

National University of Comahue



## **“Didactic innovation and student participation: impact of playful and technological strategies in teaching payroll processing”**

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### **Translation of the Document**

#### **“Didactic Innovation and Student Participation: Impact of Playful and Technological Strategies in the Teaching of Payroll Calculation”**

#### **Resumen / Abstract**

The present study analyzes the impact of didactic innovation on improving student participation within teaching processes. Starting from the theoretical framework of contemporary authors in pedagogy and educational technology, active strategies—such as the use of digital tools and playful dynamics—were implemented in a payroll calculation course taught at the popular library “Eliel Aragón” in the city of Neuquén. The research, utilizing a qualitative approach and an observation and intervention design, sought to increase student participation by at least 75%. The results demonstrated an increase from 40% to 80% in the active intervention of students following teacher training oriented toward the use of innovative methodologies. It was evidenced that student-centered learning, mediated by technology and play, favors motivation, comprehension, and critical thinking. While the findings confirm the relevance of pedagogical innovation for raising educational quality, limitations derived from the small sample size and the specific context of the study are recognized. It is recommended that future research be expanded to different educational areas and levels, in order to validate the sustainability and generalization of these results.

## INTRODUCTION:

Innovation in teaching processes is a scientific field in constant evolution, driven by rapid technological advances that demand a transformation of traditional methodologies. Educational technology has acquired a multifaceted dimension, redefining the role of the teacher, who shifts from being an omniscient figure to a mentor and guide. This change promotes a student-centered learning process, where active participation is fundamental for a deep understanding of subjects, the development of critical thinking, and the improvement of interactive skills. The use of innovative didactic tools, such as game-based learning, in educational technology has proven to be a valuable and well-established strategy for this purpose.

Despite the proven effectiveness of games in education, the existing literature, particularly on the use of "megagames" with role-playing elements, is limited, and the connection between these strategies and student participation in learning has not yet been explored in depth. Patsia et al. (2021) highlight that the quality of learning does not depend on the technology itself, but on its effective integration into teaching practices and activity design. This knowledge gap in the implementation and evaluation of innovative strategies underscores the need for research that directly links the adoption of new methodologies with concrete results in student engagement.

To address this need, the present research project focuses on the implementation of innovative didactic strategies, supported by the theoretical framework provided by authors such as Iannace, Bisanti, and Piazzoli (2024) and Patsia et al. (2021). This study seeks to fill the existing research niche through the application of active methodologies with the goal of increasing student participation by a minimum of 75% in the subjects covered. In this way, the aim is to validate the contribution of didactic innovation to educational quality, significantly contributing to the field of student-centered learning and quality education.

To do this, a first intervention will be carried out in a payroll calculation class taught at the "Eliel Aragón" library, where student participation in class will be observed. Following this, training will be given to the teacher on digital strategies in learning, including playful topics. After this, a class will be observed again, where the resulting variations from the training provided will be analyzed. Project Methodology The present study falls within a qualitative approach, whose main purpose was to contribute to the improvement of educational quality through the implementation of innovative didactic strategies aimed at increasing student participation. The research was developed in the City of Neuquén, specifically at the popular library "*Eliel Aragón*" located in the Mudon neighborhood, and focused on the payroll calculation course composed of ten students.

## PROJECT METHODOLOGY

The methodological design adopted was characterized by direct observation and intervention, which allowed for evaluating the impact of new pedagogical dynamics on participant

engagement. It concerned an already established course where, in August, a low level of participation was identified, since only four students actively intervened during classes. Following the initial observation, a pedagogical intervention directed at the responsible teacher proceeded. This consisted of brief training focused on the use of playful dynamics and educational technology tools, with a critical focus that promoted the contextualization of practices and placed the student at the center of the teaching and learning process. The proposal was based on the theoretical contributions of Iannace, Bisanti, and Piazzoli (2024), as well as Patsia et al. (2021), who highlight the value of didactic innovation in strengthening student commitment.

