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Reframing Learning Quality in Higher Education: A TQM-Based Approach in Research and Evaluation Courses

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ABSTRACT

This study examines how Total Quality Management (TQM) is implemented within the learning process of the Research and Educational Evaluation (PEP) course and how it influences learning quality in higher education. The study responds to ongoing concerns regarding the limited effectiveness of conventional teaching approaches in developing students' analytical and research competencies. A qualitative case study design was employed, involving 40 participants including lecturers, students, quality assurance representatives, technical staff, and alumni. Data were collected through in-depth interviews, field findings, and document analysis, and analyzed using a thematic approach based on the interactive model of Miles, Huberman, and Saldana. The findings reveal that the implementation of TQM led to noticeable changes in learning design, instructional practices, and feedback mechanisms. Learning became more participatory, with students actively engaged in research-related tasks and practical activities. The involvement of multiple stakeholders also contributed to a more responsive learning environment, forming what can be understood as a learning ecosystem. At the same time, these improvements were accompanied by challenges, particularly increased workload and the need for adaptation among students and lecturers. These results suggest that improving learning quality requires not only structured frameworks but also continuous interaction and support across stakeholders. The study highlights the importance of viewing quality management as a process embedded in everyday learning practices rather than as a purely administrative system.

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INTRODUCTION

Improving the quality of learning in higher education remains an ongoing concern, particularly in courses that require strong analytical and methodological competencies (Hill & Smith, 2023; Park, 2025; Sravat & Pathranarakul, 2022). In many academic settings, learning is still dominated by conventional approaches that emphasize content delivery rather than active engagement, resulting in limited student involvement and uneven competency development. This issue becomes more critical in courses such as Research and Educational Evaluation (PEP), where students are expected not only to understand theoretical concepts but also to apply them in practical contexts (Johnston, 2025; McNaughton, 2021; Soodmand Afshar & Ranjbar, 2021). In response to these challenges, various quality-oriented

approaches have been introduced, including the application of Total Quality Management (TQM) in education (Jasti, Venkateswaran, & Kota, 2022; Yusuf, 2023). While TQM has long been associated with organizational improvement, its relevance to the learning process continues to attract attention, especially in contexts where institutions seek to enhance both academic performance and graduate readiness (Ali & Waheed, 2025; Supriyanto et al., 2025; Vihari et al., 2022).

Existing studies have explored the role of TQM in education from multiple perspectives, particularly in relation to continuous improvement, stakeholder satisfaction, and institutional performance. Research has shown that the integration of feedback mechanisms and iterative evaluation processes can contribute to more responsive learning environments (Shadiev et al., 2025; Wang et al., 2025). Similarly, studies on student-centered learning emphasize the importance of active participation, collaborative tasks, and real-world application in improving learning outcomes (Currenti & Letheren, 2025; Koehler & Meech, 2022). Another stream of research highlights the role of stakeholder involvement, suggesting that learning quality is strengthened when multiple actors contribute to the educational process, including faculty members, support staff, and external partners (Skovlund et al., 2024). Despite these advances, much of the existing literature tends to position TQM at the institutional or managerial level, with limited attention to how its principles are enacted within everyday classroom practices (Ikram et al., 2025; Jasti, Venkateswaran, & Kota, 2022; Jasti, Venkateswaran, Kota, et al., 2022).

This gap becomes particularly evident when considering how quality management frameworks intersect with the actual dynamics of teaching and learning. While previous studies provide valuable insights into policy implementation and organizational systems, they often overlook the micro-level processes through which learning quality is constructed. In particular, there is limited understanding of how TQM principles such as continuous improvement, feedback integration, and stakeholder involvement shape the learning experience at the course level. Furthermore, the challenges associated with implementing such approaches, including increased workload and student adaptation, are often underexplored. Addressing this gap is important to develop a more grounded understanding of how quality-oriented practices operate in real educational contexts.

