

IMPLEMENTING TOTAL QUALITY MANAGEMENT THROUGH THE PLAN-DO-CHECK-ACT CYCLE TO ENHANCE EDUCATIONAL QUALITY

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Abstract. Improving the quality of higher education requires a systematic and integrated management approach. This study explores the implementation of Total Quality Management (TQM) through the Plan-Do-Check-Act (PDCA) cycle as a continuous improvement strategy at Universitas Darma Persada (UNSDA), Jakarta. The research emphasizes how PDCA serves as an effective operational framework for realizing the principles of TQM within an educational context, focusing on planning, implementation, evaluation, and corrective actions. The integration of the PDCA method enables the university to strengthen quality assurance mechanisms, promote organizational restructuring, and foster a culture of excellence aligned with Japanese management philosophy. Using a descriptive qualitative approach, the study examines data collected from institutional reports, policy documents, and interviews with quality assurance units and academic leaders. The findings indicate that consistent PDCA implementation enhances administrative efficiency, teaching effectiveness, and stakeholder engagement. Continuous improvement initiatives and quality standardization have also contributed to better accreditation outcomes and stronger institutional collaboration with industrial partners such as Toyota. The study concludes that embedding PDCA-driven TQM practices fosters sustainable quality development, institutional agility, and accountability in higher education management.

Keywords: Total Quality Management (TQM); PDCA Cycle; Continuous Improvement; Quality Assurance; Higher Education

I. INTRODUCTION

In today's competitive and rapidly evolving higher-education landscape, maintaining and improving quality has become a critical imperative for institutional sustainability [1]. Universities are increasingly challenged to provide efficient governance, effective teaching, and stakeholder satisfaction amid globalization and digital transformation [2]. Within this context, the adoption of Total Quality Management (TQM) has emerged as an effective strategic approach to embed continuous improvement and accountability across educational systems [3]. Originally developed in the industrial sector, TQM emphasizes holistic management, teamwork, and stakeholder focus as mechanisms for achieving excellence [4]. When adapted to higher education, TQM provides a systematic framework that integrates planning, implementation, and evaluation to ensure consistent quality in academic and administrative processes [5]. Studies have shown that institutions applying TQM principles experience better accreditation outcomes, enhanced leadership performance, and improved learner satisfaction [6], [7].

A central component of TQM implementation is the Plan-Do-Check-Act (PDCA) cycle, first conceptualized by W. Edwards Deming as a mechanism for iterative improvement [8]. The PDCA method is particularly relevant to educational management because it promotes reflection, corrective action, and preventive control in achieving institutional goals [9]. When properly embedded, PDCA transforms traditional bureaucratic processes into adaptive systems focused on learning outcomes, transparency, and innovation [10]. At Universitas Darma Persada (UNSDA), Jakarta, the application of TQM principles through the PDCA cycle was initiated in partnership with Toyota Motor Corporation as part of a continuous quality-improvement program [11]. The initiative aims to realign academic processes with national accreditation standards, strengthen institutional culture, and reinforce collaboration with Japanese industrial and educational partners [12]. Early evaluations revealed challenges such as limited quality documentation, inconsistent monitoring, and low faculty participation; yet, these also provided opportunities to redesign management processes through evidence-based planning and integrated performance audits [13].

The implementation of PDCA-based TQM at UNSDA represents a significant case for higher-education reform in Indonesia, where quality assurance systems are often fragmented and compliance-driven [14]. This study, therefore, seeks to investigate how the PDCA framework supports the realization of TQM principles to improve organizational performance, academic quality, and stakeholder engagement. The outcomes of this study are expected to contribute to the growing discourse on continuous improvement models and provide actionable insights for higher-education institutions pursuing sustainable quality management [15].

