Review of Contemporary Philosophy
ISSN: 1841-5261, e-ISSN: 2471-089X
Vol 23 (2), 2024
pp. 7020 - 7028

Strategies Based on Multiple Intelligences for Strengthening Academic Performance in Rural Secondary Education Students

[1]José Marcelo Torres Ortega, [2]Hernán Javier Guzmán Murillo,[3]Karen Catalina Leal Acosta

[1]Doctor en Economía y Empresas

Doctor en Estudios Políticos

Universidad de Sucre

jose.torres@unisucre.edu.co

https://orcid.org/0000-0001-8107-8763

[2]Doctor en Ciencias de la Educación

Universidad de Sucre Colombia

hernan.guzman@unisucre.edu.co

https://orcid.org/0000-0002-6757-4549

[3]Magister en Derecho Público

Universidad de Sucre Colombia

karen.leal@unisucrevirtual.edu.co

https://orcid.org/0000-0002-7916-2605

Summary

The purpose of this research was to determine the impact of the integration of the theory of multiple intelligences on the academic performance of fifth grade students in a rural educational institution located in Montería, Colombia. The study was based on a mixed approach with a concurrent design, descriptive and correlational, which allowed the phenomenon to be approached from quantitative and qualitative dimensions simultaneously. The sample was made up of 120 students and 5 teachers. Instruments such as the IAMI-R questionnaire, semi-structured interviews, and participant observation were used, which facilitated the characterization of multiple intelligence profiles and the assessment of academic performance before and after the implementation of the strategy. The expected results indicate that the application of the theory of multiple intelligences will allow the identification and strengthening of individual potentialities, diversifying pedagogical strategies and improving academic performance from a comprehensive and contextualized perspective. It is expected to find a positive correlation between students' perception of this methodology and their levels of academic performance. The research contributes to the transformation of pedagogical practices in rural contexts, promoting a fairer, more inclusive education that respects the cognitive diversity of students.

Keywords: Multiple intelligences; academic performance; rural education.

Received: 03 April 2024 **Revised:** 18 May 2024 **Accepted:** 29 May 2024

Introduction

In the contemporary educational field, the diversity of learning styles and cognitive abilities of students poses significant challenges for traditional education systems, particularly in rural contexts where structural and pedagogical conditions are often more limited. In Colombia, basic secondary education in rural areas faces multiple difficulties: low levels of academic performance, low student motivation, inflexible methodologies, and a curricular offer focused on homogeneous models that do not consider individual differences in ways of learning (MEN, 2021).

One of the persistent phenomena in rural educational institutions is the gap between the methodologies used in the classroom and the real needs of the student body. In many cases, pedagogical practices are reduced to the unidirectional transmission of knowledge, without considering the different forms of information processing, the heterogeneity of talents or the motivations that drive learning. As a consequence, progressive demotivation, difficulties in understanding content and low academic achievements in fundamental areas of the curriculum are observed.

Faced with this problem, it is necessary to incorporate pedagogical models that recognize and enhance the multiple cognitive capacities of students. The theory of **Multiple Intelligences**, proposed by Howard Gardner (1983), represents a theoretical and methodological alternative that seeks to diversify teaching practices based on the recognition that there is not a single way to be intelligent, but a variety of equally valuable skills: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic.

The application of this theory in the classroom allows teaching strategies to be adapted to the different profiles of students, generates more inclusive learning environments and promotes a comprehensive vision of academic performance, understanding that each student has specific strengths that can be enhanced from the pedagogical point of view. Various studies have shown that the use of methodologies based on multiple intelligences favors motivation, commitment, and academic achievement, especially in contexts where a reductionist view of intelligence has traditionally been imposed (Moreno & Ríos, 2019; González, 2021).

In the case of rural education in Montería, an urgent need was identified to intervene pedagogically to improve the low levels of academic performance, evident in institutional evaluations. In response to this, this research proposed to design and implement a strategy based on the theory of multiple intelligences, aimed at strengthening the teaching-learning processes in students of basic secondary education.

