ANKARA YILDIRIM BEYAZIT UNIVERSITY

AYBU

QULITY COORDINATION OFFICE

PDCA Approach Guide

PLAN-DO-CHECK-ACT

PDCA APPROACH GUIDE

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DEVELOPMENT PROCESS OF THE PDCA CYCLE

1. INTRODUCTION

The PDCA Approach Guide has been prepared to ensure the establishment of a quality assurance culture and the sustainability of continuous improvement. The PDCA (Plan–Do–Check–Act) cycle is a fundamental management approach that enables the systematic planning, implementation, monitoring, and improvement of processes.

In higher education, education and training, research and development, social contribution, and governance processes, as well as academic and administrative processes, are carried out based on the PDCA approach. The Turkish Higher Education Quality Council (YÖKAK) also adopts this cyclical structure within its quality assurance system and encourages institutions to structure their processes accordingly.

Higher education has undergone rapid development in recent decades. Universities increasingly emphasize improving teaching and learning methods to better prepare graduates for sectoral demands. Digital transformation, internationalization, and lifelong learning are among the key factors shaping this change.

This guide comprehensively addresses the fundamental principles, historical development, and practical applications of the PDCA cycle through various examples.

2. DEVELOPMENT PROCESS OF THE PDCA CYCLE

Walter Andrew Shewhart, considered one of the pioneers of quality management, defined quality through the production process in the 1930s. This approach later evolved into what is known as value creation theory. Shewhart also proposed the scientific model PDSA (Plan–Do–Study–Act) as a method for continuous quality improvement, which later became known as the PDCA (Plan–Do–Check–Act) cycle [1].

The PDCA cycle is based on the “Shewhart Cycle” and was popularized by Dr. W. Edwards Deming, one of the pioneers of modern quality control. This model has existed for approximately sixty years and provides a structured and proven process for achieving sustainable improvements in response to current challenges. Allocating sufficient time to each stage of the PDCA cycle is essential for conducting an effective and meaningful quality improvement process [2,3].

3. STEPS OF PDCA CYCLE

3.1 PLANING

Planning, one of the fundamental functions of management, can be defined as the process of developing strategies, setting objectives, and determining the methods and resources required to achieve these objectives. Without clearly defined goals, it is not possible to structure an organization effectively. The planning process includes stages such as data collection, analysis, developing assumptions, forecasting, identifying alternatives, and decision-making [4].

3.2 IMPLEMENTATION (DO)

The “Do” phase is where the objectives, strategies, and activities defined during the planning stage are put into practice.

During this phase:

- Personnel are trained if necessary,
- Processes are clearly defined and procedures are established,
- Effective coordination among different units is ensured,
- Unexpected situations, problems, and newly acquired information are recorded (this is the most critical stage of the process).

3.3 CHECK

The “Check” phase evaluates whether the activities carried out are consistent with the defined objectives, procedures, and standards, and ensures that necessary corrective actions are taken when needed.

This phase may include:

- Solving problems on a small scale,
- Preparing documentation and procedures,
- Defining processes in detail,
- Conducting pilot implementations and so on [5,6].

3.4 ACT

The "Act" phase, the final stage of the PDCA cycle, involves taking actions based on evaluation results.

Main benefits include:

Continuous Improvement:

Institutions learn from evaluation results and make necessary adjustments to improve performance.

Adaptation and Flexibility:

Acting on evaluation results enables institutions to adapt to changing conditions and remain competitive.

Innovation:

This phase promotes a culture of innovation, encouraging creativity, experimentation, and the adoption of new ideas and technologies. [6].

4. PDCA CYCLE FROM THE PERSPECTIVE OF YÖKAK

The PDCA cycle represents a systematic, holistic, and continuous improvement-based management approach across all institutional activities. YÖKAK expects each phase of the cycle to be clearly defined and supported by evidence.

YÖKAK has adopted a rubric-based evaluation approach to ensure consistency, objectivity, and comparability in assessing quality assurance systems:

4.1 Plan

Processes are planned in line with mission, vision, strategic goals, and stakeholder expectations.

☞ Key point of YÖKAK: Alignment with strategic management and stakeholder participation.

4.2 Do

Planned processes are implemented and documented.

☞ Key point of YÖKAK*:* Consistency and evidence of implementation (report, munites of meeting, activity evidence and so on).

