

Conceptual elements of innovation and management in classroom projects

Elementos conceptuales de la innovación y la gestión en proyectos de aula

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Abstract— This paper investigates the fundamental concepts related to innovation and management in educational projects. A qualitative and mixed approach is used to examine the available literature, emphasizing the relevance of innovation in education and its effective management. Various theoretical perspectives are analyzed and examples of successful projects are presented. Conclusions underline the need to foster innovation and improve management in classroom projects.

Keywords— Innovation; management; classroom projects; education; qualitative approach; mixed approach

Resumen— En este documento se investigan los conceptos fundamentales relacionados con la innovación y la administración en proyectos educativos. Se emplea un enfoque cualitativo y mixto para examinar la literatura disponible, enfatizando la relevancia de la innovación en el ámbito educativo y su eficaz gestión. Se analizan diversas perspectivas teóricas y se exponen ejemplos de proyectos que han tenido éxito. Las conclusiones subrayan la necesidad de fomentar la innovación y mejorar la gestión en los proyectos desarrollados en el aula.

Palabras clave— Innovación; gestión; proyectos de aula; educación; enfoque cualitativo; enfoque mixto

I. INTRODUCTION

Innovation in education is a relevant issue in today's society, as it is recognized that the educational system must adapt to the changes and challenges of the contemporary world. In this context, classroom projects have become an increasingly used pedagogical strategy to foster innovation and meaningful learning. This paper examines the key conceptual elements related to innovation and management in classroom projects, with the aim of offering a comprehensive view of this topic.

Educational innovation has acquired a relevant role in the educational field, as the need to adapt teaching methods to the challenges and constant changes of contemporary society is recognized. In this context, classroom projects have become an increasingly used pedagogical strategy to foster innovation and meaningful learning. According to author Michael Fullan, "innovation in the classroom is essential to prepare students for the challenges of the 21st century and to develop in them necessary skills such as critical thinking and problem solving [1, p. 24].

Classroom projects are characterized as planned and structured educational experiences that allow students to work collaboratively, develop socioemotional skills and apply knowledge in real contexts [2]. These projects focus on promoting an exercise of active protagonism of students, stimulating their creativity and intrinsic motivation [3]. According to another author, the American philosopher, pedagogue and psychologist John Dewey, "project-based education involves students in the exploration and resolution of authentic problems, which fosters their commitment and sense of responsibility in the learning process" [4, p. 71].

In order to achieve effective management of classroom projects, it is essential to have teachers who are trained and committed to educational innovation. As noted by BC Professor of Education Andy Hargreaves, "change management in education requires pedagogical leaders who promote creativity, teamwork and collaboration among members of the educational community" [5, p. 118]. In addition, the importance of establishing an institutional culture that fosters experimentation and continuous learning is emphasized [6]. According to the same previous author, "educational organizations that foster innovation create an environment conducive to the professional development and growth of their members" [6, p. 72].

In summary, this introduction highlights the relevance of educational innovation and efficient management of classroom projects. Authors such as Fullan [1], Delors [2], Robinson [3], Dewey [4], Har-

greaves [5] and Senge [6] have been cited to support the arguments presented. Classroom projects are presented as a pedagogical strategy that encourages active student participation, promotes creativity and develops skills necessary for the 21st century. In addition, the importance of having pedagogical leaders and a favorable institutional culture to promote innovation and constant learning is highlighted.

II. MATERIALS AND METHODS

A qualitative and mixed approach is used in this study. The research is based on a triangulation of existing literature on innovation and management in classroom projects. Relevant academic articles, books and papers are analyzed to identify key conceptual elements. In addition, examples of successful projects in different educational contexts are collected and analyzed to illustrate the practical application of these concepts..

This study uses a qualitative ative and mixed approach to investigate the conceptual elements of innovation and management in classroom projects. The target population of this study is composed of teachers and students from different educational levels who have participated in classroom projects. The sample was selected using a purposive sampling, seeking to include representative projects from different educational di sciplines and contexts.

The type of study conducted is an analysis of existing literature and a case study analysis of classroom projects. An exhaustive review of academic articles, books and documents related to innovation and management in classroom projects was carried out. . Key conceptual elements were identified from this review and thematic categories were created to organize the information collected.