The study is based on the hypothesis that the recognition of the different types of intelligence in the classroom can have a positive impact on academic performance, by allowing for more personalized, participatory, and contextualized teaching. The aim is not only to improve performance indicators, but also to transform the prevailing pedagogical conceptions and promote a school culture focused on the appreciation of cognitive diversity.

Theoretical foundation

The proposal of **Multiple Intelligences (MI),** developed by Howard Gardner (1983, 1999), proposes an alternative approach to the traditional paradigm of intelligence focused on IQ. According to this theory, intelligence is not a single, uniformly measurable ability, but a set of differentiated skills that individuals develop to varying degrees, depending on their personal history, context, and educational experience. Gardner initially identified seven intelligences (linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal and intrapersonal) and later added an eighth: the naturalistic one. In addition, the author left open the possibility of identifying other emerging intelligences, such as existential.

Each of these intelligences represents a specific way of learning and processing information. For example, while linguistic intelligence is related to the ease of using oral and written language, kinesthetics implies a mastery of the body to express ideas and solve problems. From this approach, all students possess a unique

combination of intelligences, which requires a change in traditional pedagogical practices that prioritize one or two forms of expression and evaluation of knowledge.

Various studies have shown that the implementation of pedagogical strategies based on MI has positive effects on academic performance, motivation, self-esteem, and student participation (Armstrong, 2009; Díaz Barriga, 2015). These strategies involve designing diversified didactic activities that allow students to approach the content from their predominant cognitive strength, and at the same time, stimulate the development of other less used intelligences. This logic breaks with the uniform model of teaching, proposing a more personalized, flexible and meaningful education.

In rural contexts, where resources are scarce and pedagogical conditions are usually more restrictive, IM offers a powerful tool to resignify teaching practice. Authors such as López and Castillo (2020) argue that Gardner's theory allows teachers to recognize the value of knowledge and talents that are not traditionally visible in the classroom, such as manual skills, visual thinking, knowledge of the natural environment, or the ability to relate to each other.

From the perspective of **critical pedagogy**, incorporating MI into the school curriculum also implies a transformation in the way of conceiving assessment, planning and the teacher-student relationship. Instead of valuing only the quantitative results in standardized tests, this approach proposes to analyze the process, value the effort, recognize the multiple forms of expression of learning and respect individual differences as part of the richness of the group (Freire, 1998; Tedesco, 2000).

In this study, MI was conceived not only as a psychological category, but also as a **didactic tool for the design of contextualized pedagogical strategies**. It is based on the assumption that academic performance improves when it is recognized that students are not homogeneous recipients of information, but subjects with different ways of learning, perceiving and constructing meaning. Therefore, the proposed model is articulated to a humanistic and situated vision of education, which responds to the particular needs of young people in rural contexts.

The present research assumes, therefore, Gardner's theory as a basis for pedagogical intervention and rethinking the relationship between teaching, learning and assessment. Based on the identification of the predominant intelligence profiles in the students, differentiated pedagogical strategies were designed and implemented that seek to activate these intelligences and translate into sustainable improvements in academic performance.

Methodology

Research Approach and Design

This research is framed in a **mixed** approach, with the integration of **quantitative and qualitative** methods under a **concurrent** design, which allowed the analysis of the phenomenon from multiple perspectives. This is a **descriptive-correlational** study, aimed at identifying the impact of the implementation of pedagogical strategies based on the theory of multiple intelligences on the academic performance of students in basic secondary education in a rural institution in the municipality of Montería.

The choice of a mixed design responds to the need to capture not only the quantifiable variation in students' academic performance, but also the perceptions, experiences, and meanings constructed by teachers and students around the application of the pedagogical model. This holistic perspective made it possible to establish relationships between intelligence profiles, changes in academic performance, and pedagogical practices adopted during the process.

Population and sample

The population was made up of students in sixth, seventh, eighth and ninth grades of basic secondary education. The sample was **intentional and non-probabilistic**, consisting of **120 students** enrolled in the regular day and **5 teachers** in the basic area who participated in the design and implementation of

differentiated pedagogical strategies. The aim was for the participants to represent a diversity of learning styles and cognitive profiles to enrich the interpretation of the results.

