, pp. 128-129).

Universities, as open systems interacting with external environments, necessitate TQM adoption among rapid global developments, development openness via novel visions that proximate academia to socio-economic contexts for economic-social advancement.

b. Importance of TQM Implementation:

The significance of implementing total quality management (TQM) in higher education resides in the following dimensions.

- Universities contribute to preparing human resources and training them on sound scientific foundations.

- Optimal utilization of available resources is essential for sustainable development.

- Continuous improvements and developments in the educational process are pursued, aligned with the aspirations of beneficiaries from these institutions.

- Efficiency in managing higher education institutions is enhanced (Bousmina, Mouissi, & Tlouch, 2021, p. 379).

Adopting TQM in higher education constitutes a qualitative leap, empowering students for self-reliance, refining their scientific personas, and preparing them for labor market entry. This occurs through investing in their capacities and skills, nurturing constructive criticism, analytical acumen, teamwork ethos, and positioning them as active societal agents capable of navigating contemporary global developments.

- Supporting university consulting offices, establishing additional ones, and engaging faculty and researchers in technical-scientific collaborations across diverse fields for governmental and private entities—tailored to their expertise and interests—represents primary channels of interaction between universities and their surrounding environments (Badis, 2017, p. 340).

Additionally, universities forge partnerships with diverse societal institutions to devise solutions for prevailing challenges, leveraging faculty expertise by specialization, thereby furnishing society with viable resolutions. Knowledge and experience exchange is facilitated by involving economic and social sectors in curriculum development, alongside promoting scientific events that incorporate community stakeholders to transfer, exchange, and renew expertise consonant with contemporary exigencies. This yields graduates attuned to labor market demands, capable of actualizing ideas, experiences, and knowledge into tangible realities, among other pertinent measures.

Mirroring other Algerian universities, Oum El-Bouaghi University has executed numerous partnership agreements with societal actors to bridge its affiliates (students, faculty, and administrators) to economic and social realities. These enable benefiting from actors' experiences across social, developmental-economic, and related domains.

In recent years, Oum El-Bouaghi University has pursued effective strategies for cultivating societal partnerships. Exemplary is its collaboration with the Social Activity Directorate, which substantially advances social services for sectorial affiliates while augmenting knowledge reserves through field experiences of specialists. This manifests via myriad training courses and workshops for staff, harnessing expertise in sociology and psychology, and applying scientific activity outputs to social realities for widespread benefit—as universities function as open systems influencing and influenced by external milieus, underscoring their social role alongside community partners.

Equally salient is the partnership with the Local Agency for Entrepreneurship Support and Development, recognizing entrepreneurship as a paramount modern approach embraced by Algeria to bolster economic and social sectors. It redirects individual behaviors toward creation and innovation, generating added value and affording student’s opportunities to materialize diverse ideas into innovative projects—such as transforming graduation theses into startups or patents—since students seek fertile grounds to showcase their skills and expertise practically.

This evidences the university's resolve, across its structures, to proximate academia to the socio-economic environment, maximizing societal benefits. It underscores prioritizing scientific research and university outputs for resolving communal challenges, propelling evolution, development, and

advancement across domains. Prevailing societal challenges compel all institutions to adopt pragmatic strategic visions raising national economic growth and diversification; robust societies masterfully exploit available resources, whether human or material.

- Development administrative environments within these institutions.

- Enhancing educational system outputs.

- Augmenting productivity, optimizing resource use, and minimizing waste (Ahmed Atiya, 2020, p. 256).

3. TQM Characteristics, Pillars, and Objectives:

a. Characteristics:

Total quality management (TQM) is distinguished by several key characteristics, outlined as follows:

- Heightened attention to all employees across administrative levels.

- Strengthening the organizational environment through promotion a positive work atmosphere dominated by teamwork spirit.

- Establishing training courses to introduce modern methods in scientific research development and track advancements capable of realizing economic and social development via applied research outputs.

- Supporting diverse research projects oriented toward achieving quality standards in higher education.

- Encouraging investment in human and material resources to serve the university's goals, mission, and vision.

- Developing skills, enhancing expertise, and promoting continuous self-development among university affiliates.

In essence, TQM in higher education strives to realize these vital characteristics, centered on cultivating a supportive organizational culture addressing affiliates' needs. This involves bolstering teamwork, nurturing member skills, reinforcing mutual understanding, and facilitating ongoing exchange of information and knowledge—to elevate awareness of the significance of their outputs in advancing societal innovation.

4. Quality Pillars in Higher Education Institutions:

Quality pillars in university education institutions are encapsulated in the following elements.

- Existence of realistic objectives and verifiable tasks

- Presence of policies, systems, and mechanisms for implementation to attain objectives.

- Binding standards in academic, administrative, student, infrastructural, and resource domains

- Referential descriptors elucidating the nature and attributes of academic programs, awarded degrees across specializations, and metrics for evaluation.

- Measurement systems and advanced performance indicators for appraising policies, systems, and implementation mechanisms within objective-task frameworks.

- Continuous institutional quality management system aimed at review and accountability.

- Mechanisms for ongoing self-development and centers for strategic thinking and future planning (Al-Abed, 2021, p. 120).

A fertile ground for applying quality standards in higher education necessitates strategic planning, precise objective delineation, and policies/methods/activities adopting flexible organizational environments attuned to total quality management (TQM) requirements—encompassing faculty, students, administration, and research. This includes practical standards, output improvement indicators, strength-to-weakness conversion, and consideration of external environmental variables impacting outputs.

5. Objectives of Total Quality Management:

TQM objectives in education manifest as follows:

- Regulating and developing administrative systems in educational institutions through role clarity and precise responsibility assignment

- Elevating student levels across all facets.

- Enhancing competencies of faculty, administrators, and staff in universities while improving performance.