This study aims to examine the implementation of TQM in the learning process of the Research and Educational Evaluation (PEP) course within a Health Promotion Study Program. Specifically, it seeks to explore how TQM principles influence learning design, classroom practices, stakeholder engagement, and student competencies. By focusing on a single course as a case study, this research provides a detailed account of how quality management is translated into practical teaching and learning activities. The study also aims to identify both the outcomes and challenges associated with this implementation, thereby offering a more balanced perspective on the effectiveness of TQM in education.

What this study seeks to emphasize is that the application of TQM in education cannot be understood solely as a formal system or set of procedures. Instead, it needs to be viewed as a process that unfolds through interactions among lecturers, students, and other stakeholders within the learning environment. In this context, the concept of a learning ecosystem becomes relevant, as it captures how different elements work together to shape learning quality. By examining these dynamics, the study contributes to a more integrated understanding of quality improvement in education, particularly at the level where teaching and learning actually take place. The following section outlines the methodological approach used to explore these processes in detail.

RESEARCH METHOD

This study employed a qualitative approach using a case study design to explore the implementation of Total Quality Management (TQM) in the learning process of the Research and Educational Evaluation (PEP) course within the Health Promotion Study Program (Jasti,

Venkateswaran, & Kota, 2022; Snyder et al., 2023; Yusuf, 2023). The study was conducted at a university (anonymized as University X) during the even semester of the 2025/2026 academic year. The site was selected purposively, considering that the program was undergoing quality improvement efforts as part of its accreditation process (Alkhateeb & Romanowski, 2021; Arja et al., 2024; Perveen et al., 2021). A total of 40 participants were involved, including two lecturers, 35 students, three representatives from the study program and quality assurance team, as well as technical staff and alumni who contributed additional perspectives. Participants were selected based on their direct involvement in the implementation of TQM within the learning process.

Data were collected through multiple techniques to ensure the credibility of the findings. In-depth interviews were conducted with lecturers, students, quality assurance representatives, technical staff, and alumni to explore their experiences and perceptions regarding TQM implementation. In addition, field findings were obtained through the researcher's direct engagement in several learning sessions to capture classroom interactions, learning strategies, and feedback practices. Document analysis was also carried out on relevant materials, including the Semester Learning Plan (RPS), course contracts, student evaluation results, and quality assurance reports. The use of multiple data sources allowed for triangulation and strengthened the credibility of the findings (Biddix, 2025; Morgan, 2024).

Data analysis was conducted using the interactive model of Miles, Huberman, and Saldana, which involves data condensation, data display, and conclusion drawing. The collected data from interviews, field findings, and documents were systematically coded and categorized using a thematic approach based on TQM-related dimensions. During the analysis process, data were continuously compared across sources to identify patterns, relationships, and variations. This iterative approach enabled the researcher to develop a comprehensive understanding of how TQM influences the transformation of the learning system, stakeholder engagement, and student outcomes.

RESULT AND DISCUSSION

Transformation of the Learning System

The transformation of the learning system based on Total Quality Management (TQM) refers to a comprehensive shift in how teaching and learning processes are planned, implemented, and evaluated, with a strong emphasis on quality improvement and responsiveness to stakeholder needs. Within the context of higher education, this transformation extends beyond revising formal instructional documents such as the Semester Learning Plan (RPS), encompassing changes in instructional strategies and the development of more adaptive and continuous feedback mechanisms. Conceptually, TQM promotes a cycle of ongoing improvement through the integration of planning, implementation, evaluation, and refinement. In practice, this approach is reflected in the alignment of course content with real-world demands, the adoption of active learning strategies, and the provision of timely and constructive feedback. Therefore, the transformation of the learning system grounded in TQM serves as a critical foundation for enhancing the quality of learning processes in a systematic and responsive manner.

