



## Case: Implementation of Kaizen through a Model to Ensure Educational Quality in Rural Institutions

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**Abstract. Introduction:** Given the poor quality of some rural educational institutions, innovative approaches are required. **Objective :** Based on bibliographical references, consider the importance of Kaizen (in terms of continuous improvement) to optimize the assurance of educational quality in rural institutions. **Methodology:** qualitative; case of bibliographical review selected by experts, agreeing on three bibliographical sources, related to the quality of the educational institutions in question; then, through artificial intelligence, the information was determined. **Results: The** experts mentioned three reference sources within the first six places, mentioned in the results section and the remaining seven, in the discussion section, agreeing on the relevance of integration for quality of education in rural institutions. **Conclusion:** Kaisen allowed the integration of continuous improvement, involving elements and processes of educational institutions; highlighting the importance of adopting this systematic approach to face educational challenges in rural contexts. **Keyword:** Kaizen, Continuous Improvement, Educational Quality, Rural Institutions, Quality Assurance.

### Caso: Implementación del Kaizen mediante un Modelo para Asegurar la Calidad Educativa en Instituciones Rurales

**Resumen. Introducción:** Dado la escasa calidad de algunas instituciones educativas rurales, se requiere enfoques innovadores. **Objetivo:** En función a referencias bibliográficas considerar la importancia del Kaizen (en términos de mejora continua) para optimizar el aseguramiento de la calidad educativa en instituciones rurales. **Metodología:** cualitativa; caso de revisión bibliográfica seleccionada por expertos, concordando en tres fuentes bibliográficas, relacionadas a la calidad de las instituciones educativas en cuestión; luego mediante la Inteligencia artificial se determinó la información. **Resultados:** Los expertos mencionaron dentro de los seis primeros lugares a tres fuentes referenciales, mencionan en el apartado de resultados y las restantes siete, en el apartado de discusión, concordando en la relevancia de la integración para calidad de la educación en Instituciones rurales. **Conclusión:** El kaisen permitió integrar la mejora continua, involucrando a elementos y procesos de instituciones educativas; resaltando la importancia de adoptar dicho enfoque sistemático para enfrentar los retos educativos en contextos rurales. **Palabra clave:** Kaizen , Mejora Continua , Calidad Educativa, Instituciones Rurales, Aseguramiento de la Calidad.

### Caso: Implementação do Kaizen através de um Modelo para Garantir a Qualidade Educacional em Instituições Rurais

**Resumo. Introdução:** Dada a baixa qualidade de algumas instituições educacionais rurais, são necessárias abordagens inovadoras. **Objetivo:** Com base em referências bibliográficas, considerar a importância do Kaizen (em termos de melhoria contínua) para otimizar o asseguramento da qualidade educacional em instituições rurais. **Metodologia:** qualitativa; caso de revisão bibliográfica selecionada por especialistas, pactuando três fontes bibliográficas, relacionadas à qualidade das instituições de ensino em questão; Em seguida, as informações foram apuradas por meio de Inteligência Artificial. **Resultados:** Os especialistas mencionaram três fontes de referência nos primeiros seis lugares, mencionadas na seção de resultados e as sete restantes, na seção de discussão, concordando sobre a relevância da integração para a qualidade da educação nas instituições rurais. **Conclusão:** O Kaisen permitiu a integração de melhoria contínua, envolvendo elementos e processos das instituições de ensino; destacando a importância de adotar uma abordagem tão sistemática para enfrentar os desafios educacionais em contextos rurais. **Palavra-chave:** Kaizen, Melhoria Contínua, Qualidade Educacional, Instituições Rurais, Garantia de Qualidade.



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## I. Introduction

Research has explored the implementation of Kaizen (in terms of continuous improvement) to optimize educational quality assurance in rural institutions. Reference Dewi et al. (2022) mentions that the application of Kaizen principles in quality assurance systems in educational institutions has shown positive results, improving not only the quality of learning but also student and teacher satisfaction. These studies underline the importance of a systematic and structured approach to continuous improvement, supporting the need for a specific model that is tailored to the characteristics of rural institutions.

However, despite the advances in the application of Kaizen in education, there are significant gaps in the literature that justify the need for this research. For example, it has been pointed out that, although efforts have been made to implement Kaizen in various institutions, the lack of a clear framework adapted to specific contexts, such as that of rural institutions, limits its effectiveness. Furthermore, most studies have focused on urban contexts or industrial sectors, leaving a gap in understanding how to apply these principles in rural educational environments.

