



ORIGINAL ARTICLE

Perception of impact of a classroom project integrating teaching, research and social projection as a teaching strategy

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ABSTRACT

Introduction: the integration of teaching, research, and social outreach as a pedagogical approach seeks to effectively articulate and connect teaching, knowledge generation, and academic participation in the community. This involves combining academic activities that promote research and the practical application of acquired knowledge, with the aim of contributing to the solution of specific problems in the community.

Objective: to explore students' perceptions of the impact of implementing a classroom project that integrates teaching, research, and social outreach as a teaching strategy.

Methods: an impact perception study was conducted using a questionnaire that inquired about the organizational and academic aspects of the application of this strategy as a teaching strategy in a group of 40 third-year students in the bachelor's degree program in Physical Therapy and Occupational Therapy.

Results: 97,5 % considered that the strategy contributed to the development of key research skills such as analysis, diagnosis, and problem solving from a professional perspective; in addition, 92,5 % stated that the strategy increased their interest in scientific activities.

Conclusions: the integrative classroom project was perceived as an effective strategy for strengthening research skills, scientific motivation, and professional development.

Keywords: Teaching; Research; Research Projects; Scientific Fields.

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INTRODUCTION

Since 1998, UNESCO proclaimed that the substantive functions of the University were teaching, research, and social projection; the integration of these functions is a pedagogical approach that seeks to effectively articulate and connect teaching, knowledge generation, and the academy's participation in the community.⁽¹⁾ This involves combining academic activities that foster research and the practical application of acquired knowledge, with the purpose of contributing to the solution of specific problems in the community.^(2,3)

The classroom project is therefore an integration strategy that allows effective interaction between teaching-research and social projection, which makes it a key tool in higher education, since it promotes the comprehensive training of students, fostering the development of transversal competencies and linkage with the community.⁽⁶⁾

Moreover, in the integrative classroom project, students not only study concepts in the classroom but also apply and test them in authentic situations, which facilitates a deeper and more lasting understanding, maximizing meaningful learning through experiential education when students have practical and real experiences that complement theoretical learning.

According to Antúnez,⁽⁸⁾ and Rodríguez Perazzo,⁽⁹⁾ project-based learning helps students learn, apply, and integrate knowledge in order to achieve the project's objectives, allowing the acquisition of meaningful learning of competencies, development of higher-order skills such as metacognition, creativity, and entrepreneurship, through the linkage of efforts toward the solution of social needs.

Cooperative learning is also a strategy that significantly increases the teamwork capacity required for research; this type of strategy favors the development of scientific research skills, enhances teamwork, increases social interactions and interpersonal skills.⁽¹⁰⁾

Some authors have obtained good results using a constructivist approach with strategies such as project-based learning, student-driven research, cooperative learning, formative assessment, and the use of information and communication technologies, among others.^(11,12,13)

Finally, collaboration among students and with different social actors (such as communities, organizations, etc.) is fundamental in this framework, since it promotes the exchange of ideas, constructive debate, and the co-construction of knowledge; thus enriching the learning experience, strengthening students' social and communicative skills, and favoring the development of transversal competencies, which are fundamental for students to successfully face contemporary professional and social challenges.⁽¹⁴⁾

Thus, the classroom project strategy for the integration of teaching, research, and social projection allows offering students a comprehensive, relevant, and transformative educational experience. In this sense, a classroom project integrating teaching, research, and social projection was planned and executed, aimed at third-year students of the bachelor's degree program in Physical Therapy and Occupational Therapy. Hence, the objective of this study is to explore the perception of impact of the application of this project in students in order to assess its effectiveness as a teaching strategy and reflect on its importance, benefits, and challenges.

The scope of comprehensive training is that of an educational practice centered on the human person and oriented to qualify their socialization so that the student can develop their capacity to autonomously avail themselves of the potential of their spirit within the framework of the society in which they live and can commit themselves with historical sense to its transformation. ⁽¹⁵⁾

METHODS

A quantitative cross-sectional study was conducted to explore the perception of impact of the application of a classroom project that integrates teaching, research, and social projection as a teaching strategy in a group of 40 third-year students of the bachelor's degree program in Physical Therapy and Occupational Therapy at the Universidad de El Salvador.