The interview findings indicate that the transformation of the learning system extends beyond technical adjustments and reflects a deeper shift in how lecturers perceive and manage the teaching process. Informants highlighted a transition from a fixed and routine-based approach to a more flexible and needs-oriented system. This suggests that the implementation of TQM encourages continuous reflection and adaptation in instructional practices. As expressed by one of the lecturers: "In the past, I developed the RPS once and used it for several years. Now, I revise it at the beginning of every semester based on feedback from previous students and discussions with alumni. Recently, input from alumni working in public health institutions led me to include more advanced research design topics." This perspective is echoed by a student: "Now we are not only learning theories, but also

conducting fieldwork, designing instruments, and analyzing data. The learning process feels more realistic and engaging."

Based on the interviews, the transformation of the learning system driven by TQM appears to influence two key dimensions: planning flexibility and student learning experience. The continuous revision of the RPS indicates that planning is no longer treated as a static administrative task but as a dynamic process that evolves in response to stakeholder input. At the same time, increased student involvement in practical and field-based activities suggests a shift toward more applied and experiential learning approaches. These changes highlight that TQM implementation impacts not only curriculum structure but also the nature of classroom interaction and engagement. Furthermore, the incorporation of alumni feedback into course design demonstrates a stronger linkage between academic content and professional demands. Overall, the transformation reflects a more responsive, context-sensitive, and quality-oriented learning system that continuously adapts to emerging needs.

Field findings reveal tangible changes in both instructional documents and classroom practices following the implementation of TQM. Analysis of the RPS documents shows clear adjustments in course content to better align with professional and field-based requirements, particularly through the increased emphasis on program evaluation and research design. In classroom practice, lecturers no longer rely predominantly on lecture-based delivery but incorporate a variety of active learning strategies, including project-based learning, group discussions, and field activities. Additionally, a structured and timely feedback system has been observed, where student assignments are returned promptly with detailed and constructive comments. This practice reflects a deliberate effort to enhance learning quality through continuous improvement cycles. The field findings therefore confirm that the transformation of the learning system occurs across multiple levels, including planning, implementation, and evaluation, demonstrating a holistic shift toward quality-oriented education.

Based on these findings, the transformation of learning planning is presented in **Table 1**.

Table 1. Transformation of Learning Planning (RPS)

Learning Component	Pre-TQM	Post-TQM	Change
Philosophy of Science	6	3	Decreased
Quantitative Research Design	8	10	Increased
Qualitative Research Design	4	6	Increased
Health Program Evaluation	3	8	Significantly increased
Statistics	10	8	Reduced
Scientific Writing & Ethics	2	4	Increased

The adjustments in learning planning, as outlined above, are closely followed by shifts in instructional practices. These changes are not limited to document revisions but are also reflected in how learning activities are conducted in the classroom. In line with this transformation, the distribution of learning methods demonstrates a clear movement toward more student-centered approaches, as presented in **Table 2**.

Table 2. Distribution of Learning Methods

Learning Method	Pre-TQM	Post-TQM
Lecture-based	75%	25%
Class Discussion	15%	20%
Project-Based Learning	0%	35%
Practical Sessions	5%	10%
Peer Review	5%	10%

The shift toward more interactive and participatory learning strategies also brings

implications for how feedback is delivered within the learning process. As students become more actively engaged, the need for timely and meaningful feedback becomes increasingly critical. This development is evident in the transformation of the feedback system, which is summarized in **Table 3**.

Table 3. Changes in Feedback System

Indicator	Pre-TQM	Post-TQM	Change
Assignment return time	8.2 days	1.1 days	Faster
Written feedback	12%	100%	Increased
Student understanding	35%	88%	Increased
Revision based on feedback	18%	92%	Increased

The findings indicate that the transformation of the learning system through the implementation of TQM has led to substantial changes across the stages of planning, implementation, and evaluation. Rather than relying on a fixed and lecturer-centered approach, the learning process has evolved into a more flexible and participatory system that actively involves students. This shift is reflected in the continuous revision of learning plans, the integration of active learning strategies, and the provision of more structured and timely feedback. In addition, the inclusion of input from both students and alumni suggests that the learning system is becoming increasingly responsive to real-world demands. Taken together, these changes point toward a learning environment that is not only more adaptive but also more closely aligned with professional practice. Ultimately, this transformation contributes to improving both the quality of the learning process and its relevance to the needs of future graduates.