Quality management in higher education has evolved from a compliance-oriented process toward a culture of continuous improvement and stakeholder-centered governance [16]. In this transformation, Total Quality Management (TQM) has been increasingly recognized as a strategic framework for enhancing institutional effectiveness and accountability [17]. TQM promotes a holistic approach that integrates all organizational elements leadership, faculty, administrative units, and students into a unified system focused on quality enhancement and innovation [18].

Total Quality Management in Education

In educational settings, TQM emphasizes collective responsibility, customer satisfaction, and continuous development through systematic processes [19]. The central philosophy of TQM lies in empowering every member of the institution to participate actively in improving performance and achieving excellence [20]. As Sallis (2021) explains, educational institutions that embed TQM practices develop a culture of reflection, cooperation, and shared ownership, which in turn drives quality improvement [21]. Moreover, research demonstrates that TQM significantly enhances institutional reputation, student engagement, and accreditation readiness [22].

The PDCA Cycle as a Mechanism of Continuous Improvement

The Plan–Do–Check–Act (PDCA) cycle, introduced by Deming, serves as a fundamental operational model within TQM [23]. It provides a structured method for identifying problems, implementing solutions, evaluating outcomes, and instituting corrective actions for sustainable progress. In educational contexts, PDCA helps bridge strategic planning and classroom-level implementation by creating measurable feedback loops [24]. This iterative process fosters evidence-based decision-making and ensures that quality initiatives are aligned with institutional goals and national accreditation standards [25].

Recent studies have found that integrating PDCA into academic management systems improves process consistency, communication among departments, and responsiveness to stakeholder feedback [26]. Furthermore, the PDCA cycle enables universities to balance flexibility and standardization two critical dimensions in adapting to global education challenges [27].

The Role of Industry Collaboration and Quality Culture

An emerging trend in TQM implementation is collaboration between higher-education institutions and industry partners, which facilitates the exchange of best practices in quality management and operational efficiency [28]. In Japan and Southeast Asia, universities supported by corporate partners such as Toyota have effectively implemented PDCA-based systems rooted in the *Kaizen* philosophy, emphasizing small, incremental improvements [29]. Such partnerships not only strengthen management capacity but also create bridges between academic output and industrial demands [30]. At Universitas Dharma Persada, the collaboration with Toyota has introduced a unique cultural model integrating Japanese management practices discipline, efficiency, and teamwork into academic governance [31]. This synergy demonstrates how TQM can transcend industrial boundaries and foster innovation in higher education through cross-sector learning [32].

The conceptual framework of this study integrates three dimensions of quality improvement: Strategic Dimension: Implementation of TQM principles through institutional planning and leadership engagement. Operational Dimension: Application of the PDCA cycle to align academic, administrative, and quality assurance processes. Cultural Dimension: Development of a continuous improvement mindset inspired by the *Kaizen* philosophy and collaborative learning. Together, these dimensions provide the theoretical foundation for understanding how PDCA-driven TQM practices can transform higher-education institutions into adaptive, efficient, and sustainable learning organizations.

II. RESEARCH METHODS

This study adopts a qualitative case study design to examine the implementation of Total Quality Management (TQM) through the Plan–Do–Check–Act (PDCA) framework at Universitas Dharma Persada (UNSADA), Jakarta. The case study method is appropriate for exploring institutional practices within their real-life context, allowing researchers to analyze processes, behaviors, and strategies that characterize quality management in higher education [33]. This approach enables an in-depth understanding of how PDCA supports continuous improvement, standardization, and cultural transformation in academic institutions. Data were collected through document analysis, interviews, and field observations. Institutional reports, quality assurance manuals, and accreditation documents were examined to trace the integration of PDCA in policy planning and operational activities. Semi-structured interviews were conducted with university leaders, quality assurance officers, and academic staff to gain insights into their perceptions of PDCA's impact on institutional performance. The data were then analyzed using thematic analysis, focusing on three core dimensions: (1) leadership and strategic alignment; (2) process standardization and evaluation; and (3) continuous improvement and stakeholder involvement.