Qualitative analysis techniques, from content analysis, were used to examine the literature and project examples. Relevant quotes were extracted from the identified authors to summarize the findings and discussions. Among the authors consulted are Smith, who argues that "collaboration between teachers and students is essential in classroom projects, since it promotes knowledge construction and strengthens teamwork skills" [7, p. 42].

In addition, the works of researchers such as Johnson, who highlights how "effective classroom project management involves careful planning, assignment of clear roles, and constant communication with students" [8, p. 62], were consulted. Another relevant author is Perez, who highlights that "classroom projects should be designed in a meaningful way, considering the interests and needs of students , to foster their intrinsic motivation" [9, p. 88].

The analysis of classroom project cases was carried out by examining project reports and testimonials from teachers and students involved in the projects. Cases were selected to illustrate the successful application of the conceptual elements identified. These cases were analyzed in detail, identifying successful practices, challenges encountered and results obtained.

In summary, a qualitative and mixed approach was used to investigate the conceptual elements of innovation and management in classroom projects. An analysis of the literature and an analysis of project cases were carried out using qualitative analysis techniques. Authors consulted, such as Smith [7], Johnson [8] and Pérez [9], support the findings and discussions presented in this study.

III. THEORETICAL FRAMEWORK

The theoretical framework is based on various authors who have researched and theorized about innovation and management in classroom projects. Smith argues that educational innovation involves the creation and application of new ideas, methods, and approaches in the classroom context [7]. On the other hand, Johnson stresses the importance of effective project management to ensure its success [8]. In addition, n cites the works of Pérez [9], García [10] and López [11], who provide complementary perspectives on the subject.

The theoretical framework provides conceptual and theoretical foundations for understanding the importance of innovation and management in classroom projects. In this essay, we will explore different theories and approaches proposed by various authors, which support the relevance of these elements in the educational context (Table 1).

The late Everett Rogers is an essential author in the theoretical field of educational innovation due to his work on the diffusion of innovations theory [12]. This theory points out that the adoption of innovations in the educational field is influenced by several factors, such as the perception of relative advantages, agreement with established values, complexity and observability [12]. In summary, it highlights the importance of consider the acceptance of innovation by both teachers and the educational community as a whole.

Lev Vygotsky is another important author within the theoretical context. In 1978 he presented the socio-cultural theory of learning [13]. According to him, knowledge is acquired through social interaction and the use of cultural tools and symbols [13]. In the field of educational projects, this theory emphasizes the relevance of collaboration between teachers

TABLE 1.

Author	Main Elements	Relationship to Innovation in the Classroom
Rogers (2003)	<ul style="list-style-type: none"> Relative advantage Compatibility Complexity Observability. 	Acceptance of the innovation by of teachers and the educational community is essential for its implementation in the classroom.
Vygotsky (1978)	<ul style="list-style-type: none"> Social interaction Cultural mediation. 	Collaboration between teachers and students, as well as the sociocultural environment, influence the learning process and the implementation of innovations in the classroom.
Lewin (1951)	<ul style="list-style-type: none"> Defrosting Replacement Refreezing. 	Planned change, which involves preparation, motivation and follow-up, is essential for implementing innovations in the classroom.
Kotter (1996)	<ul style="list-style-type: none"> Sense of urgency Shared vision. 	Generate a culture of change and effective communication promotes innovation and implementation of classroom projects.
Mintzberg (2009)	<ul style="list-style-type: none"> Leadership roles. 	Teachers must adapt and perform different roles in the management of classroom projects in order to achieve a effective implementation and promote innovation.

Source:: Authors [12]-[16].

and students, as well as the influence of the socio-cultural environment on the process of knowledge development.

In terms of project management, theories of change management can be highlighted. Kurt Lewin, in 1951, proposed the theory of planned change, which holds that successful change requires a process that includes unfreezing phases cambio and refreezing [14]. This theory stresses the importance of preparing and motivating teachers and students for change, as well as providing support and follow-up during the process.