Strengthening the Learning Ecosystem

The transformation of the learning system does not occur solely within the boundaries of the classroom. Instead, it extends into a broader ecosystem where multiple actors contribute to shaping the quality of learning. The findings suggest that the implementation of TQM has expanded the roles of various stakeholders, turning the learning process into a collaborative and interconnected system rather than an isolated academic activity.

Multi-stakeholder engagement within a TQM-based learning system refers to the active involvement of various actors beyond lecturers and students in shaping, supporting, and evaluating the learning process. This includes technical staff, alumni, and external institutions that contribute practical insights and contextual relevance to academic activities. In a broader sense, this engagement reflects the principle of total involvement, where quality is not seen as the responsibility of a single actor but as a shared commitment across the system. In practice, such engagement allows learning to become more responsive, grounded, and aligned with real-world demands. It also facilitates continuous improvement by integrating feedback from multiple perspectives. As a result, the learning ecosystem evolves into a dynamic network where knowledge is co-constructed, rather than transmitted in a one-directional manner.

The involvement of multiple stakeholders appears to reshape how responsibilities within the learning process are distributed. Informants described a shift from a lecturer-centered system toward a more collaborative arrangement where different actors contribute based on their expertise and roles. This indicates that learning is no longer confined to formal teaching activities but is supported by a wider institutional and professional network. As highlighted by a member of the technical staff: "I used to think that curriculum matters were entirely the lecturers' responsibility. But now, I am asked to provide input based on the difficulties students face, especially when using statistical software. Interestingly, those inputs are quickly reflected in the next learning session." Similarly, an alumnus involved in external

evaluation stated: "I was invited not just to give a guest lecture, but also to review student proposals. My feedback was taken seriously, especially regarding the relevance of research indicators in public health practice."

The interview findings indicate that the expansion of stakeholder involvement contributes to a redistribution of roles within the learning system. Rather than concentrating authority solely on lecturers, responsibilities are shared across different actors who bring complementary perspectives. The inclusion of technical staff highlights the importance of operational support in addressing students' practical challenges, while the involvement of alumni introduces real-world relevance into academic tasks. This combination creates a feedback-rich environment where learning is continuously informed by both internal and external inputs. Furthermore, the responsiveness of lecturers to stakeholder suggestions reflects a system that is open to adaptation and refinement. Such dynamics illustrate that the learning ecosystem operates as an interconnected structure, where each component plays a role in maintaining and improving quality. This reinforces the idea that effective learning systems are not isolated but embedded within a broader network of collaboration.

Technical staff were observed assisting students outside formal class hours, particularly in resolving software-related issues. In addition, guest lectures delivered by alumni provided practical insights that complemented theoretical discussions in class. Regular meetings involving quality assurance teams also served as platforms for evaluating learning outcomes and identifying areas for improvement. These practices demonstrate that stakeholder involvement is not limited to occasional contributions but forms part of a structured and ongoing process. The presence of multiple actors in different stages of learning—from planning to evaluation—indicates a system that is both participatory and adaptive. This reinforces the idea that learning quality is sustained through collective effort rather than individual responsibility.

To further illustrate how stakeholder involvement operates within the learning system, the interaction among key actors is visually represented in **Figure 1**.

