

Towards meaningful learning in basic education: application of inclusive strategies in the sixth grade

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ABSTRACT

This study explores the implementation of inclusive pedagogical strategies in basic education to promote meaningful learning. Using a mixed-methodology approach, it examines the perceptions of teachers and students and the impact of these strategies on student performance and participation. The results associate the application of inclusive methods with increased understanding and knowledge retention, promoting equality and diversity. The article highlights the importance of adapting educational practices to meet the needs of students, underscoring the role of teachers in creating an inclusive and effective learning environment.

Keywords: Meaningful Learning; Inclusive Education; Pedagogical Strategies; Basic General Education; Effective Teaching

Introduction

Meaningful learning in basic education is fundamental for the comprehensive development of students, as it focuses on the deep understanding of content and the ability to apply it in different contexts, beyond mere memorization. This pedagogical approach,

promoted by Ausubel (1983); Baque & Portilla (2021); Moreira (2017) and other educational theorists, is based on the idea that learning is more effective when students can relate new information to previous knowledge and experiences.

The role of inclusive techniques is valued by Cevallos (2021) which emphasizes the importance of inclusion for the integral development of the student, highlighting the need for a harmonious and respectful environment. The research points out the challenges in teacher training and the integration of inclusive techniques, suggesting the creation of didactic guides and continuous training as solutions.

Inclusive techniques play a crucial role in the development of meaningful learning, Mejia (2022) highlights that the personalization of learning is essential in an inclusive classroom, as it allows adapting teaching to the individual needs of each student. This adaptation takes into account differences in abilities and learning styles, as well as interests and cultural backgrounds, which facilitates more meaningful learning.

In the present study, participatory research is proposed, involving teachers, students and parents to obtain a holistic understanding, emphasizing action research as a participatory methodology that involves educators in the research process. In the context of meaningful learning, as a teacher-researcher, new inclusive pedagogical strategies will be implemented and evaluated in the classroom in order to subsequently reflect and report on their effectiveness.

The objective of the research carried out for this study has been to clarify the impact of the implementation of inclusive pedagogical strategies in fostering meaningful learning among students in the sixth year of general basic education (EGB).

Development

In Ecuador, there has been a growing interest in improving the quality of basic education through meaningful learning approaches. Various studies have explored methodological strategies to strengthen meaningful learning, especially in reading, highlighting the importance of developing cognitive skills in GBS students. The recent trend in education points to a growing focus on educational inclusion, seeking to ensure that all students,

regardless of their abilities or backgrounds, have access to meaningful learning opportunities.

Posligua & Avila's (2022) research on methodological strategies to strengthen reading is a clear example of how pedagogical approaches can improve essential cognitive skills. Similarly, in the approach to inclusion and meaningful learning today, the role of technology in inclusive education has been significant (Badilla *et al.*, 2022) have highlighted how technology can help personalize learning and make it more accessible to all.

Regarding pedagogical strategies for educational inclusion, the research of Cevallos (2021) is significant, as it provides a framework for selecting pedagogical strategies aimed at inclusion, demonstrating how these strategies can foster meaningful learning in an environment of motivation and respect for diversity.

The importance of teacher training is unavoidable to meet the need for adequate preparation and tools for inclusion, a crucial aspect highlighted by Murillo *et al.* (2020), who state that "all inclusive practice has two main characteristics: 1) it works with diverse groups and 2) it is supported by other professionals and appropriate material resources, with the aim of benefiting students during their learning process" (p. 4).

Preparing students for the challenges of the 21st century, in an inclusive perspective, contains skills such as critical thinking, creativity, and collaboration; Quesada (2021) has explored how these skills can be integrated into educational practice.

Mejia's (2022) vision highlights the importance of inclusive and emergent methodologies, especially in the age of information technology, to ensure that all students receive a quality education, which articulates with the experiences of inclusion in diverse contexts argued by this author when he asserts that "Teachers have the obligation to reflect on their practices and methodologies, in order to verify whether they are promoting quality teaching that reaches all students, being necessary to make significant changes to achieve inclusion" (p. 134).

