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Sistema de Aseguramiento de la Calidad Educativa Universitaria: estrategia de mejora continua en el proceso de Acreditaciones Internacionales

System of Assurance of University Education Quality: improvement strategy continues in the process of International Accreditations

Sistema de Aseguramiento de la Calidad Educativa Universitaria: estrategia de mejora continua en el proceso de Acreditaciones Internacionales

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Resumen

Esta investigación tuvo como objetivo diseñar un Sistema de Aseguramiento de la Calidad Educativa Universitaria que funcione como estrategia de mejora continua para optimizar los procesos de evaluación y facilitar la obtención de acreditaciones internacionales de programas educativos en Instituciones de Educación Superior. Para alcanzar los objetivos, se empleó una metodología basada en la optimización constante mediante la aplicación del Ciclo E. W. Deming, con un enfoque cualitativo y el uso de la técnica de investigación documental. Como resultado, se diseñó un sistema que, mediante la implementación sistemática de la mejora continua, contribuye al cumplimiento de los indicadores exigidos por los organismos acreditadores internacionales. El sistema consta de cuatro etapas: 1) Indicadores clave: en los que se establecen seis criterios y/o estándares comunes, 2) Proceso Sistemático de Calidad: propuesta metodológica que consta de ocho pasos para su implementación, 3) Acciones correctivas y preventivas: mecanismos de seguimiento y ejecución de acciones de mejora para verificar el cumplimiento de indicadores y 4) Mejora continua del sistema: seguimiento de acciones correctivas y preventivas a través de planes de mejora. Se concluye que el Sistema de Aseguramiento de la Calidad Educativa Universitaria es una estrategia útil para guiar la implementación de la mejora continua en Instituciones de Educación Superior que buscan obtener o mantener las acreditaciones internacionales de sus programas académicos.

Palabras clave: Mejora Continua, Calidad Educativa, Indicadores de Desempeño, Estandarización de Procesos, Aseguramiento de la Calidad.

Abstract

This research aims to design a University Educational Quality Assurance System as a strategy for continuous improvement, facilitating an organized evaluation process that supports the attainment of international accreditation for educational programs in Higher Education Institutions. The methodology employed to achieve the research objectives was based on continuous improvement through the application of the E. W. Deming Cycle, adopting a qualitative approach with documentary research. As a result, a system was designed that systematically applies continuous improvement to meet the indicators required by recognized international accreditation bodies.

The system includes four stages: 1) Key Indicators: which six criteria and/or matching standards are determined 2) Systematic Quality Process: which is a methodological proposal consisting of eight steps for its implementation, 3) Corrective and preventive actions: mechanisms for monitoring compliance with indicators and implementing improvement actions 4) Continuous improvement of the system: the monitoring of corrective and preventive actions through improvement plans. The University Education Quality Assurance System is a useful strategy that guides the implementation of continuous improvement in Higher Education Institutions aiming to obtain or maintain international accreditations for their academic programs

Keywords: Continuous Improvement, Educational Quality, Performance Indicators, Standardization of processes, Quality assurance.

Resumo

Esta pesquisa teve como objetivo projetar um Sistema de Garantia da Qualidade Educacional Universitária que funcione como uma estratégia de melhoria contínua para otimizar os processos de avaliação e facilitar a aquisição de acreditação internacional para programas educacionais em Instituições de Ensino Superior. Para atingir os objetivos, foi utilizada uma metodologia baseada na otimização constante por meio da aplicação do Ciclo de E. W. Deming, com abordagem qualitativa e utilização de técnicas de pesquisa documental. Como resultado, foi desenhado um sistema que, por meio da implementação sistemática de melhorias contínuas, contribui para o atendimento dos indicadores exigidos pelos organismos internacionais de acreditação. O sistema é composto por quatro etapas: 1) Indicadores-chave: em que são estabelecidos seis critérios e/ou padrões comuns, 2) Processo Sistemático da Qualidade: proposta metodológica composta por oito etapas para sua implementação, 3) Ações corretivas e preventivas: mecanismos de monitoramento e execução de ações de melhoria para verificação do cumprimento dos indicadores e 4) Melhoria contínua do sistema: monitoramento das ações corretivas e preventivas por meio de planos de melhoria. Conclui-se que o Sistema de Garantia da Qualidade Educacional Universitária é uma estratégia útil para orientar a implementação da melhoria contínua em Instituições de Ensino Superior que buscam obter ou manter a acreditação internacional para seus programas acadêmicos.