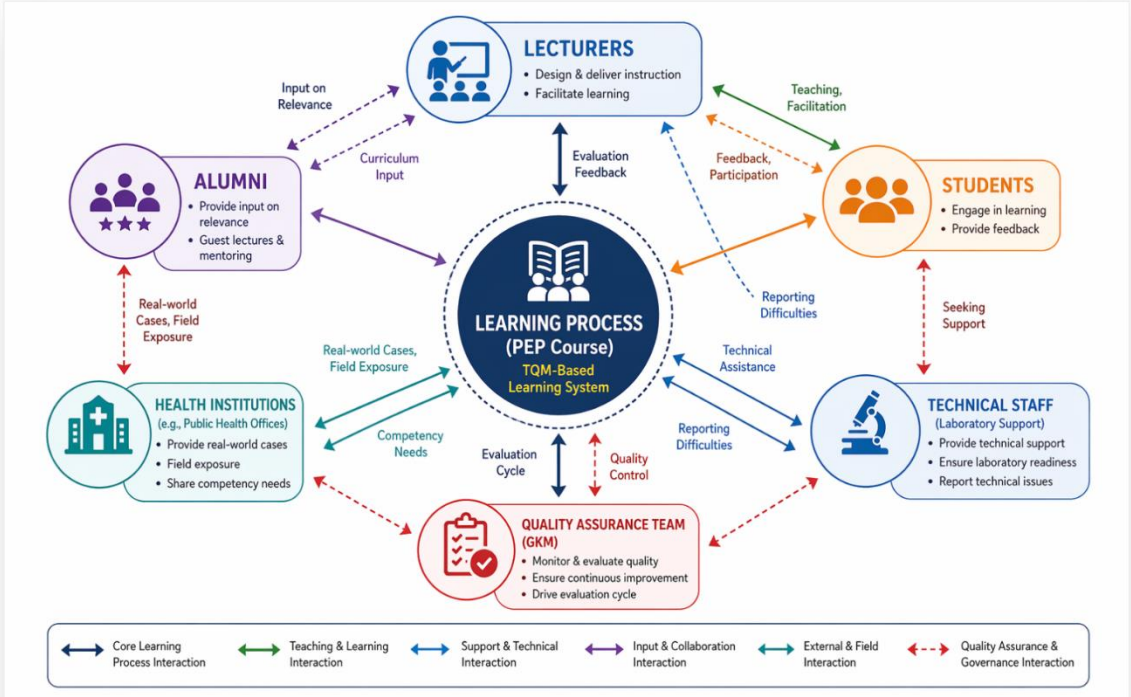

Figure 1. Multi-Stakeholder Learning Ecosystem in TQM-Based Instruction

Figure 1. illustrates the learning process as the central node within a dynamic

ecosystem supported by multiple interconnected stakeholders. Lecturers and students form the core instructional relationship through reciprocal interactions in teaching, participation, and feedback, while technical staff provide operational support in addressing practical and technical challenges encountered during learning activities. In addition, alumni and health institutions contribute external perspectives by offering real-world insights, field exposure, and input on competency needs, thereby strengthening the relevance of the learning process. The quality assurance team plays a critical role in maintaining continuous evaluation and ensuring alignment with quality standards through systematic monitoring and feedback mechanisms. The presence of bidirectional interactions among all stakeholders reflects an ongoing process of collaboration and communication, indicating that the effectiveness of the learning system is collectively constructed rather than dependent on a single actor.

Outcomes and Challenges of TQM Implementation

The implementation of Total Quality Management (TQM) within the learning process generates outcomes that extend beyond procedural improvements, influencing both student competencies and the broader learning experience. At the same time, these improvements are accompanied by a set of challenges that reflect the complexity of sustaining quality-oriented practices in an academic setting. This theme captures the dual nature of TQM implementation, where measurable progress in learning outcomes coexists with structural and operational constraints. From a practical perspective, the outcomes are evident in students' enhanced abilities in research design, data analysis, and academic writing. However, the transition toward a more demanding and participatory learning system also introduces new pressures for both lecturers and students. Therefore, understanding this theme requires examining not only the positive impact but also the tensions that emerge during implementation, as both elements are integral to the overall effectiveness of the system.

The findings indicate that the outcomes of TQM implementation are not solely reflected in improved performance metrics but also in the transformation of students' learning orientation. Increased confidence in handling complex tasks such as statistical interpretation and research design suggests a shift toward deeper engagement with the subject matter. This shift is closely linked to the active learning strategies embedded within the system, which require students to move beyond passive knowledge acquisition. However, the emergence of perceived difficulty, particularly in the early stages, highlights the adjustment required when transitioning from conventional to more intensive learning approaches. These challenges are not necessarily indicators of failure but rather part of the learning curve associated with higher expectations. Additionally, the increased workload reported by lecturers' points to the need for balancing quality improvement initiatives with institutional support. Overall, the findings reveal that the impact of TQM is both transformative and demanding, requiring adaptation from all actors involved.