After a few weeks, in September, a second observation was carried out on the same group, in order to evaluate the effects of the intervention. In this instance, a significant increase in participation was confirmed: eight students, equivalent to 80% of the total, actively intervened during classes. Data analysis was performed by comparing the participation levels observed before and after the implementation of the didactic strategies. For this, the percentage increase was calculated, with the goal of verifying whether the previously defined goal of 75% active participation was reached. This procedure allowed for establishing a direct relationship between the adoption of innovative methodologies and the concrete increase in student involvement, which validates the contribution of pedagogical innovation to the improvement of educational quality.

## RESULTS

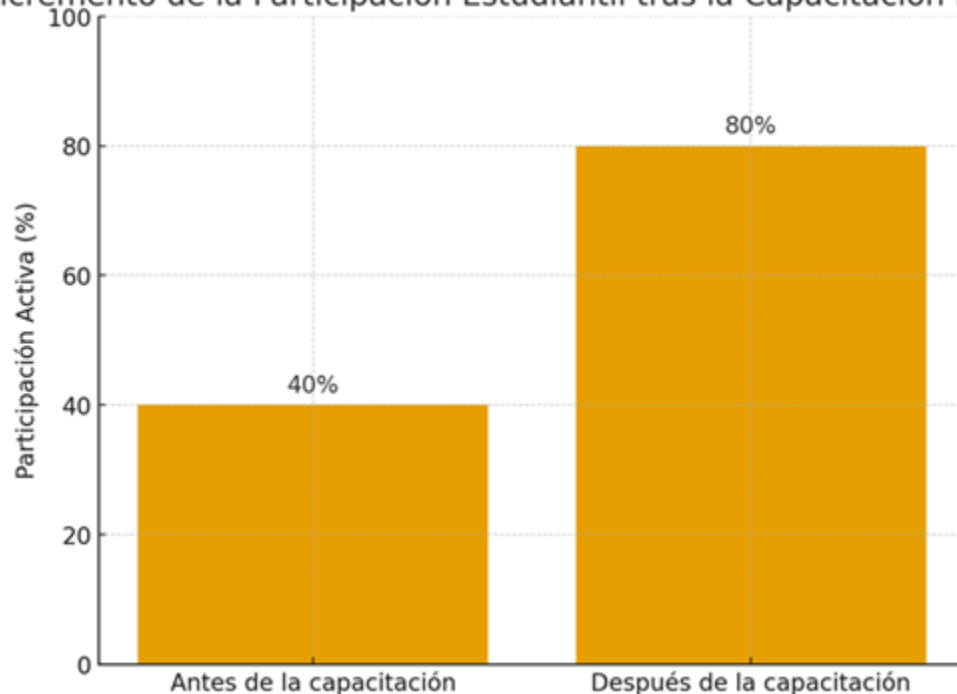
The present research project focused on the implementation of innovative didactic strategies with the goal of increasing student participation by a minimum of 75% in the subjects covered, seeking to fill an existing research niche regarding the direct link between active methodologies and student engagement. Innovation in teaching processes is a field in constant evolution, driven by technological advances that demanded the transformation of traditional methodologies. The study was framed within a qualitative approach and was developed in the payroll calculation course at the popular library “Eliel Aragón” in the City of Neuquén, composed of ten students.

The research adopted a methodological design of direct observation and intervention to evaluate the impact of new pedagogical dynamics on participant engagement. The initial observation, carried out in August, identified a low level of participation, given that only four students actively intervened during classes (40%). Following this finding, a pedagogical intervention directed at the responsible teacher proceeded, which consisted of brief training focused on the use of playful dynamics and educational technology tools, with a critical focus that promoted the contextualization of practices and placed the student at the center of the teaching and learning process. This proposal was based on the theoretical contributions of authors such as Iannace, Bisanti, and Piazzoli (2024), and Patsia et al. (2021), who highlighted the value of didactic innovation in strengthening student commitment.