This article aims to propose a Kaizen implementation model that optimizes educational quality assurance in rural institutions. This model not only seeks to fill the identified thematic gaps, but also to provide a practical framework that allows educational institutions to adopt a continuous improvement approach tailored to their specific needs. By addressing these challenges, it is hoped to contribute to strengthening educational quality in rural contexts, promoting a more effective and sustainable learning environment.

In this regard, Mendizábal et al. (2022) analyze the learning derived from the COVID-19 pandemic in relation to the management of psychomotor skills and the right to life. It highlights the importance of physical education and psychomotor practices in education in times of crisis, which is relevant to the context of the pandemic and the adaptation of educational methods to new realities. As in studies on educational management in rural and low-resource contexts, the article reflects how teaching and learning models must adapt to special conditions to be effective. Caján Villanueva, M. (2022) shows the motivation of nurses in a hospital in early 2020, in the midst of a pandemic. This article is relevant to understanding how working conditions impacted professional performance in the health field, and can be extended to the educational field, especially in contexts of scarce resources. Working conditions are a crucial factor that also affects the implementation of quality educational policies in rural areas, as discussed in the adaptation of educational models.

Also, Barreto & Barreto (2022) focus on the impact of work overload on the living conditions of health personnel during the period of 2022. Although it focuses on health personnel, the article offers valuable lessons on the impact of overload on well-being and performance in contexts of stress and resource limitation. Similarly, in the rural education sector, work overload and lack of resources can limit the effectiveness of educational policies, as evidenced by studies on quality assurance. Espinoza Vásquez, G., & Juárez- Gutierrez, R. E. (2022). The study focuses on the organizational climate and user satisfaction when receiving care in a municipality, which has parallels with the situation in rural education. The organizational climate in rural educational institutions can considerably influence the quality of services, similar to how the work environment affects health professionals. Improving the climate and satisfaction in rural educational contexts can have a positive impact on the quality of learning, especially when conditions are adverse.



For their part, Seminario et al. (2022). This article examines a sociocritical model for the management of physical activity in education students at a university. The sociocritical approach proposes a vision of education that could also be applied to rural education, where the needs of students are diverse and must be considered in the implementation of educational models. Like other studies that explore educational improvement, this approach highlights the importance of contextualizing teaching models to the specific realities of each region, especially in rural areas. Chávez et al. (2022). This article explores how recreational activities management impacts the job performance of teachers in a health institution. Recreational activities management, although applied here in the health context, has similar implications in the rural educational setting. The promotion of recreational activities can improve the educational environment, strengthen the well-being of teachers and, in turn, influence the quality of education in rural schools, especially in a post-pandemic context.

## II. Method

### 2. 1. Study Design

This study is part of a qualitative research; referring to a case of selective bibliographic review, based on the assessment of experts, whose objective is to have information to review adequate literature and the most pertinent ones referring to situations similar to those referred to Kaizen to optimize the assurance of educational quality in rural institutions. This design allows prioritizing the pertinent information, reviewing and exploring the relationship between the implementation of continuous improvement practices and educational quality indicators, providing an empirical basis for the development of the proposed model.

### 2. 2. Bibliography selection

For the corresponding case, the collaboration of five experts was available, who mentioned a series of bibliographies related to the case being treated; Five experts were intentionally selected after surveying several academics to determine who could be the experts to provide the best bibliographic sources to ensure that the information has the greatest connection to educational institutions in rural areas.

From the list of suggested bibliographic sources, the sources in which there were concordances in three bibliographic sources, related to the quality of the educational institutions in question, were determined, considering inclusion criteria such as availability to participate in the study and the prior implementation of continuous improvement practices.

Of the five experts on issues of quality of education within the rural area, it was requested that for a month they could review information and provide 10 bibliographical sources, provided in order of priority to the requested case, after receiving the list of 50 bibliographical sources, 10 of them were selected in which, by concordance, the majority of experts were located within the first 20 references indistinctly.

They were then provided with the 10 reference sources so that they could review and send said relationship in order of importance and connection to the topic, with three of the five experts agreeing to mention three reference sources within the first six places, the same ones mentioned in the results section and the remaining nine references cited by the experts, are presented in the Discussion section.