The study developed by Miranda (2022) highlights the use of tools such as concept maps and diagrams to guide the learning process towards autonomy and meaningfulness. Teachers' experience in inclusive strategies offers valuable insight into how the strategies they employ can contribute to effective inclusion in educational environments, in this sense inclusive techniques are fundamental to promote equality and equity in education.

The learning environment created by inclusive techniques is another vital aspect, as a safe and welcoming environment promotes tolerance, mutual respect and understanding, essential elements for meaningful learning. Inclusive techniques help develop aspects such as empathy, collaboration and conflict resolution, crucial skills for success in life. Motivation and participation also improve through inclusive practices.

The study adopted a mixed methodological approach to examine the effectiveness of inclusive pedagogical strategies in promoting meaningful learning. The study population was the 37 sixth grade students of the Cotopaxi Sports Federation Educational Unit. In addition, the 3 teachers of this year were included. The inclusion criteria for the students were based on voluntary participation and informed consent of their parents or guardians.

Likert-scale questionnaires were designed for students and teachers to assess the perception and impact of inclusive strategies on learning and to identify specific areas in need of improvement by implementing these strategies; interviews were conducted to explore experiences, perceptions and examples of the impact of inclusive strategies on learning.

Observations were conducted to document the implementation of these strategies and the interaction between students and teachers. The implementation of inclusive strategies in the Cotopaxi Sports Federation Educational Unit was explored, with a focus on sixth grade students. The results presented in Table 1, Table 2, Table 3, Table 4, Table 5, Table 6 and Table 7 reveal a complex intersection of aspirations and implementations regarding the need to strengthen these strategies to promote meaningful learning.

Table 1: Opportunities and access to resources

I have access to learning resources that fit the way I learn		
Category	Frequency	Percentage
Strongly disagree	7	18,92%
In disagreement	11	29,73%
Neither agree nor disagree	10	27,03%
Agree	6	16,21%
Totally agree	3	8,11%

Source: Self elaboration

The students' perception of opportunities and access to resources for learning shows that 29.73% express disagreement with respect to this aspect. Slightly more than 27.03% of

the respondents do not show a clear inclination with the statement. About 18.92% express complete disagreement with the opportunities and access to resources and 16.21% indicate their agreement with the statement, while 8.11% strongly agree.

Table 2: Motivation and Participation

I feel motivated to actively participate in class activities.		
Category	Frequency	Percentage
Strongly disagree	4	10,81%
In disagreement	8	21,62%
Neither agree nor disagree	13	35,14%
Agree	9	24,32%
Totally agree	3	8,11%

Source: Self elaboration

A majority, represented by 35.14% of the students, does not show a clear inclination towards agreement or disagreement regarding motivation and participation. On the other hand, 24.32% indicate their agreement with the subject matter, while about 21.62% express disagreement. In addition, about 10.81% of the students completely disagree with motivation and participation, while about 8.11% show complete agreement with these.

Table 3: Teaching support and teaching strategies

I receive the necessary support from my teachers to understand the topics being taught.		
Category	Frequency	Percentage
Strongly disagree	5	13,51%
In disagreement	9	24,32%
Neither agree nor disagree	13	35,14%
Agree	8	21,62%
Totally agree	2	5,41%

Source: Self elaboration

More than 35.14% of the students do not show a defined position with respect to teaching strategies and teacher support. About 24.32% indicate disagreement with these strategies, while 21.62% express agreement with them. Approximately 13.51% show complete

disagreement with the teaching strategies and teaching support, and about 5.41% agree with this educational approach.

Table 4: Facilitation of learning and teaching strategies

The teaching strategies used in class make it easier for me to learn.		
Category	Frequency	Percentage
Strongly disagree	<u>5</u>	<u>13,51%</u>
In disagreement	<u>10</u>	<u>27,03%</u>
Neither agree nor disagree	<u>15</u>	<u>40,54%</u>
Agree	<u>5</u>	<u>13,51%</u>
Totally agree	<u>2</u>	<u>5,41%</u>

Source: Self elaboration

40.54% of the respondents reveal a neutral position towards the effectiveness of the teaching strategies on their learning, indicating a lack of significant impact of the strategies in this regard. On the other hand, 40.54% (summing totally disagree and disagree), express disagreement with the effectiveness of these strategies, suggesting that they may not be aligned with their needs or learning styles. Only 18.92% (summing agree and strongly agree) feel that the strategies are effective, implying a need for revision and potential adaptation of these strategies to increase their relevance and effectiveness.