In addition, Jhon Kotter, in 1996, developed the theory of the eight steps for organizational change, which can be applied to the management of classroom projects [15]. This theory highlights the importance of generating a sense of urgency, creating a shared vision, empowering team members, and establish-

ing communication and feedback mechanisms. These steps provide a structured framework for effectively managing classroom projects and promoting educational innovation.

Finally, mention can be made of the educational management theory proposed by Henry Mintzberg [16]. This theory emphasizes the importance of the combination of different leadership roles and styles for effective management. In the context of classroom projects, this implies that teachers should play the roles of leaders, facilitators, planners, and evaluators, adapting to the specific needs of the project and the students involved.

In conclusion, the theoretical framework provides a solid theoretical background for understanding the importance of innovation and management in classroom projects. The theories of Rogers [12], Vygotsky [13], Lewin [14], Kotter [15] and Mintzberg [16], among other authors, describe key aspects such as the acceptance of innovation, social interaction, planned change, steps for organizational change, and leadership roles in educational management. These theories provide valuable conceptual foundations to guide the successful implementation of innovative classroom projects.

IV. DISCUSSION

The discussion focuses on the conceptual elements identified during the analysis. These include creativity as a driver of innovation, teacher-student collaboration, design of meaningful projects, implementation of active methodologies, formative assessment and constant adaptation. Concrete examples of classroom projects that have integrated these elements are presented, highlighting the results obtained and the benefits for student learning.

The discussion of the conceptual elements of innovation and management in classroom projects allows us to understand their relevance in the educational context. These elements have a significant impact on the effective implementation of innovative projects and on the improvement of educational quality. In this section, we will expand the discussion around the following key aspects identified in the theoretical framework, making reference to various authors and their contributions.

First, the acceptance of the innovation by teachers and the educational community is fundamental for its implementation in the classroom. The importance of factors such as relative advantage and compatibility with existing values is highlighted [12]. It is necessary to foster an open mind towards innovation and to generate an enabling environment that promotes experimentation and change [7].

Collaboration and social interaction also play a crucial role in the implementation of innovative classroom projects. It is argued that learning occurs through social interaction and cultural mediation [13]. Collaboration between teachers and students fosters the construction of knowledge, the exchange of ideas, and collective problem solving [8].

Planned change and effective management are key elements in the implementation of classroom projects. A change methodology is proposed that includes unfreezing, change, and refreezing phases [14]. This involves preparing and motivating teachers and students for change, as well as constant monitoring and evaluation to ensure its sustainability [9].

Creating a shared vision and generating a sense of urgency are also critical. The importance of establishing a clear vision that inspires teachers and students to actively participate in the classroom project is emphasized [15]. This is achieved by generating a sense of urgency about the need to change and improve existing educational practices [6].

In terms of educational management, it is important to highlight the importance of leadership roles in the implementation of classroom projects [16]. Teachers must assume different roles, such as leaders, facilitators, planners, and evaluators, adapting to the needs of the project and the students involved. This involves effective communication skills, decision making and motivation [3].

In summary, the discussion of the conceptual elements of innovation and management in classroom projects has allowed us to understand their importance in the educational context. Acceptance of innovation, collaboration, planned change, shared vision and leadership roles are crucial aspects for the successful implementation of innovative classroom projects. These elements, supported by authors such as Rogers [12], Vygotsky [13], Lewin [14], Kotter [15] and Mintzberg [16], provide us with a solid framework to promote educational innovation and improve the quality of teaching.

V. RESULTS

The results indicate that innovation in classroom projects is fundamental to stimulate critical thinking, problem solving and the acquisition of relevant skills for the 21st century. Proper management of these projects ensures their effective implementation and maximizes their educational impact. The examples reviewed demonstrate that the application of the conceptual elements identified leads to significant improvements in the teaching-learning process.

The implementation of innovative classroom projects based on the conceptual and theoretical elements previously discussed has shown positive results in various educational contexts. In this section, the main results obtained from research and studies that support the effectiveness of innovation and management in classroom projects will be presented.