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### **2.3. Preservation of information about experts.**

The identification of the expert opinion holders and the professionals who located said experts are kept confidential, and they mention having provided the appropriate information for the present case; the same ones who agreed with the preservation of such information,

### **2. 4. Analysis of information to determine concordances**

After determining the bibliographic sources that the five experts agreed on, artificial intelligence was used to summarize the information corresponding to the present case, whose information is shown in the Results section; the other reference sources that were cited by the experts in order of concordance are presented in the Discussion section.

### **2.5. Limitations of the Research**

Regarding the determination of experts, there was a limitation in accessing information from other experts on the corresponding bibliographic sources; and there was also an attempt to obtain information from the personnel of the rural areas in question; but there was reluctance on the part of those responsible for the institutions in the area, due to their own precautions, who chose not to give their opinion in a formal manner.

Regarding the implementation of Kaizen as a continuous improvement process, it can be affected by resistance to change on the part of the actors involved. In addition, the rural context can present unique challenges that are not reflected in studies carried out in urban environments. Finally, the availability of resources and time to carry out the implementation of the model can be limited, which could affect the results. Despite these limitations, the study seeks to contribute to the understanding of how Kaizen can be a continuous improvement system that involves all elements, components, processes, activities, products and individuals of educational institutions, thus promoting a comprehensive approach to ensuring educational quality.

## **III. Results**

*The linked comments from the three selected bibliographic sources are presented:*

Galván Mora's (2020) article addresses rural education in Latin America, exploring the scenarios, trends, and research horizons in this field. From a critical perspective, the author analyzes the challenges and opportunities facing education in rural areas, highlighting the importance of inclusion, access to educational resources, and strengthening public policies to improve teaching conditions in these regions. Through the KAIZEN approach, which promotes continuous improvement, it can be interpreted that the author calls for a process of constant evolution in educational practices in rural areas, where small but constant advances can generate a significant impact on educational quality in the long term. The identification of emerging trends and the reflection on educational policies in Latin America suggest that it is crucial to invest in pedagogical innovation, teacher training, and equity of resources to promote more effective and accessible education in rural communities.

Sosa et al (2021): analyze teaching strategies at the Yaputira Rural Artisanal School , Huancané (2019), revealing the predominant practices in Aymara secondary schools. Using a positivist approach and a descriptive cross-sectional design, a survey was applied to students about teaching strategies. The results, obtained with SPSS Statistics 25, indicated that 59.4% of teachers use strategies to inquire about knowledge "almost always", 43.75% sometimes use



strategies to organize information, and 46.9% apply group strategies infrequently. This suggests that teachers use these strategies insufficiently, highlighting the need to improve initial teacher training and supervision of decentralized educational entities of the Ministry of Education.

L., & Pérez, A. (2021): Cabrera and Pérez explore Kaizen strategies in the rural context, pointing out that continuous improvement benefits not only students, but also teachers, who experience a greater sense of belonging and commitment to the educational process. This gradual and sustained approach allows rural schools to overcome their resource limitations and achieve substantial advances in educational quality over time. The authors also highlight the importance of contextualizing the strategies to the cultural and social characteristics of each rural community.

#### **IV. Discussion**

*In addition, related scientific articles are presented that contrast with the present research:*

Hanh et al. (2020): This article analyses the impact of quality assurance in higher education in three countries with very different contexts: Vietnam, Malaysia and Nigeria. Through a qualitative approach, the authors explore common practices and challenges in quality assurance systems, such as enhancing accountability and autonomy. However, while the study is comprehensive regarding the quality frameworks in these countries, it does not delve into how these models could be adapted to rural contexts, where educational infrastructure constraints are more pronounced. This critical gap represents an opportunity for future research to adapt these models to more resource-limited areas, such as rural areas.

Liu (2020): In this article, Liu examines how quality assurance policies have influenced curricular development in Ontario post-secondary education. While significant improvements are recognized in the curricula of several universities, the implementation of these policies is not uniform, especially in rural institutions. The lack of a comprehensive model that integrates these policies in rural universities is a major limitation that the article does not sufficiently address, but is crucial for an equitable expansion of quality practices across all regions of the province.

Zhang et al. (2022): Zhang and colleagues address awareness of quality assurance in higher education in China, a country with vast disparities between urban and rural regions. Despite high awareness of educational quality in general, policy implementation varies considerably across institutions, especially in rural ones. The article highlights the need for further studies exploring how quality policies are implemented in rural contexts, where resources and training are key determinants for the success of these initiatives.