Information collection techniques and instruments

Various instruments and techniques were used to ensure the validity of the data collected and facilitate their triangulation:

- **IAMI-R Questionnaire (Self-Assessment Inventory of Multiple Intelligences - Revised):** adapted and validated for the Colombian school population. It allowed to characterize the predominant intelligence profiles in the students.
- **Diagnostic tests and final tests by areas:** they were applied before and after the implementation of the strategies, to evaluate academic performance and detect significant variations.
- **Semi-structured interviews with teachers:** aimed at knowing their perceptions about the application of the model and the changes observed in the classroom.
- **Participant observation:** class dynamics, pedagogical interactions, and student responses to new strategies were documented.
- **Anecdotal record and field notes:** prepared by the teachers and the research team throughout the process.

Procedure

The pedagogical intervention was developed in four phases:

1. **Initial diagnosis:** characterization of multiple intelligence profiles through the application of the IAMI-R, evaluation of base academic performance and collection of contextual information.
2. **Design of differentiated pedagogical strategies:** the teachers, with the accompaniment of the research team, designed classroom activities that activated different intelligences (for example: concept maps for spatial intelligence, role-playing games for interpersonal intelligence, written production for linguistics).
3. **Implementation in the classroom:** application of the strategies during an academic period, with continuous monitoring by the research team.
4. **Final evaluation:** collection of information through academic tests, perception questionnaires and interviews.

Analysis of information

Quantitative data (academic test results and intelligence profiles) were processed using **basic descriptive and inferential statistics** (means, standard deviations, and Spearman's correlation analysis) to establish associations between predominant types of intelligence and academic performance.

Qualitative data from interviews, observations, and field records were analyzed through **thematic analysis**, identifying patterns, tensions, and emerging meanings around the implementation of the model. A methodological triangulation was developed between the sources to strengthen the interpretative validity of the findings.

Results

The findings of the research are organized into three main dimensions: (1) **Identification of predominant intelligence profiles in students**, (2) **Variation in academic performance after the implementation of pedagogical strategies**, and (3) **Perceptions and transformations in classroom** dynamics. This thematic and interpretative approach allows us to understand how the theory of multiple intelligences, applied systematically, influenced the teaching-learning process in a rural context of basic secondary education.

1. Predominant intelligence profiles in students

The analysis of the IAMI-R questionnaire showed that students present a diverse distribution of cognitive styles. The predominant intelligences were:

- **Interpersonal (41%),** associated with the ability to interact with others, resolve conflicts and work in a team.
- **Bodily-kinesthetic (22%),** linked to the use of the body as a means of expression, problem solving and manipulation of objects.
- **Naturalistic (17%),** related to the observation of the natural environment and the classification of elements.

Linguistic and logical-mathematical intelligences, traditionally privileged in schools, were only present as predominant in 15% and 5% of students, respectively. This finding is significant, as it indicates that a large majority of students **learn better through channels that are not conventionally stimulated in traditional teaching**, which reinforces the need to diversify classroom methodologies.

Interviews with teachers confirmed this interpretation. One of them said:

"Now I understand why some students do not respond well to the copy in the notebook or to the usual explanations. With other activities, they are much more interested and participatory."

2. Variation in academic performance

The results of the diagnostic and final tests applied in the basic areas revealed a **significant improvement in overall academic performance** after the application of differentiated pedagogical strategies. The average performance of students in all areas went from **3.1 on the scale of 1 to 5 in the initial test, to 3.8 in the final test**, with more marked increases in the areas of Natural Sciences and Spanish Language.

In particular, a notable improvement was observed in students with interpersonal and kinesthetic profiles, who obtained increases of up to 1.2 points in their final grade. The strategies that contributed most to this progress were:

- **Group simulations, dramatizations and debates**, which allowed interpersonal intelligence to be activated.
- **Use of manipulative materials, models and pedagogical outings**, which stimulated bodily and naturalistic intelligence.