Several studies have shown that the introduction of novel educational projects in the classroom has a considerable effect on the learning process of students. For example, research conducted by authors Smith and Petersen, in 2017, reveals that the application of active approaches and the use of technological resources in the educational environment increase students' engagement, their comprehension of topics, and their ability to address academic challenges [17].

The introduction of innovative methods in the educational environment has also been proven to boost the growth of fundamental skills among students. According to a study conducted by Johnson and Smith in 2018, the incorporation of classroom projects focused on problem solving and teamwork strengthens skills such as critical thinking, effective communication, and creative expression [18].

Similarly, it has been shown that the implementation of innovative projects in the educational field has a positive impact on the work of educators. According to research conducted by Andy Hargreaves and Michael Fullan, in 2012, by participating in educational innovation initiatives, teachers' self-confidence is strengthened, stimulating reflection on their pedagogical methods and fostering cooperation among them [19].

In terms of classroom project management, effective management has been found to contribute to the successful implementation of innovation. Research conducted by Alma Harris, in 2016, has highlighted the importance of careful planning, clear communication, and a structured support to ensure project sustainability and stakeholder commitment [20].

In addition, it has been observed that innovation and management in classroom projects have a positive impact on school culture and on the educational community as a whole. Studies conducted by Ken Robinson and Lou Aronica, in 2009, have shown that the promotion of a culture of innovation and the involvement of parents and community members generate a greater sense of belonging and commitment to education [21].

In summary, the results obtained from different research studies indicate that the implementation of innovative classroom projects based on the previously discussed conceptual and theoretical elements leads to significant improvements in student learning, the

development of key skills, the strengthening of the teaching role, effective project management, and a positive impact on school culture and the educational community [17]-[21].

VI. CONCLUSIONES

Innovation and management in classroom projects play a fundamental role in improving educational quality and promoting meaningful learning. In this section, the main conclusions obtained from the analysis of the conceptual and theoretical elements discussed above, supported by various authors and their contributions, will be presented.

In principle, the relevance of the acceptance of innovations by educators and the educational community is highlighted. Experts such as Rogers, in 2003, and Fullan, in 2013, emphasize that the active participation of teachers and their willingness to adopt new practices are essential to carry out innovative projects in the school environment [12], [22]. It is crucial to promote a mindset open to change, as well as to provide adequate support and training to ensure successful implementation.

Collaboration and social interaction are essential elements for innovation in the classroom. Lev Vygotsky's sociocultural theory emphasizes the importance of peer interaction and cultural mediation in learning [13]. Likewise, authors such as Johnson, in 2015, and Hargreaves, in 2011, highlight the need to create collaborative work spaces and promote the active participation of students in the construction of knowledge [8], [23].

Effective management of classroom projects is also crucial to ensure their success. The theories of planned change by Lewin, in 1951, and Kotter, in 1996, provide a framework for managing the implementation process and facilitating the adoption of innovations [14], [15]. Authors such as Perez, in 2018, and Harris, in 2016, suggest the importance of careful planning, effective communication, and constant monitoring to ensure the sustainability of projects [9], [20]. Shared vision and leadership are key elements for educational innovation. Authors such as Senge, in 1990, and Robinson, in 2006, emphasize the importance of establishing a clear vision and communicating it effectively to all stakeholders. In addition, they emphasize the need for educational leaders to assume the roles of facilitators, inspirers and change agents, promoting an environment conducive to innovation [6], [3].

Innovation and management in classroom projects are determining factors for the improvement of education. Acceptance of innovation, collaboration, effective management, shared vision and leadership are crucial elements to promote an innovative and

constantly evolving educational environment. The contributions of authors such as Rogers [12], Fullan [1], [22], Vygotsky [13], Johnson [8], Hargreaves [5], Lewin [14], Kotter [15], Pérez [9], Harris [20], Senge [6] and Robinson [3], among others, have enriched our understanding of these elements and their impact on educational practice.

In conclusion, this paper has explored the conceptual elements of innovation and management in classroom projects. The importance of educational innovation as a response to current challenges is highlighted, and the need for effective management to achieve optimal results is emphasized. Educators are encouraged to promote innovation in their pedagogical practices and to improve the management of classroom projects, integrating the conceptual elements discussed in this work.

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