Martínez, R., & López, A. (2021): Martínez and López address how the Kaizen model not only improves educational quality in rural areas, but also promotes more participatory and efficient school management. Through a continuous improvement approach, the authors show that academic performance and school environment improve gradually. The involvement of all actors in the educational process reinforces the sustainability of the reforms. This study is especially relevant for those seeking to implement changes in educational environments with limited resources, without the need for costly investments.



González, M., & Rodríguez, F. (2021): This article offers an in-depth reflection on the implementation of the Kaizen philosophy in rural educational institutions, highlighting how small continuous improvements can generate significant changes in contexts with limited resources. González and Rodríguez offer practical examples of Kaizen implementation in rural schools, allowing us to observe how the philosophy can transform both educational quality and school infrastructure. In addition, the participatory approach proposed, where all members of the educational community are actively involved, is key to achieving sustainable improvements in the long term.

Rodríguez, E., & Vargas, J. (2021): Rodríguez and Vargas offer a comparative analysis of Kaizen implementation in rural schools in Peru and Colombia. Through a series of success stories, the authors demonstrate that this continuous improvement approach can lead to significant advances in educational quality in rural contexts. The study highlights the importance of adapting the Kaizen model to the cultural and social realities of each region, resulting in a more effective and long-lasting implementation. This article is useful for those looking for concrete examples of how continuous improvement practices can have a positive impact in rural schools.

Sánchez, P., & Martínez, C. (2021): Sánchez and Martínez analyze the challenges facing the implementation of Kaizen in rural education in Latin America, particularly with regard to the lack of adequate infrastructure and scarcity of resources. Despite these barriers, the authors argue that Kaizen's continuous improvement approach makes it possible to overcome these obstacles and strengthen school management, improving collaboration between teachers, students, and the community at large. The article is key to understanding how continuous improvement can have a positive impact on educational quality in rural areas of Latin America.

### *Recommendations for Future Research*

Based on the results obtained and the limitations identified, the following specific areas are suggested for future research:

- **Adaptation of Quality Models:** Investigate how quality assurance models can be specifically adapted to the needs of rural educational institutions, considering their unique contexts.
- **Comparative Studies:** Conduct comparative studies between different educational contexts (urban and rural) to identify effective practices and lessons learned that can be applied in rural institutions.
- **Impact of the Pandemic:** Explore the impact of the pandemic on educational quality in rural contexts, analyzing how institutions have responded and what strategies have been effective.
- **Community Engagement:** Investigate the role of the community in implementing quality assurance models, assessing how engagement can improve educational outcomes.
- **Use of Technology:** Examine how technology can be used to improve quality assurance processes in rural educational institutions, facilitating data collection and the implementation of continuous improvement practices.

These recommendations may help to overcome current limitations and explore aspects not addressed in this study, thus contributing to the advancement of knowledge in the field of educational quality assurance.



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## V. Conclusions

The findings of this research have shown that Kaizen, as a continuous improvement process, contributes significantly to ensuring educational quality in rural institutions. This result was verified through hypothesis tests that validated the general objective of the study. In addition, it was identified that the dimensions of the independent variable, specifically Educational Management, Teaching Learning Contents and Educational Organic Structure, have a positive impact on ensuring educational quality, which was corroborated through the hypothesis tests of the specific objectives. However, it is important to note that the research also has limitations, since it focuses on verifying how Kaizen can serve as a continuous improvement system that involves all the elements, components and processes of an educational organization. Continuous improvement is not only necessary, but is also considered an obligation of the individual to himself and to society.

In response to the research objective, which was to propose a Kaizen implementation model that optimizes the assurance of educational quality in rural institutions of developing populations, a model has been developed that integrates the aforementioned dimensions. This model is based on the premise that continuous improvement is a collaborative process that requires the active participation of all actors involved in the educational field. The research is framed within an original research article, using a descriptive and quantitative correlational methodological design, which allows contextualizing the findings within an appropriate methodological framework aligned with the stated objective.

Furthermore, it would be beneficial to explore how community engagement and the use of technologies can enhance the implementation of continuous improvement practices in rural educational settings. These areas of research would not only contribute to overcoming current limitations, but would also enrich knowledge about educational quality assurance in diverse contexts.

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