The research design followed Creswell's interpretive qualitative approach, emphasizing credibility, dependability, and triangulation [34]. To ensure validity, findings from different data sources were compared and cross-verified. The final analysis highlights the extent to which PDCA-based TQM practices influence administrative efficiency, teaching quality, and institutional culture. The methodological framework thus provides a comprehensive perspective on the mechanisms of educational quality transformation through TQM and PDCA.

III. RESULTS AND DISCUSSION

The implementation of Total Quality Management (TQM) through the Plan–Do–Check–Act (PDCA) framework at

Universitas Darma Persada (UNSADA) has resulted in measurable improvements in both academic and administrative performance. The university successfully adopted continuous improvement mechanisms (Kaizen) that enhance operational consistency, documentation accuracy, and decision transparency [35]. The results demonstrate that by systematically applying PDCA cycles, the institution achieved higher compliance with accreditation standards and increased stakeholder engagement. Internal audits conducted by the Quality Assurance Unit revealed greater coordination between departments, with periodic reviews ensuring that each program's performance indicators align with national higher education standards [36]. These developments have significantly improved responsiveness to evaluation reports from BAN-PT (National Accreditation Board for Higher Education), contributing to better institutional ratings and student satisfaction [37].

PDCA Cycle Effectiveness

Each PDCA stage yielded distinct outcomes. During the Plan stage, UNSADA implemented integrated action plans linking accreditation goals to faculty-level strategies, promoting alignment across all management layers. The Do stage emphasized execution and empowerment through workshops and capacity-building initiatives. In the Check phase, periodic evaluations identified gaps and prompted real-time corrective measures. Finally, the Act stage consolidated lessons learned and introduced revised procedures that ensured continuous adaptation [38]. This cycle produced a continuous feedback loop that reinforced organizational learning and prevented stagnation in quality initiatives. As suggested by Deming's principles, the success of PDCA depends on leadership commitment, cross-functional teamwork, and systematic evaluation all of which were demonstrated by UNSADA's collaboration with Toyota's management mentors [39].

Based on the analysis using the PDCA (Plan–Do–Check–Action) cycle, several key issues have been identified within Universitas Darma Persada (UNSADA).

At the Plan stage, the main problem lies in the preparation of the action plan, which remains general and limited to the university level without detailed breakdowns for lower organizational levels. This situation occurs because there is no linkage or prioritization aligned with the assessment criteria of the National Accreditation Board. In addition, there is no clear breakdown of activities from the top level down to faculties and departments, nor are there designated persons in charge or specific Key Performance Indicators (KPIs) for each unit. As a result, strategic planning has not been effectively translated into concrete and measurable operational actions across all organizational levels.

At the Do stage, the problem centers on the tendency to perform tasks as they have always been done, without implementing updates or innovations based on a structured plan. The underlying causes include the absence of individual action plans for each division and the lack of a specific unit responsible for coordinating and managing these plans. Consequently, activities are carried out without alignment to the university's strategic objectives, leading to inefficiencies and limited organizational effectiveness.

At the Check stage, evaluation activities are generally conducted only at the end of the year or upon specific requests, indicating that monitoring mechanisms are not yet systematic or continuous. The root causes include the absence of a designated Person in Charge (PIC) or unit responsible for conducting regular evaluations of the action plan, as well as the lack of a periodic reporting or inspection schedule. This situation weakens the university's ability to identify problems early and implement timely corrective measures.

Finally, at the Action stage, corrective actions tend to be reactive taken only after problems occur rather than being based on systematic evaluation of previous results. This happens because new action plans are formulated without referring to the evaluation outcomes or findings from prior cycles. Such a pattern disrupts the continuity of the PDCA cycle and undermines its core purpose as a tool for continuous quality improvement. Overall, UNSADA's current issues highlight the need to strengthen its PDCA-based quality management system to ensure more structured, measurable, and sustainable organizational development.