Palavras-chave: Melhoria Contínua, Qualidade Educacional, Indicadores de Desempenho, Padronização de Processos, Garantia da Qualidade.

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Introduction

Growing demands for quality and competitiveness have driven the evolution of assessment systems. In this context, international accreditation has become a fundamental feature of educational systems in the era of globalization and the knowledge society. Accreditation plays an essential role in higher education, as it guarantees the quality of programs and compliance with specific standards. In Mexico and Latin America, various accreditation bodies, both national and international, assess the quality of educational institutions.

In Mexico, the CIEES (Higher Education Evaluation and Accreditation System) is responsible for evaluating the quality and recognition of educational programs through self-assessment and external evaluation processes (CIEES, 2023). The Higher Education Evaluation and Accreditation System (SEAES) establishes the foundations for the evaluation and accreditation of higher education, coordinating the stakeholders involved and improving the overall quality of higher education through evaluation cycles and phases (SEAES, 2023). Likewise, the Council for the Accreditation of Higher Education (COPAES) grants recognition to the organizations that accredit higher education programs, ensuring compliance with national quality standards (Juárez Santiago et al., 2015).

In the Ibero-American region, the Ibero-American System for Quality Assurance in Higher Education (SIACES) promotes cooperation and dissemination of good practices in the evaluation and accreditation of higher education, with the aim of improving quality and fostering mutual trust among its members (SIACES, 2023). Furthermore, the Ibero-American Network for the Accreditation of the Quality of Higher Education (RIACES) facilitates collaboration between accrediting bodies and promotes student mobility and degree recognition, which benefits Mexican universities in their process of international recognition (Acosta & Acosta, 2016).

Accreditations are pillars of excellence in higher education in Mexico and Latin America. They provide a framework for measuring progress and opportunities for improvement. Accredited institutions are better prepared to adapt to change and implement continuous improvement practices (Juárez Santiago et al., 2015).

In this regard, it is considered important to build an educational quality assurance system and continuous improvement strategies in Higher Education Institutions. These

strategies lay the foundation for maintaining performance indicators and quality standards, with continuous improvement actions that guarantee the consolidation of educational results, research outputs, engagement, and impact on society. As a result, these continuous improvement practices must be aligned with the reference frameworks of international accreditation models.

The general objective of this work is to Design a proposal for a University Educational Quality Assurance System as a continuous improvement strategy in the International Accreditation process.

To ensure that educational institutions meet established quality standards, it is essential to have an organized evaluation process. In this regard, the following specific objectives are proposed: 1) Plan quality indicators and processes in accordance with the requirements for the International Accreditation of Academic Programs in Higher Education Institutions (Morera-Castro et al., 2019b). 2) Design a Systematic Quality Process that covers all the stages necessary for the international accreditation of academic programs, ensuring its effective implementation (Medina-Manrique et al., 2022). 3) Monitor the Systematic Quality Process to ensure compliance with standards, identify areas for improvement, and adjust strategies as necessary. (Arjona-Granados et al., 2022), 4) Standardize processes through concrete actions, ensuring that the necessary indicators for the International Accreditation of Academic Programs in Higher Education Institutions are met (Morales Ibarra, 2018)

Continuous improvement is key to the sustainable development of educational institutions, as it involves a constant commitment to evaluating and adjusting processes. This practice applies not only to academic programs but also to administrative areas and student services, ensuring comprehensive quality in all facets of the institution (Reina & Tulmo, 2023).

Continuous improvement methodologies are crucial in the business and educational sectors, as they help optimize processes and improve service quality. The PDCA Cycle, Kaizen, Six Sigma, and Lean are valuable tools for improving efficiency and maintaining high levels of quality. These processes help institutions comply with national and international standards and adapt to a competitive and globalized environment.

Below, some continuous improvement methodologies applicable to the International Accreditation process in higher education institutions are analyzed:

PDCA (Plan-Do-Check-Act) Cycle. Known as the Deming Cycle, this methodology allows for planning, execution, verification, and adjustments in processes. It is used to modify

curricula and administrative practices. Some of its advantages are its flexibility and adaptability, and it promotes a culture of continuous improvement. However, it can be slow in environments that require rapid responses and depends on organizational commitment, as mentioned by Liliam & Godoy (2023) and Hernández Paz et al. (2023).