The implementation of the classroom project was carried out systematically and in a planned manner based on the educational objectives established in the module program; accordingly, an action plan was prepared that included a schedule of activities with clear and specific goals, ordered in execution phases in which the specific actions expected to be carried out by the group of students and teachers were determined.

As shown in Figure 1, these phases included direction, diagnosis, and intervention.

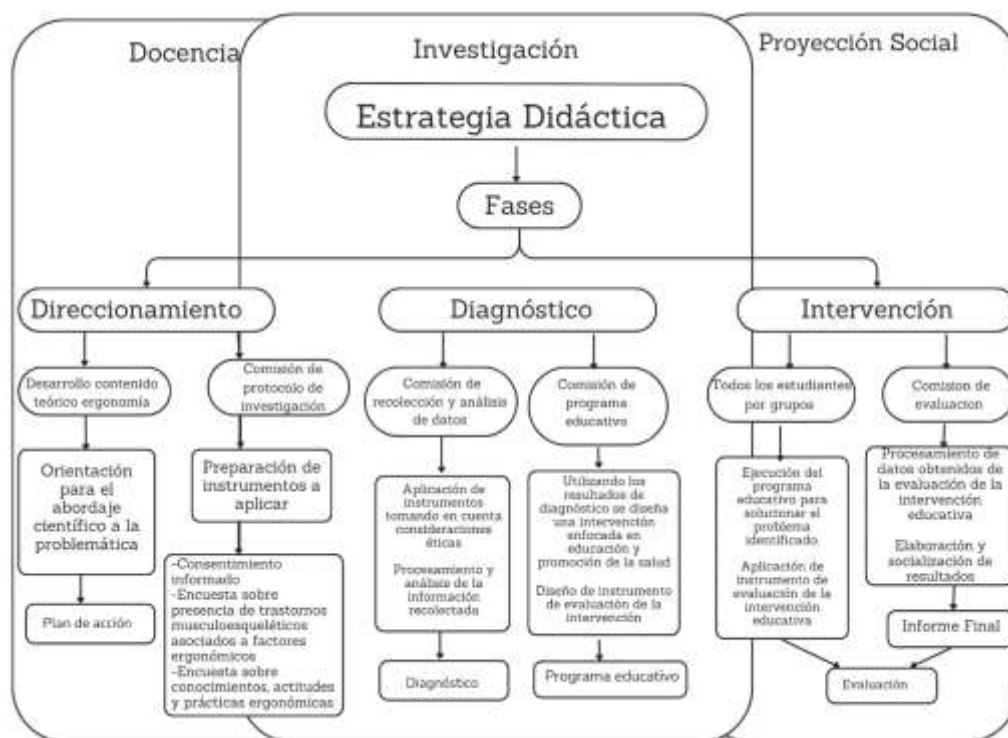


Fig. 1 Teaching strategy: classroom project integrating teaching, research, and social projection.

In the direction phase, the teaching-learning process was carried out in the classroom, coordination with the company in which the project was conducted, the organization of the group of students into work commissions, and the preparation of the research protocol based on the theory of participatory ergonomics.

In the diagnosis phase, information was collected, whose results led to the intervention proposal and the design of a health education program; this program was executed in the intervention phase, in which an impact assessment instrument was also applied. It should be emphasized that each phase was carried out in a manner guided by the teaching group through a sequential process of evaluation and feedback on results and products.

Subsequently, a survey was applied to the group of students inquiring about the organizational and academic aspects of the use of this strategy as a teaching method and about its influence on student learning.

Regarding the organizational aspects related to the classroom project teaching strategy, the clarity and precision of objectives and activities, teacher guidance and feedback, the relationship between the project and the corresponding study program, as well as its contribution to the achievement of learning and its application in professional practice, were explored.

As for academic aspects, students' perception of the contribution of the classroom project teaching strategy to the development of their research capacities was explored, as well as whether this strategy managed to increase their motivation and interest in carrying out scientific activities, and their perception of the importance of scientific research for their professional and personal development.