- Increasing trust and cooperation between educational institutions and society.

- Providing atmospheres of understanding, collaboration, and sound human relations among all university personnel.

- Developed cohesion and integration among administrators and staff for teamwork.

- TQM application confers greater local respect, appreciation, and global recognition (Chaabani & Ben Yahia, 2018, p. 136).

TQM in higher education seeks to advance scientific research methods via optimal investment in member competencies, achieving actor cohesion through cooperative, mutually respectful environments that bolster effective communication skills. This directs collective efforts toward student elevation and university-societal collaboration.

6. Implementation Requirements:

a. Student Dimension:

Key requirements for total quality management in the student domain include the following:

- Prioritizing career guidance activities for university students to assist in specialization selection.
- Facilitating student employment, analyzing unemployment causes, and reducing its rate among graduates.
- Examining employer feedback on the quality and caliber of university graduates across disciplines to identify skill deficiencies and implement remedial measures (Badis, 2016, p. 222).
- Investing in students through necessary support to form graduates capable of executing graduation projects that deliver social services to society.
- Encouraging student scientific research and exploratory outputs to bridge theoretical knowledge with practical realities, easing subsequent professional integration.
- Promoting teamwork via participatory cultural activities to heighten collective awareness of teamwork's role in university advancement.

The contemporary university role transcends mere knowledge, information, and experience transmission across generations. It embraces a novel strategic vision aligned with prevailing economic and technological shifts, aiming to engender qualitative momentum across domains for evolution and progress. This is achievable solely through student investment—cultivating creativity and innovation via skill enhancement and capacity building, thereby refining scientific and practical personas to forge active societal contributors, recognizing today's student as tomorrow's leader in their field.

b. Faculty Dimension:

Key requirements for total quality management in the faculty domain encompass the following.

- Providing material and moral incentives, alongside suitable training opportunities.
- Cultivating team spirit among faculty members.
- Enabling them to express opinions regarding the educational process.
- Exposing them to innovations in teaching methods and approaches.

- Offering advancements in student assessment and capability measurement processes (Hebbal, 2019, p. 37).

Given the rapid global developments, renewing knowledge and skills is imperative to track these changes. This involves acquiring new competencies, experiences, and techniques that empower faculty to address diverse challenges flexibly—employing modern technological media in instruction and participating in events that enhance expertise and skills to achieve educational quality.

c. Research Dimension requirements:

Key requirements for total quality management in the research domain include the following.

- Doubling expenditure on scientific research.
- Prioritizing distinguished research projects.
- Conducting studies relevant to professional fields.
- Emphasizing applied research.
- Securing necessary resources and support for university researchers.
- Enhancing the dissemination of knowledge and research outcomes across all domains.
- Reengineering funding and expenditure systems for scientific research (Mehdawi & Boudi, 2016, p. 155).

Research and development represent pivotal methods linking higher education institutions to diverse societal entities—irrespective of nature, type, or scale. Outputs from university research, centers, and laboratories must address prevalent societal challenges. The role of research and development lies in bolstering trust among societal actors (universities, research centers, laboratories, public/private economic institutions, etc.) through applying rigorous scientific outputs, positioning universities as engines of progress and advancement. This entails identifying institutional obstacles, devising pathways to surmount them via research institution outputs, and delivering pragmatic solutions aligned with external environmental shifts.

Additional TQM Implementation Requirements: Additional prerequisites for applying total quality management (TQM) in higher education institutions include the following.

Senior Management Support: Implementing TQM requires endorsement and backing from top administration to realize intended objectives.

Pre-Implementation Preparation: Instilling awareness and conviction among all higher education personnel development trust in TQM, facilitating its adoption and adherence.

Process Standardization: Unifying operations elevates performance quality, simplifies execution, reduces costs through consistent methodologies, and enhances overall skills within higher education institutions.

Comprehensive and Continuous Monitoring: Achieved via quality implementation committees and institutional departments to track, gather data for evaluation, and address deviations from development standards (Al-Abed, 2020, p. 121).

Conclusion:

Implementing total quality management (TQM) holds paramount importance in higher education institutions, as universities function as catalysts for change. This enhances student capacities and knowledge development, cultivating graduates capable of assuming leadership roles and serving society—through applying scientific research outputs to resolve diverse societal challenges and devising effective strategies to propel development and progress by leveraging university outputs, which serve as engines of societal evolution and advancement. In the contemporary era, universities play a pivotal role by affording students opportunities to augment their capabilities and harness creative ideas into innovative projects that generate added value for society, all within the framework of TQM application in academic institutions.

Footnotes:

From the foregoing, critical requirements for TQM standards in higher education encompass:

- Strategic planning with precise objective setting, alongside policies, methods, and activities creating flexible, supportive, research-oriented environments addressing university affiliates' and societal needs.
- Enhancing teamwork spirit, developing member skills, strengthening mutual understanding, and enabling continuous information/knowledge exchange—elevating awareness of output significance in propelling societal innovation.
- Urging universities to establish partnerships with diverse societal institutions for problem resolution, leveraging faculty expertise by specialization to provide societal solutions.
- Promoting knowledge/experience exchange by engaging economic/social sectors in curriculum development and scientific events for expertise transfer, exchange, and renewal aligned with contemporary demands.
- Optimizing student investment to nurture creativity/innovation via skill/capacity enhancement, refining scientific/practical personas—yielding labor market-ready graduates who materialize creative ideas into real-world innovative projects, forging active societal agents.
- Advancing research methods through optimal competency investment, ensuring actor cohesion via cooperative, respectful environments.

- Equipping faculty with new skills, experiences, and techniques for flexible challenge navigation—employing modern instructional technologies and event participation to enhance expertise and achieve educational quality.

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