Kaizen. This Japanese term means "continuous improvement" and focuses on the commitment of all members of an organization to optimize practices and eliminate waste. It is applied in administration and academic processes. Some of its advantages include fostering collaboration and accountability, generating sustainable improvements. Some of its disadvantages include the fact that its success depends on a strong organizational culture and leadership (Forero et al., 2016; Juárez Santiago et al., 2015).

Six Sigma. It uses statistical tools to reduce process variability and eliminate defects, improving administrative management and student satisfaction. It has a structured approach that helps reduce costs and improve quality. One of its disadvantages is that it requires a considerable investment in training and can be perceived as technical and complex (Ramírez & Sánchez, 2014; Acosta & Acosta, 2016).

Lean Manufacturing . It focuses on eliminating waste and improving efficiency, optimizing processes and resources in educational institutions, which is why one of its advantages is that it reduces costs and response times, useful in large institutions, but it can be inflexible and not adequately address qualitative aspects of the educational environment (Morales Ibarra, 2018; Universidad Iberoamericana, 2020).

In summary, based on the literature reviewed regarding continuous improvement models, it is concluded that Six Sigma and Lean Manufacturing are recommended to optimize efficiency and reduce costs, while the PDCA Cycle and Kaizen are often preferred in the educational field due to their participatory approach and adaptability.

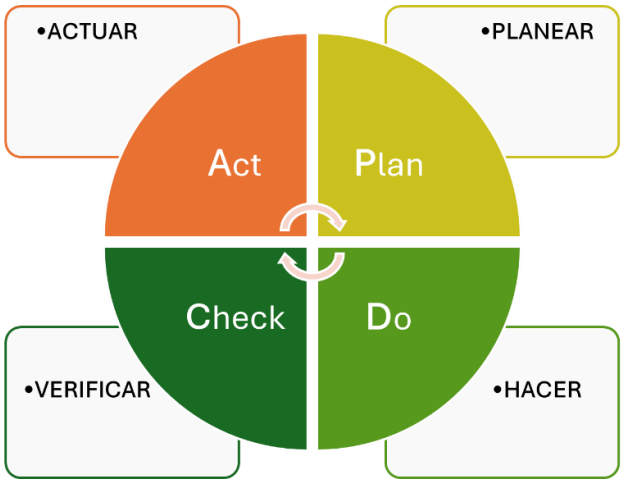
Given the positive impact of continuous improvement strategies on the quality of university education, this study was developed to design a quality assurance system for the international accreditation process. This system seeks to optimize resources, strengthen institutional processes, and guarantee excellent education.

Method

The methodological design of this study is based on qualitative research, since data collection does not translate into numerical results (Hernández-Sampieri & Mendoza, 2018). The technique employed is documentary research, which allows for the collection and selection of information from various sources to guide the study in two ways: first, by relating pre-existing data from different sources; and second, by offering a systematic and panoramic view of a specific issue based on multiple documents (Barraza, 2018). The approach is descriptive, as it allows for the collection, analysis, and presentation of information on processes, particularly accreditation processes, in accordance with quality standards, with the aim of designing a university education quality assurance system (Guevara, Verdesoto, & Castro, 2020).

To achieve the research objective, which was to design a University Educational Quality Assurance System as a continuous improvement strategy in the International Accreditation process, the Deming Cycle methodology was adopted, consisting of four phases: plan, do, verify and act (see Figure 1).

Figure 1. Deming Cycle (PDCA)



Source: Adapted from Deming (1989).

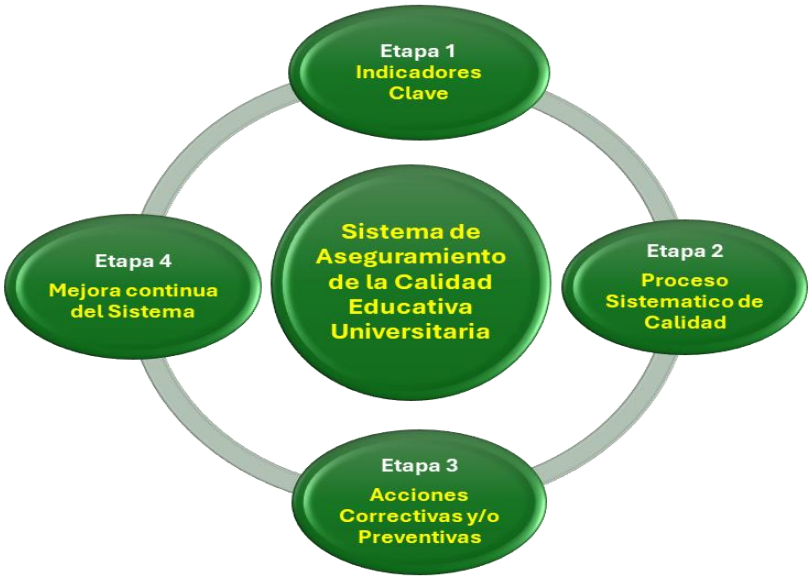
The phases of the cycle were developed with the purpose of designing a system for ensuring educational quality in the accreditation process. Phase 1. Planning: The evaluation and accreditation guidelines of international organizations in the most established areas of knowledge were reviewed. Therefore, the areas of Engineering and Administration were selected to conduct a detailed and comparative analysis of the standards used by each of these