Tabla 5: Inclusión y valoración entornos de aprendizaje

I feel included and valued in my learning environment.		
Category	Frequency	Percentage
Strongly disagree	15	40,54%
In disagreement	10	27,03%
Neither agree nor disagree	5	13,51%
Agree	2	5,41%
Totally agree	5	13,51%

Source: Self elaboration

These data indicate that there is a predominant perception of a lack of inclusion and valuing within the learning environment, with 67.57% of respondents expressing disagreement (summing Totally Disagree and Disagree) with the idea of feeling included and valued. This suggests that there are significant aspects of the educational environment that need to be reviewed and improved to create a more welcoming and respectful space for all students. The fact that only 18.92% feel that their learning environment is fully inclusive underscores the importance of fostering a more positive and supportive environment.

Table 6: Pace of class work and appropriateness

of learning level

I feel that the pace of class work is appropriate for my level of learning.		
Category	Frequency	Percentage
Strongly disagree	5	13,51%
In disagreement	10	27,03%
Neither agree nor disagree	15	40,54%
Agree	5	13,51%
Totally agree	2	5,41%

Source: Self elaboration

40.54% of the respondents have discordance of the pace of class work, which could indicate a variety of situations, from passive acceptance to a division of opinions on whether the pace is adequate. However, 40.54% perceive the pace as inadequate, suggesting that the pace is not well adjusted to their learning needs. Only a minority (18.92% adding together agree and strongly agree) feel that the pace is adequate, but stress the need to consider adjustments to the classes to better accommodate everyone.

Table 7: Assessments and content understanding and learning

Assessments adequately reflect my understanding and learning of the content.		
Category	Frequency	Percentage
Strongly disagree	2	5,41%
In disagreement	5	13,51%
Neither agree nor disagree	5	13,51%
Agree	10	27,03%
Totally agree	15	40,54%

Source: Self elaboration

The majority of respondents 67.57% (summing the percentages of agree and strongly agree), consider that the evaluations adequately or very adequately reflect their understanding and learning of the contents. On the other hand, a smaller proportion 18.92% (summing totally disagree and disagree) are not satisfied with how the evaluations represent their learning. Some 13.51% are in a neutral position. This suggests that, overall, assessments are perceived positively by most respondents in terms of their

ability to reflect learning, although there is room for improvement and to address the concerns of those who disagree.

The percentages reflect a trend toward moderate responses, with a significant number of students taking a neutral position on their current educational experience. This suggests that there is considerable room for improvement in inclusion and adaptation of pedagogical strategies to students' needs.

The analysis thus far underscores the imperative need to adopt and reinforce inclusive strategies that respond to the diverse needs, learning styles, and paces of students to promote more meaningful learning. These results are confirmed and contrasted with those obtained from the teacher interviews conducted with the three sixth grade teachers as part of the research.

Through these interviews, it was revealed that, although some teachers believe they are effectively applying inclusive strategies, in reality they are more inclined towards traditional teaching methods, with few adaptations for classroom diversity. One teacher highlighted the use of technology as an inclusive strategy; however, he lacked specific examples demonstrating its adaptation to individual student needs.

Regarding the impact of these strategies on meaningful learning, teachers stated that their methods promote better student understanding and engagement. However, tangible improvements in the quality and depth of learning are not evident, and it was noted that some students felt excluded from group projects.

Teachers acknowledged facing challenges in managing diversity in the classroom, attributing these difficulties to lack of student motivation or external constraints, rather than to their own pedagogical practices. Although they mentioned collaboration and training as means to overcome these challenges, there is little evidence of their practical application or of significant changes in their teaching methods.