4.3 Check

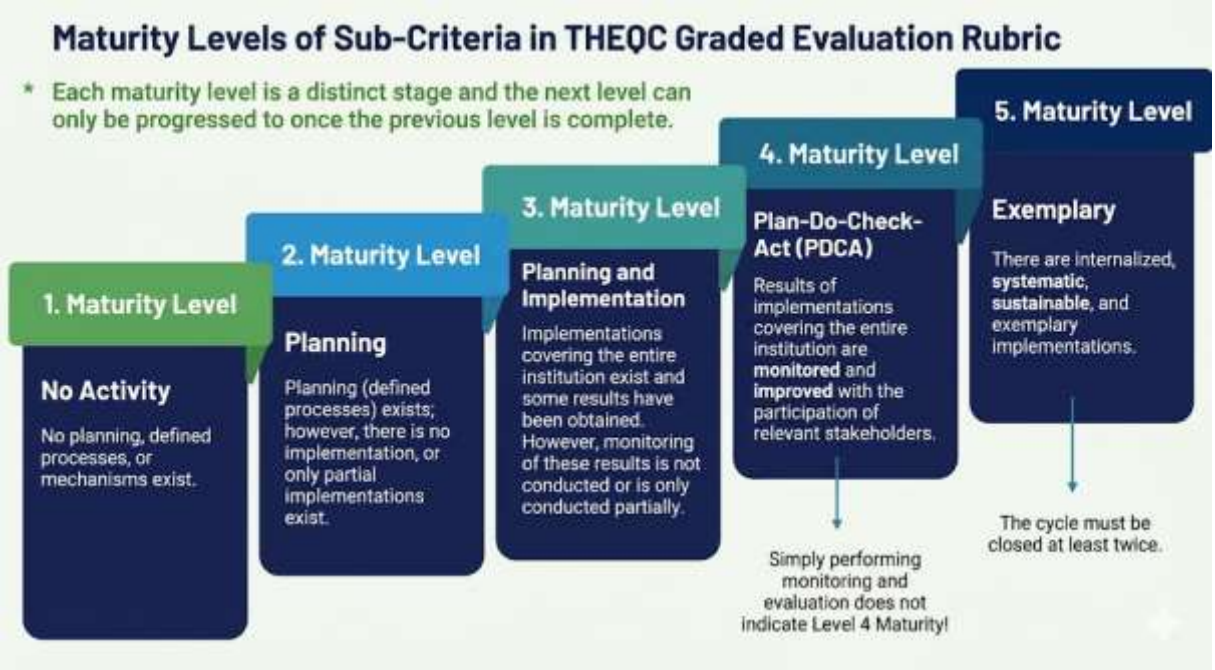
Performance is evaluated using indicators and stakeholder feedback.

☞ Key point of YÖKAK*:* Data-driven analysis and transparency.

4.4 Act

Improvement actions are taken based on evaluation results.

☞ Key point of YÖKAK: Institutional learning and sustainability [7].



5. EXAMPLE OF PDCA IMPLEMENTATION IN X A UNIVERSITY

This section provides an example of how the PDCA cycle is addressed to ensure the continuous improvement of education and training processes at a sample 'X University

Plan:

At the beginning of each academic year, Academic Units prepare Education Quality Plans that include program outcomes, course learning objectives, and assessment and evaluation methods. In these plans, improvement targets are determined in line with student success, satisfaction surveys, and graduate feedback.

Do:

In accordance with the established plan, course contents are updated, teaching methods (e.g., active learning, project-based learning) are implemented, and assessment and evaluation processes are conducted. Teaching staff regularly upload documents related to the execution of planned activities (lesson plans, meeting minutes, implementation reports, etc.) to the system.

Check:

At the end of the semester, student success rates, survey results, and faculty feedback are analyzed at both course and program levels. The obtained data are compared with the planned targets and evaluated through performance indicators.

Act:

Based on the analysis results, improvement action plans are prepared for the identified deficiencies. Course contents may be modified, assessment tools revised, or teaching methods reorganized. These improvements provide input for the next semester's planning process, thereby sustaining a culture of continuous improvement.

6. CONCLUSION

The PDCA cycle has formed the foundation of management and improvement processes from its historical origins to the present day. Shaped by the contributions of Walter Shewhart and W. Edwards Deming, this model has evolved into a universal standard by merging with the Kaizen (Continuous Improvement) philosophy. Its significance lies in encouraging data-driven decision-making and continuous improvement, while its benefits encompass increased efficiency, error reduction, and stakeholder satisfaction. In general use, it is effective across a wide range of areas, from project management to risk analysis; in higher education, it is indispensable for academic quality assurance and institutional development.

However, implementations in higher education encounter obstacles such as a lack of purpose and alignment, resistance to change, resource constraints, data insufficiency, and implementation complexity. These challenges stem from institutional culture and operational dynamics, potentially hindering improvement efforts. Nevertheless, proposed solutions—training programs, pilot projects, stakeholder participation, and the use of digital tools—offer effective approaches to overcoming these barriers. In the future, the integration of PDCA with digital transformation tools, such as artificial intelligence-supported analytics, will enable faster iterations and adaptations in higher education. By adopting PDCA as a strategic tool, institutions can build not only regulatory compliance but also an innovative culture of quality, providing a sustainable advantage in global competition. Consequently, as a method shaping the future of higher education, PDCA will strengthen equity and excellence in education.

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