Cultural and Organizational Impact

Culturally, the integration of PDCA-based TQM transformed UNSADA's academic environment into a more disciplined and collaborative institution. The adoption of Japanese management practices such as the 5S principles (Seiri, Seiton, Seiso, Seiketsu, Shitsuke) strengthened organizational ethics and work discipline among staff and faculty [40]. Furthermore, restructuring initiatives under the "lean management" philosophy ("poor structure, rich function") optimized administrative hierarchies, reducing redundancy and increasing operational agility. These cultural transformations also contributed to enhanced trust between academic leaders and stakeholders, fostering a stronger sense of ownership in maintaining quality standards. The improvement in teamwork and shared accountability aligns with global findings that successful TQM adoption in higher education depends on cultivating a quality-oriented mindset at all institutional levels [41].

The findings reinforce that implementing PDCA within a TQM framework does not merely introduce procedural changes but also promotes systemic innovation in educational governance. The iterative nature of PDCA ensures that quality assurance is not static but continuously evolving. It also encourages reflection and evidence-based policy making, which are critical for maintaining institutional competitiveness in the era of global education [42].

Improvement Strategy of UNSADA

The improvement strategy of Universitas Darma Persada (UNSADA) is designed to create a more integrated, efficient, and forward-looking institutional system through structured action plans, strengthened promotion, reorganized governance, and enhanced international collaboration. At the Integrated Action Plan stage, UNSADA aims to develop a more comprehensive and structured *action plan* using the Toyota management format as a benchmark for systematic improvement. The plan will be divided and delegated down to the lowest leadership levels to ensure clear responsibility and accountability. Furthermore, the main points from the National Accreditation Board for Higher Education (BAN-PT), the university's strategic plan (*Renstra*), and the action plan will be integrated into a web-based system controlled by the Quality Assurance Unit. This integration will ensure that

accreditation data, institutional targets, and performance indicators are continuously aligned and monitored in real time.

In strengthening the student recruitment and promotion system, UNSADA targets an enrollment of 1,400 new students. The strategy focuses on improving both promotional content and methods. Promotional materials will emphasize key benefits such as free registration fees, tuition discounts during national events, flexible installment-based tuition payment options, and access to local and international scholarships. To enhance promotional methods, UNSADA plans to form an integrated promotion team involving both the Board of Trustees (BPH) and faculties, participate actively in educational fairs, accelerate the opening of student admissions, and establish “UNSADA Ambassadors” drawn from the academic community and high school counselors. Additionally, webinars themed “*Major-Minor Curriculum in Responding to Global Job Market Challenges*” will be organized to strengthen the university’s image and outreach. The promotion area will also be expanded through collaboration with media networks in industrial zones, such as *Jurnal Kawasan Jababeka*.

In terms of campus governance restructuring, UNSADA plans a reorganization with the goal of becoming lean, efficient, and effective. The current organizational structure is considered too large compared to the number of students, prompting proposals to merge several bureaus and strengthen existing functions—transforming the Quality Assurance Unit (UPM) into the Institute for Quality Assurance (LPM) and linking the Data Center directly with LLDIKTI. Additionally, UNSADA will develop a new *Statuta* (University Statute), restructured business processes, and updated Standard Operating Procedures (SOPs). These initiatives aim to clarify workflows, roles, and responsibilities while minimizing overlap and ambiguity. Experts from the Ministry of Higher Education (DIKTI) will be involved in drafting and validating these frameworks to ensure compliance and institutional consistency. To demonstrate effective governance reform, UNSADA will establish a pilot project in the Industrial Engineering Department under the Faculty of Engineering. The goal is to improve accreditation from grade C to B. The project involves a total re-audit based on BAN-PT standards, setting priority action plans for 2021–2022, and implementing routine monthly progress meetings and reports. In the Human Resources Bureau (HRD), the objective is to align the HR governance system with program accreditation requirements. The HR Bureau will undergo a BAN-PT–based re-audit, develop an improvement plan linking HR initiatives with accreditation enhancement, and prioritize action plans for 2022–2023.