The questionnaire was answered through a Likert scale with a gradient from 1 to 4, in which 1 corresponded to a response of totally disagree, 2 disagree, 3 agree, 4 totally agree. In addition, a space was left at the end for the student to express their general comments about the pedagogical strategy used. Results were analyzed by means of descriptive statistics and Spearman correlation in the Jamovi 2.3.28 program.

RESULTS

The perception of the importance of scientific research for professional and personal development was analyzed; 60 % of participants considered it "very important" and 37,5 % "important," while only 2,5 % perceived it as "slightly important."

In the organizational dimension of the teaching strategy, Figure 2 shows high ratings regarding the clarity and precision of objectives and activities, the alignment of the project with the module content, and teacher guidance. 100 % of respondents indicated being "agree" or "totally agree" that the project's objectives were clear and precise and were aligned with the activities. Likewise, 95 % indicated that teacher guidance and feedback were timely and precise.

67,5 % of students stated being "totally agree" and 32,5 % "agree" that the strategy was coherent with the theoretical content of the module. 100 % recognized that the project allowed evidencing the application of theoretical contents in professional practice. The organization of work by commissions obtained an affirmative rating from 95 % of participants.

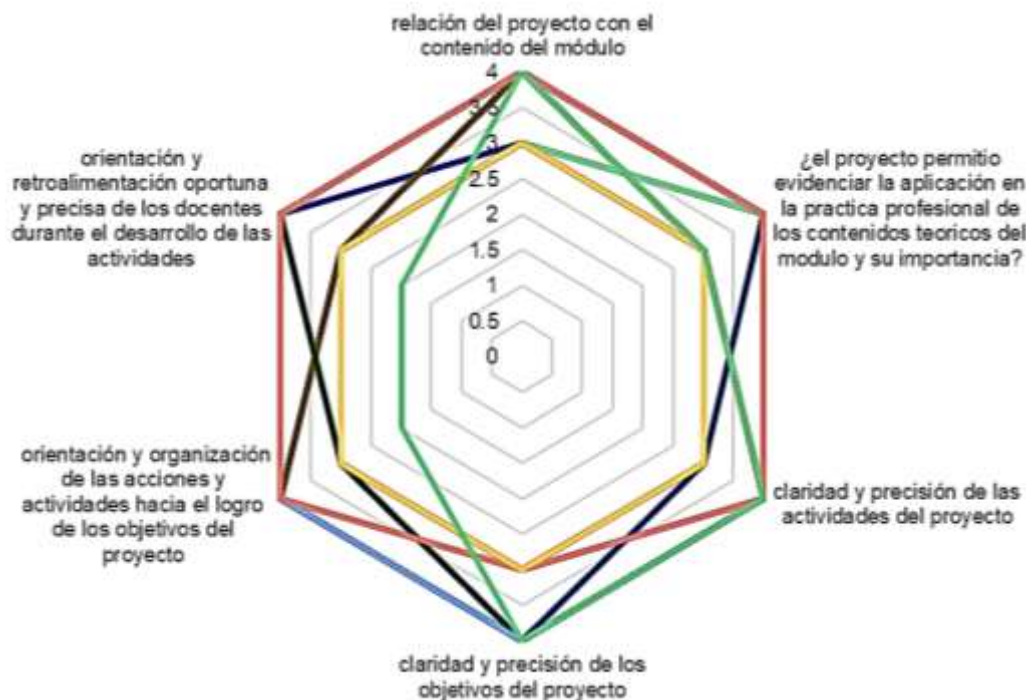


Fig. 2 Organizational dimension of the classroom project teaching strategy as a teaching method.

In relation to the development of research capacities, Figure 3 shows favorable ratings. 97,5 % of students indicated that the strategy contributed to the development of capacities such as observation, analysis, problem diagnosis, and proposal of solutions. Similarly, 95 % affirmed that the experience strengthened argumentation, grounding, analysis, and synthesis competencies. In addition, 92,5 % reported feeling motivated to carry out scientific activities oriented to the profession.

Finally, regarding the perception of scientific research as a formative component, 60 % rated it as "very important" and 37,5 % as "important."



Fig. 3 Academic dimension of the classroom project teaching strategy as a teaching method.