To provide a more structured overview of the challenges encountered during the implementation of TQM, along with the corresponding mitigation strategies, these findings are summarized in Table 4.

Table 4. Changes in Student Competencies Following TQM-Based Learning Implementation

Measured Competencies	Pre-TQM (n = 35)	Post-TQM (n = 35)	Statistical Test*
Research proposal rubric score (max = 100)	68.4 (SD = 9.2)	85.7 (SD = 6.5)	$p < 0.001$
Data analysis skills using statistical software (scale 1–5)	2.3	4.2	$p < 0.001$
Ability to interpret statistical output	2.1	4.0	$p < 0.001$
Academic writing skills (citation & references) (scale 1–5)	3.0	4.7	$p = 0.002$

*Paired t-test, $\alpha = 0.05$

The data demonstrate a substantial increase in students' competencies, particularly in research proposal development and data analysis skills. The most notable improvement is observed in the research proposal rubric score, which increased significantly following the implementation of TQM-based learning. Similarly, students' ability to analyze and interpret statistical data shows a marked enhancement, indicating stronger engagement with analytical tasks. Improvements in academic writing skills further suggest that students are better equipped to meet scholarly standards. Overall, these findings provide empirical support for the effectiveness of TQM in enhancing both technical and academic competencies.

Beyond these improvements, several challenges were identified during the implementation process, reflecting the increased demands of a quality-oriented learning system. To synthesize these challenges along with the proposed mitigation strategies, the findings are summarized in **Table 5**.

Table 5. Challenges and Mitigation Strategies in TQM Implementation

Challenges	Frequency	Proposed Mitigation
Increased lecturer workload	High	Administrative support or LMS automation
Initial student resistance	Moderate	Intensive scaffolding in early stages
Inconsistency across parallel classes	Moderate	Regular grading calibration

The implementation of TQM has led to meaningful improvements in student competencies, particularly in analytical, methodological, and academic skills. These improvements are reflected not only in measurable outcomes but also in increased confidence and engagement among students. At the same time, the transition to a more intensive and quality-oriented learning system introduces several challenges, including increased workload, initial resistance, and inconsistencies in implementation. These challenges highlight the importance of institutional support and coordination in sustaining quality improvement efforts. Overall, the results indicate that the impact of TQM is both transformative and demanding, requiring continuous adaptation from all stakeholders involved. The coexistence of positive outcomes and emerging challenges suggests that quality improvement in education is an ongoing process that must be managed carefully to ensure long-term effectiveness.

Discussion

What stands out from this study is not simply the presence of change, but how that change unfolded in practice. The introduction of TQM did not operate as a formal framework imposed from above. Instead, it gradually altered how lecturers approached their teaching and how students engaged with the learning process. Lecturers began to revisit their lesson plans more frequently, often drawing on feedback from previous cohorts or input from external stakeholders (Ferrè, 2023). This made the learning process feel less fixed and more responsive to actual needs. From the students' side, the shift was equally noticeable. Learning was no longer limited to listening and note-taking, but required active involvement in tasks that resembled real research activities. Several students described this as both challenging and rewarding. They were pushed to work with data, design instruments, and interpret findings in ways they had not experienced before (Xhomara & Dasho, 2023). At the same time, this transition was not entirely smooth. The increased demands created moments of uncertainty, particularly at the beginning, when students were still adjusting to a more intensive learning environment. Rather than seeing these challenges as obstacles, they appear to be part of the process through which learning becomes more meaningful. The findings suggest that improvement in learning quality is closely tied to how participants navigate this transition, rather than to the implementation of a model alone.