organizations. Phase 2. Do: Once the indicators were identified, the personnel responsible for each area were informed about the implementation of an improvement plan to address the specific accreditation requirements, resulting in the design of customized strategies for compliance. Phase 3. Verify: Processes are monitored through requests for monthly, quarterly, semi-annual, or annual reports to evaluate the results. Phase 4. Act: In this phase, actions are implemented to optimize process performance and compliance with indicators by measuring results, ensuring continuous improvement.

Results

The main outcome of this research was the design of a University Educational Quality Assurance System as a continuous improvement strategy for the processes of obtaining and maintaining International Accreditation. This system proposes a systematic approach to continuous improvement in all processes related to compliance with the indicators required by recognized accreditation bodies. It is structured in four stages (see Figure 2) .

Figure 2. University Educational Quality Assurance System



Source: Own elaboration

The Deming Cycle methodology was applied, obtaining the following results within the proposed system:

Stage 1 Key Indicators

In the first phase, common standards derived from the analysis of the evaluation and accreditation guides of recognized international organizations were identified. The evaluation criteria of the ACBSP (Accreditation Council for Business Schools and Programs) for the administrative area (ACBSP, 2022) and of ANECA (National Agency for the Evaluation of Quality and Accreditation) for the engineering area (ANECA, 2022) were considered. The analysis showed that most accredited programs in both national and international institutions opt for these organizations to obtain their accreditation. The comparative analysis of the standards required by each of these organizations led to the definition of six key indicators: Organization and leadership, Strategic planning, Curricula, Teaching staff, Students and stakeholders; and Quality Improvement System (Ferreiro, Brito & Lucero, 2023), which were grouped into the following categories: 1) Structure and planning, 2) Curriculum, 3) Teachers and students, 4) Labor sector and 5) Quality Assurance for the purposes of the presented system, in which educational institutions must pay special attention to comply with them and achieve international accreditation **(** Table 1).

Table 1. Key indicators for obtaining international accreditations

No.	Indicator	Definition
1	Structure and planning	Have systematic leadership and strategic management processes that promote organizational culture in pursuit of continuous improvement, considering the objectives included in the organization's short- and long-term action plan.
2	Study plans	Curriculum design with an international focus, incorporating a professional component appropriate to the academic level, with an updated curriculum aligned with the demands of the environment and competitiveness.
3	Teachers and students	Ensure a well-trained and qualified teaching staff that fosters excellence in teaching and teacher professional development, ensuring that student expectations are met.
4	Labor sector	Ensure the requirements and expectations of the labor sector are met, maintaining constant communication with outreach activities to achieve results that meet the needs of stakeholders.
5	Quality Assurance	Have a systematic process to identify and track key performance measures based on the requirements of the evaluating bodies in order to achieve quality assurance through continuous improvement.