Regarding student perception and feedback, teachers believe their classes are well received, although surveys and interviews with students suggest otherwise, showing a lack of support and understanding of their learning needs. Records further indicate inconsistent participation and attendance, especially among those with special needs. Although they expressed the need for more resources and training, some have not taken advantage of existing opportunities, citing lack of time or interest. Their self-assessment

of the effectiveness of their strategies showed a disconnect with objective student performance and feedback data, suggesting an overestimation of their inclusive practices.

Teachers suggest changes in policies and resources, but there is a clear need for personal reflection and professional development to genuinely integrate inclusive strategies. Despite the optimism expressed, the lack of concrete actions and commitment to change underscores the urgency to reevaluate and strengthen training in inclusive practices.

The above reasons support the proposal to promote meaningful learning in 6th grade students of Cotopaxi Sports Federation Educational Unit through inclusive pedagogical strategies structured in three main axes: methodological diversification, adaptive educational technology and inclusive formative assessment as shown in Table 8.

Table 8: An Inclusive Alternative for Meaningful Learning

Training axes	Objectives	Inclusive strategies and techniques	Inclusive Benefits
Methodological Diversification	<p>Encourage critical thinking and creativity by solving real problems.</p> <p>Adapt the teaching-learning process to different learning styles and rhythms.</p>	<p>Project Planning (PBL): Design interdisciplinary projects that promote research, collaboration and presentation.</p> <p>Inclusive technique: Project Based Learning (PBL).</p> <p>Creation of Work Stations: Establish thematic areas in the classroom with varied activities to approach the same concept from different perspectives.</p> <p>Inclusive Technique: Cooperative Learning and Differentiated Instruction</p> <p>Use of Multisensory Instructional Materials</p>	<p>Allows students to use their individual strengths and learn at their own pace, promoting differentiation and inclusion.</p> <p>Facilitates interaction among students with different abilities and backgrounds, enriching the learning experience and fostering empathy and respect.</p> <p>Recognizes and values the diversity of the student body, providing multiple pathways to achieve learning objectives.</p> <p>Ensures that students with different learning preferences and needs can access educational content effectively.</p>
Adaptive Educational Technology	<p>Personalize learning according to the needs of each student.</p> <p>Increase motivation and engagement through the use of technology.</p>	<p>Selection of Digital Tools: Identify applications and software that allow adaptability and customization.</p> <p>Inclusive technique: Learning Stations</p> <p>Integration of Multimedia Resources: Incorporate multimedia resources in the lessons to enrich the learning process.</p> <p>Inclusive technique: Personalized Digital Tools</p>	<p>Offer learners the opportunity to explore concepts through multiple modalities and at their own pace, which is ideal for catering to diverse learning styles.</p> <p>Help present information in a more accessible and engaging way for different types of learners.</p> <p>Technology can offer personalized options for learning, including adjustments in difficulty level, pace, content presentation style, and provide immediate feedback.</p>
Inclusive Formative Evaluation	<p>Facilitate student self-assessment and reflection on their learning.</p> <p>Provide continuous feedback to guide student improvement.</p>	<p>Implementation of Digital Portfolios: Guide for students to create and maintain digital portfolios.</p> <p>Inclusive Technique: Learning Stations</p> <p>Self and Co-evaluation Strategies: Develop and apply clear criteria for these evaluations.</p> <p>Inclusive technique: Learning Stations</p>	<p>They allow the teacher and the student to reflect on the learning process, identifying strengths and areas for improvement.</p> <p>Promotes self-knowledge, self-regulation and motivates students to take an active role in their learning process.</p> <p>Adapts the assessment to the learning needs, interests and ability levels of each student.</p>

Source: Self elaboration

Conclusions

The results of the student and teacher surveys highlight a significant disconnect between teachers' perceptions of their inclusive practices and students' actual experiences, reinforcing the critical need to adopt effective and thoughtful inclusive strategies to improve the learning environment for all students.

The proposed integration seeks not only to improve the teaching-learning process by adapting it to the needs and rhythms of students, but also to promote a more inclusive and motivating learning environment.

The implementation of these strategies requires an ongoing commitment on the part of the faculty to adjust and adapt activities and assessments based on student feedback and progress, with the ultimate goal of facilitating meaningful and lasting learning.