What is observed in this study is not entirely new, but the way it unfolds in practice

adds an important layer to existing discussions. Earlier work has shown that continuous feedback and data-informed approaches can support learning improvement, as highlighted by (Yan, 2024). A similar pattern appears here, particularly in how feedback is used not just to evaluate, but to guide students through the learning process (Hagemann & Decius, 2024; Yildiz Durak, 2024). However, what seems less visible in previous studies is how these principles are translated into everyday classroom interactions. In this context, TQM does not remain at the level of institutional policy. It becomes visible in small but meaningful adjustments, such as how lecturers respond to student work, how tasks are redesigned, and how external input is incorporated into learning activities (Cassia et al., 2021). This is where the findings begin to differ from studies that frame TQM primarily as a managerial tool. The present study suggests that its influence can extend much closer to the learning process itself. At the same time, the challenges reported by participants, particularly in the early stages, reflect a pattern that has also been noted in research on educational change. Adjusting to new expectations often takes time, and resistance is not uncommon. In this sense, the findings do not contradict previous work, but rather reinforce the idea that improvement is rarely a smooth process.

One aspect that becomes particularly evident from this study is how TQM is not only positioned as a managerial framework, but gradually takes shape within the learning process itself. In many discussions, TQM is often associated with institutional systems, quality assurance mechanisms, or policy-level interventions. What this study shows, however, is a more grounded picture of how those principles are translated into everyday teaching and learning practices. The findings point to a shift in how quality is understood. It is no longer confined to formal evaluation systems, but emerges through ongoing interactions between lecturers, students, and other stakeholders. The involvement of technical staff and alumni, for instance, illustrates that learning quality is shaped by contributions that extend beyond the classroom. This makes it difficult to view learning as an isolated activity, since it is clearly influenced by a wider network of relationships. In this sense, the idea of a learning ecosystem becomes useful to describe what is happening. Rather than focusing on individual components, this perspective highlights how different elements work together to sustain quality. The study therefore contributes by offering a more integrated way of understanding TQM in education, particularly at the level where teaching and learning actually take place.

What becomes increasingly clear from this study is that improving learning quality is not simply a matter of applying a particular framework, but depends on how that framework is interpreted and enacted in practice. The implementation of TQM, in this case, does not operate as a fixed model with predictable outcomes. Instead, it unfolds through a series of adjustments made by lecturers, students, and other stakeholders as they respond to new expectations and challenges. The improvements observed in student competencies suggest that a more engaged and structured learning environment can support deeper understanding. However, the challenges that accompany these changes also point to the importance of support systems, particularly during the transition phase. Without adequate support, the demands of a more intensive learning process may become difficult to sustain. These findings highlight the need to view quality improvement as an ongoing process rather than a final outcome. It involves balancing structure with flexibility, as well as maintaining space for adaptation as conditions evolve. Future studies may benefit from examining how similar approaches are implemented in different institutional contexts, especially to better understand how local conditions shape both the possibilities and limitations of TQM in education.

CONCLUSION

Efforts to improve learning quality in higher education often rely on structured frameworks, yet this study shows that their effectiveness depends largely on how they are enacted in practice. The implementation of Total Quality Management in the PEP course

did not simply result in procedural adjustments, but led to a broader transformation in how learning was designed, experienced, and evaluated. Changes were evident in the way lecturers approached planning, how students engaged with learning tasks, and how feedback was integrated into the process. At the same time, the findings highlight that these improvements were accompanied by increased demands, indicating that quality enhancement involves a process of adjustment rather than immediate outcomes. These results suggest that improving learning quality requires more than adopting formal systems. It calls for a learning environment that supports continuous interaction among stakeholders, including lecturers, students, and external contributors. The idea of a learning ecosystem becomes particularly relevant in this context, as it reflects how quality is shaped through ongoing relationships rather than isolated efforts. For practice, this implies the need for institutions to provide not only structured frameworks but also sufficient support for those involved in the learning process. Future work may explore how similar approaches are adapted in different institutional contexts, especially to understand how variations in resources, culture, and readiness influence both the outcomes and the challenges of implementing TQM in education.

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