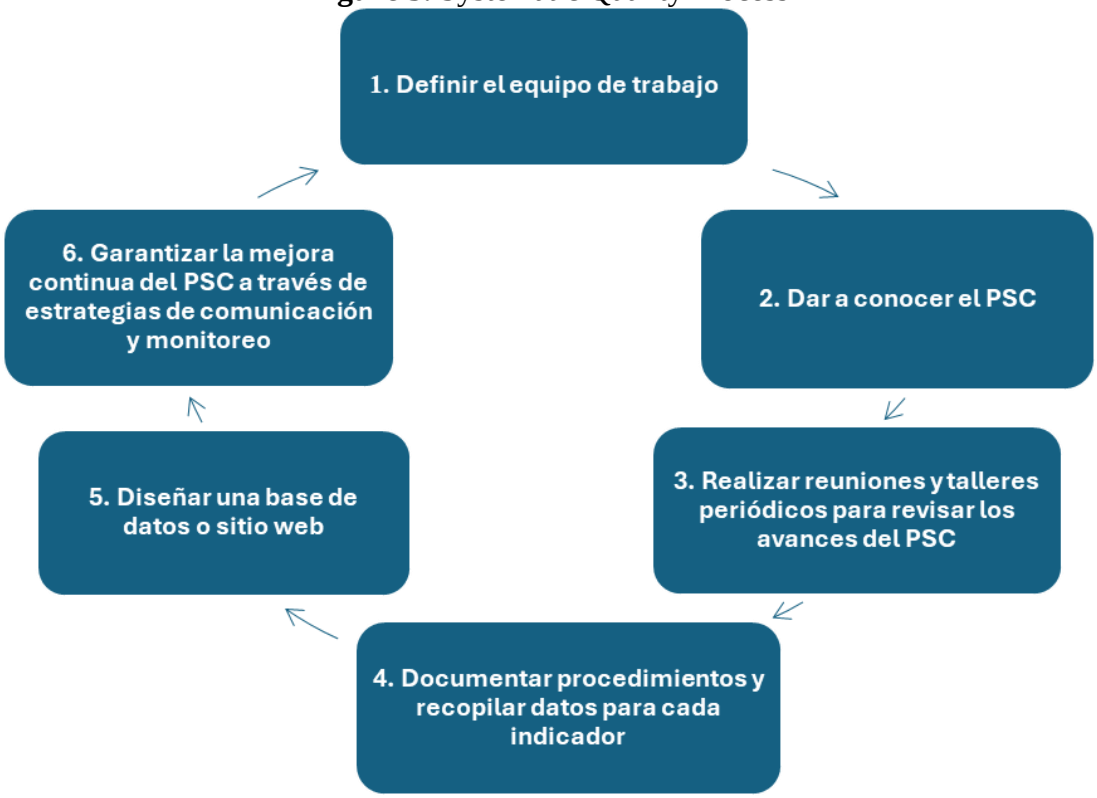
Source **:** Own elaboration

Key indicators must be addressed one by one in pursuit of compliance–of what is required by the recognized evaluation bodies, then we proceed with the second phase of the methodology, in which the proposed Systematic Quality Process is applied.

Stage 2 Systematic Quality Process

In the second phase, a Systematic Quality Process (SQP) is designed as a methodological proposal to guide the achievement of International Accreditation. This process consists of six steps for implementation (see Figure 3), which are described below.

Figure 3. Systematic Quality Process



Source: Own elaboration

1. Define the work team. The implementation of a PSC must involve all coordinators and/or those responsible for the areas involved in the indicators required by the evaluation bodies, to ensure their commitment and participation.
2. Introduce the PSC. Hold an opening meeting to introduce the team members to the PSC, their roles, and the activities each of them will perform.
3. Conduct periodic meetings and workshops to review the progress of the PSC. Generate feedback *from* employees on the PSC to provide an opportunity for them to participate in the development of the system's processes and procedures.
4. Document procedures and collect data for each indicator . Data collection is essential for providing evidence of performance and identifying opportunities for improvement. It is important to document the procedures, which are the detailed instructions used to carry out the organization's activities, and define the required formats for each area to provide evidence of what has been done. Regarding data collection, it is recommended that it be conducted by the coordinator or person in charge of implementing the PSC. For this purpose, the information must be submitted by each process owner related to the key indicators.

5. Design a database or website. Consider designing a database or website that maintains up-to-date information on each of the required standards, seeking systematization. The use of appropriate software can help facilitate the implementation of this systematic process.
6. Ensure continuous improvement of the PSC through communication and monitoring strategies. This will help maintain commitment and ensure everyone is working in the same direction. To communicate results and progress, the following activities should be carried out: Post information about the PSC on the intranet or the educational institution's website, on a bulletin board, send emails or newsletters, and hold informational and work meetings to implement corrective and preventive actions to address issues that have occurred in other accreditations.

Stage 3 Corrective and preventive actions

Once the PSC has been designed, the third methodological phase begins, in which the implementation of the process is verified by monitoring through the following mechanisms:

1. Determination of recurring (monthly) Work Team sessions to establish the action plan and review process progress.
2. Request for data through the generation of quarterly reports with results obtained for each area involved with the key indicators.
3. Maintain a constant order and systematization of information, hosting it in a database or website , which must be fed with quarterly reports that allow updated information to be available at any time for semiannual analysis.
4. Determination and monitoring of compliance with both corrective and preventive improvement actions on a semi-annual basis.