Finally, the correlation analysis showed a high positive association between the dimensions ($p = 0,77$), which indicates that, in the sample studied, higher scores in the assessment of the organizational aspects of the classroom project consistently corresponded to higher scores in the assessment of its academic contributions. Regarding the responses to the open question, positive assessments of the experience developed predominate, highlighting the usefulness of the project and teacher accompaniment as a favorable element during the process. In addition, some participants expressed general satisfaction with the development of the project.

DISCUSSION

The results obtained show that providing students with the opportunity to learn through real experiences has a positive impact. The strategy of integrating teaching, research, and social projection applied in this classroom project allowed connecting the classroom with reality, and transforming theoretical contents into useful tools to understand and act in the real context.

Projects with direct community impact increase student motivation, enriching the learning process and strengthening their sense of professional responsibility. As stated by UNESCO,⁽¹⁾ integrating these three substantive functions of the university —teaching, research, and social projection— is not only an institutional aspiration but a pedagogical practice that can transform the way students learn and relate to their environment.

In this experience, students were able to apply their knowledge to analyze real problems, propose solutions, reflect on their practice, and, above all, understand the value of what they learn when this knowledge can be useful to others. This confirms what was pointed out by authors such as Maldonado-Rojas et al. and Martínez Valdés, who highlight that the classroom project not only facilitates learning but also makes it more meaningful, by bringing it closer to reality and fostering formative research.^(4,5)

Collaborative work between students and teachers allowed building a participatory learning environment; this type of interaction strengthens not only academic skills but also social and communicative ones, essential for facing professional challenges. Strategies such as cooperative learning, critical reflection, and real problem-solving allow students to develop competencies that go beyond the classroom.⁽¹⁴⁾

In addition, the project developed generated intervention proposals based on scientific evidence that were put into practice through social projection actions. Thus, the work of students and teachers not only had a formative impact but also a social one, showing that the university can and should actively contribute to the solution of real problems.

This experience confirms that learning becomes deeper and more lasting when it is built from action, reflection, and experience. As proposed by Schön and Biggs, learning also implies stopping to think about what is done, how it is done, and for what purpose.^(7,11) In this sense, this strategy allowed students not only to apply knowledge but also to become aware of the value of their decisions, their role as future professionals, and the impact they can generate in their environment.

Areas for improvement were also identified, such as the need to strengthen the evaluation method used, as well as to diversify teaching resources and extend the times allocated for feedback. These aspects are key elements to take into account, especially for those students who face greater challenges in their learning process.

It should be considered that the sample consisted solely of students from the same module, which restricts the generalization of results, and the exclusive use of a perception questionnaire may introduce biases in responses. In addition, the findings derive from a single pedagogical experience, so they may be influenced by specific factors of the project or group dynamics.

Therefore, it is advisable to expand the sample by replicating the strategy in other courses or cohorts, as well as incorporating multiple sources of information to strengthen the validity of the results. Finally, it is pertinent to expand feedback spaces and continue promoting classroom projects linked to the community, exploring their impact on professional competencies.

CONCLUSIONS

The integrative classroom project was perceived as an effective strategy for strengthening research competencies, scientific motivation, and the practical application of knowledge. The combination of teaching, research, and social projection has allowed deeper and more meaningful learning for students, who have managed to apply the knowledge acquired in real situations. In this sense, it is fundamental to continue promoting and implementing this type of strategy in educational institutions, since it contributes significantly to the training of professionals committed to society and capable of addressing current challenges. In addition, the strategy has proven beneficial for the other actors involved, since it allows teachers to articulate teaching with research and social projection, guaranteeing maximum benefit for students. It is also beneficial for society, as it establishes alliances and collaborations with external institutions and actors. Finally, it is recommended to carry out constant monitoring and evaluation of the strategy, in order to identify areas for improvement and make necessary adjustments to optimize results.

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Conflict of interests

The authors declare that no conflict of interests exists.

Authors' contributions

JYLV: Conceptualization; Research; Methodology; Formal analysis; Writing – original draft; Writing – review and editing.

WEME: Conceptualization; Project administration; Research; Supervision; Writing – original draft; Writing – review and editing.

MGG: Research; Methodology; Writing – original draft; Writing – review and editing.

Declaration on the use of artificial intelligence

The authors declare that they have not used generative artificial intelligence technologies or AI-assisted tools during the research or writing of this article.

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