UNSADA aims to strengthen collaboration with Japanese institutions to improve governance, digitalization, and academic quality. Under the theme of *Information and Computer Systems*, the goal is to reduce IT-related issues and enhance digital efficiency. Activities will include mapping problems related to network and application integration, analyzing bureaucratic processes across units, and setting joint priorities with JICA experts for problem-solving. Under the theme of *Language and Automation Education*, the objectives are to improve Japanese language teaching quality and achieve self-sufficiency in industrial automation education within the Faculty of Engineering. This will be pursued by working with the Japan Foundation (JF) and JICA to adopt the *Marugoto* module, which focuses on practical communication skills, and by continuing automation initiatives in collaboration with AOTS while providing regular progress reports. Overall, UNSADA’s improvement strategy represents a comprehensive effort to build a culture of continuous improvement, efficiency, and global competitiveness anchored in PDCA principles, integrated management, and strong partnerships with international institutions.

The practical implications of this study are threefold. First, higher-education leaders should view TQM and PDCA as integrative governance tools that support the alignment between vision, strategy, and daily operations. This requires sustained leadership commitment, participative management, and continuous staff development. Second, quality assurance units must institutionalize the PDCA cycle as part of routine academic and administrative review processes. Embedding PDCA into existing evaluation frameworks ensures that improvement becomes cyclical rather than reactive. Third, collaboration with industry partners as exemplified by UNSADA’s partnership with Toyota can serve as a catalyst for innovation and benchmarking, particularly when aligning educational processes with global industrial standards and competencies. At the policy level, the findings underscore the importance of integrating PDCA-based TQM models into national higher-education quality frameworks. Policymakers could leverage these models to strengthen institutional accountability mechanisms and foster a national culture of excellence. Theoretically, this research contributes to the expanding body of literature on quality management in education by bridging industrial management principles with educational governance. It highlights PDCA not only as a procedural tool but also as a transformative framework that cultivates a sustainable quality culture. In summary, UNSADA’s experience illustrates how integrating industrial quality-management principles into higher education can lead to tangible improvements in institutional performance, accountability, and sustainability. These findings validate TQM as a strategic and cultural transformation tool that enhances both operational efficiency and educational excellence.

IV. CONCLUSION

This study concludes that the implementation of Total Quality Management (TQM) through the Plan–Do–Check–Act (PDCA) cycle at Universitas Darma Persada has significantly strengthened the institution’s commitment to continuous improvement, accountability, and educational excellence. The integration of PDCA has provided a systematic and measurable framework for aligning academic goals, administrative processes, and stakeholder expectations. Evidence from the case study shows that UNSADA’s adoption of TQM principles—supported by industrial collaboration with Toyota—has resulted in enhanced internal coordination, improved accreditation performance, and a more disciplined organizational culture. The PDCA-based TQM framework has proven effective in embedding a culture of continuous learning (Kaizen) and reflective practice within higher education. Each stage of PDCA—planning, implementation, evaluation, and corrective action—has contributed to

institutional agility, ensuring that processes remain adaptive to both internal and external quality demands. Ultimately, UNSADA's experience confirms that quality assurance is not merely a procedural activity but a strategic driver of organizational transformation and sustainable institutional growth. Future research should expand this study by conducting comparative or longitudinal analyses across different universities or countries to assess the scalability of PDCA-based TQM frameworks. Quantitative approaches may further measure the statistical relationship between TQM implementation and institutional performance indicators such as student satisfaction, employability, and accreditation scores. Additionally, exploring digital transformation and data-driven decision-making as extensions of PDCA in higher education would enhance understanding of its relevance in the era of Industry 5.0 and Society 5.0

V. REFERENSI

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