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In detail, the class session subsequent to the teacher training, which was based on the implementation of digital technologies, "megagames," and the importance of student-centered practices, showed notable enthusiasm among the participants. The class developed differently, starting with the presentation of current news about the modification of the labor regime in the country. Students, seated in a semicircle, were invited to a generalized debate, critiquing the news and stressing different perspectives on the topic, with a generalized contribution, although three members had a more reduced participation. Subsequently, an *online* survey about the debate was implemented, which obtained 100% of the responses. During the last hour, a playful activity was developed in pairs, where each group assumed the role of the administrative area of different companies to perform payroll calculation (*liquidación de haberes*), using websites that simulated *online* calculations. This activity, which employed game-based learning—a valuable and well-established strategy in educational technology—generated a high level of interest and enthusiasm from all participants.

It turned out that the sequential didactic process implemented showed a significant evolution in teaching and learning practices. The articulation between critical debate, the use of digital tools, and playful activities promoted greater student involvement, favoring the development

of critical thinking and the practical application of content. Although technical limitations related to connectivity and the precariousness of the educational system (access to technological equipment, multifunctional classrooms) were identified, the results obtained reflected a positive advancement toward more meaningful and inclusive teaching, validating the contribution of didactic innovation to educational quality and contributing to the field of student-centered learning.

## **CONCLUSIONS**

The present research allowed for understanding the relevance of didactic innovation as a determining factor in improving student participation and, consequently, the quality of the educational process. The results obtained demonstrated that the application of pedagogical strategies based on the use of technological tools, playful activities, and active methodologies can generate a positive and measurable impact on student engagement, thus validating the importance of continuing research in this field.

The increase in the participation level, from 40% to 80%, evidenced that when the teacher assumes a role as a mediator and guide, and classes are designed from a participatory and contextualized approach, learning becomes more meaningful and motivating. Nevertheless, it is important to consider that the first observation was carried out at the beginning of the academic cycle, a time when students were still adapting to the course dynamics, which may have influenced their lower participation level. For the second observation, two months later, the group had already acquired greater confidence and familiarity with both the teacher and the environment, which possibly also contributed to the registered increase. Therefore, although the results reflect the positive effect of didactic innovation, they must be interpreted considering these contextual factors.

In summary, the study confirms that educational research is essential for rethinking teaching practices and for justifying the adoption of new strategies that respond to the current demands of the educational system. It is suggested that future research delve into the long-term sustainability of these methodologies, incorporating a broader sample of participants and considering the diversity of educational contexts. Furthermore, it would be valuable to analyze the impact of these innovations on other aspects of learning, such as content retention, group cooperation, and the development of critical thinking.

## **DISCUSSION**

The results obtained in this research reveal a significant change in student participation dynamics following the implementation of innovative didactic strategies. The increase from 40% to 80% in active student intervention indicates that the use of student-centered methodologies—particularly those that integrate technological resources, playful activities, and collaborative approaches—has a real and positive impact on engagement with learning. These findings signify that when the teacher assumes a role as a mediator and the educational process is designed based on interaction and contextualization, students not only participate more, but they become involved with greater critical sense and autonomy.

The importance of these results lies in confirming the pedagogical value of didactic innovation as a driver of educational quality. In a context where lack of motivation and passivity in the classroom are recurrent problems, the empirical evidence obtained here reinforces the need to transform traditional practices into others that encourage participation, creativity, and the appropriation of knowledge. This advancement is especially relevant in the field of technical and adult education, where the practical application of knowledge gains special relevance. Experience demonstrates that strategies such as game-based learning or the use of digital tools are not mere complements, but fundamental components for promoting meaningful and lasting learning.

However, the results also present limitations that must be recognized. Given that the study was conducted in a single small group of students and in a particular institutional context, it cannot be affirmed that the same effects would be reproduced generally in other educational settings. Likewise, contextual variables—such as the teacher-student relationship, familiarity with technology, or the timing within the academic cycle—may have influenced the observed participation levels. The data does not allow for precise measurement of the impact of each intervention component separately, nor does it determine whether the increase in participation is sustained in the long term.

Consequently, it is necessary to continue delving deeper into this line of research. Future practical actions should be oriented toward applying these strategies in different contexts and educational levels, expanding the sample and extending the observation period. It would be relevant to explore the role of teacher training in pedagogical innovation as a key factor in consolidating these transformations.