Stage 4 Continuous system improvement

In the last phase The Work Team must analyze the findings obtained during the implementation and monitoring of the system, identify strengths and weaknesses, and evaluate the causes of the deficiencies detected . Review the actions defined through improvement plans for each evaluable educational program so that corrective and/or preventive actions can be implemented to support process standardization and ensure compliance with the indicators required by the evaluating bodies. This information should be made available to stakeholders through emails, newsletters, and/or informational meetings that will guide continuous improvement.

Discussion

The results of this research support the idea that continuous improvement in the international accreditation process is an effective strategy for ensuring educational quality. These findings coincide with the contributions of De la Vega (2024), who proposes a replicable continuous improvement methodology in business schools in Mexico, based on the guidelines of an international higher education accreditation organization.

Likewise, the results are consistent with those of Guerra et al. (2022), who highlight that quality assurance models in higher education not only allow for the accreditation of institutions, but also demonstrate the complementarity between quality accreditation and the synergies derived from the joint implementation of these models.

This study provides valuable guidance for implementing a university education quality assurance system. It also establishes a set of planned and organized activities to ensure compliance with quality standards in higher education. This process includes identifying requirements, implementing procedures to meet those requirements, measuring results, and implementing continuous improvement. The implementation of the Systematic Quality Process for achieving accreditation ensures that higher education meets quality standards and enables HEIs to differentiate themselves in the market based on their quality, as universities that meet these standards gain a competitive advantage by demonstrating their commitment to quality.

Conclusion

The University Educational Quality Assurance System is an effective strategy for implementing continuous improvement in higher education institutions seeking to obtain or maintain international accreditation for their educational programs.

The findings of this research demonstrate the importance of the proposed system to identify and implement program improvements, as well as to meet the indicators established to obtain international accreditation . In response to the research objectives, four stages are identified within the implementation of the Quality Assurance System, beginning with the identification of key indicators that contain the criteria and / or coinciding standards whose compliance must be addressed in a systematic manner that supports the obtaining of international accreditation. 6 common criteria are mentioned which can be adapted to meet the specific requirements of each area and facilitate the design of customized strategies to meet these requirements. Based on the identification of the key indicators, a Systematic

Quality Process is developed, consisting of eight steps for its implementation and serves as a guide to ensure compliance with the standards required by international accreditation bodies. It can also be useful to maintain accreditations once the predefined criteria have been met. In addition, information is systematized through a database on each of the required standards. On the other hand, the third stage is presented, in which the mechanisms for implementing and monitoring the systematic process are determined, and finally, the stage of continuous improvement of the system, in which corrective and preventive actions are carried out to ensure compliance with the criteria and standards requested by international accreditation bodies.

The proposed University Educational Quality Assurance System allows for an organized evaluation process that contributes to achieving international accreditation for the PE offered by HEIs. It is important and vital that it be adapted to the needs of each institution and its context, following its own improvement strategies.

Future lines of research

This study on the design of a University Educational Quality Assurance System in the context of international accreditation raises multiple opportunities for future research in higher education in Mexico. In particular, the work highlights the importance of continuous improvement and the adaptation of international quality models to the Mexican context. These approaches are not only essential for obtaining and maintaining international accreditation, but also for improving educational quality in general.

A key research direction derived from this study is the evaluation of the impact of international accreditations on educational quality and the internationalization of Mexican universities. This could include research on how these accreditations contribute to the competitiveness of institutions in the global market, as well as how they benefit student mobility and degree recognition.

It is also important to investigate specific continuous improvement strategies in postgraduate programs, since high-level training directly influences the development of research and innovation. Another important area is the incorporation of digital technologies into the accreditation process, such as academic management platforms and databases that facilitate the monitoring and collection of data on quality indicators.

Finally, the research could be expanded to analyze the corrective and preventive actions that must be implemented to maintain accreditations, as well as the sustainability of these processes in the medium and long term, which could ensure that improvements are

sustained over time. In summary, this research provides the basis for multiple lines of inquiry to further study the quality of university education, the impact of international accreditations, and the adaptation of global models to national contexts, with the goal of enriching quality assurance practices and strengthening higher education in Mexico.

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Acquisition of funds	Janette Brito Laredo<<main>>