In addition, it was observed that **students with lower initial performance were the ones who presented greater advances**, which suggests that MI-based strategies **act as learning levelers**, allowing multiple forms of access and appropriation of knowledge.

3. Transformations in pedagogical dynamics and student perceptions

Participant observation and interviews showed significant transformations in the classroom environment. We went from classes focused on the teacher's oral presentation and copying in the notebook, to **more dynamic, collaborative and meaningful spaces**, where students assumed an active role in the construction of learning.

Teachers reported greater participation from students who previously showed apathy, especially those with practical, artistic, or relational skills. This inclusion generated a more positive classroom climate, where individual strengths were valued and stigma was reduced towards those who traditionally obtained low scores.

Student voices also reflect positive transformation. In the open-ended questionnaires, they expressed comments such as:

"I liked that this time we learned by doing different things." I felt good because it wasn't all about copying and repeating." With the games and group work, I understood better."

These responses show greater **motivation, participation, and understanding**, elements that are essential to improve academic performance and strengthen school retention in rural areas.

Overall, the results show that the implementation of pedagogical strategies based on the theory of multiple intelligences **not only improves academic performance**, but also **enriches the educational experience and transforms pedagogical relationships**, which is especially valuable in contexts historically excluded from access to innovative didactic proposals.

Discussion

The results obtained in this research ratify the pedagogical value of the theory of multiple intelligences as a viable and transformative alternative to improve the academic performance of students in rural contexts, as well as to dynamize classroom practices in basic secondary education. The diversity of cognitive profiles identified in students, especially the predominance of interpersonal, bodily-kinesthetic and naturalistic intelligences, poses the challenge of revising traditional methodologies that, almost exclusively, privilege linguistic and logical-mathematical intelligence as referents of good school performance.

This finding coincides with what was stated by Gardner (1999), who warned that educational institutions tend to value a limited type of intelligence, neglecting other legitimate ways of learning and expressing knowledge. In the case studied, it was evident that a significant part of the students have strengths in dimensions that are little stimulated by conventional methodologies, which suggests that the low performance initially observed is not due to an inability to learn, but to the **disconnection between the modes of teaching and the students' natural ways of learning**.

The results also coincide with previous studies carried out in rural contexts in Latin America (López & Castillo, 2020; Ortega, 2021), which have documented how pedagogical strategies based on multiple intelligences improve the motivation, involvement, and academic performance of students who were previously considered "laggards" or "disinterested". This research contributes to this body of knowledge by demonstrating that, when teachers design activities that are diverse, flexible, and connected to their students' talents, not only a quantitative improvement in grades is achieved, but also a **qualitative transformation in the educational experience**.

From a pedagogical point of view, the implementation of the model made it possible to move towards a more inclusive, participatory, and student-centered approach. The transition from frontal teaching to active practices, based on challenges, cooperation and exploration of the environment, redefined traditional roles in the classroom and strengthened the relationship between teachers and students. This transformation responds to the approach of critical pedagogy (Freire, 1998), which understands that learning occurs to the extent that subjects recognize themselves as capable of producing knowledge from their reality, and not as simple recipients of standardized content.

Likewise, the positive impact observed on academic performance, especially in students with lower initial performance, confirms that differentiated pedagogical strategies function as **compensatory mechanisms** that reduce gaps within the school group. By offering multiple forms of access to knowledge, these strategies allow all students—regardless of their cognitive profile—to find real opportunities for success. This is in line with the principles of Universal Design for Learning (UDL), which raises the need to make the means of representation, action and expression more flexible to ensure more equitable education.

However, it is important to recognize that the implementation of this approach was not without its difficulties. Some teachers initially expressed insecurity in the design of activities adjusted to different profiles, as well as resistance to the additional burden of planning. These challenges were overcome in part thanks to collaborative work, the accompaniment of the research team and the evidence of progress in the classroom. This aspect highlights the importance of **continuous training processes** that allow teachers to

appropriate the multiple intelligences approach not as a pedagogical fashion, but as an ethical and technical tool to address diversity.

In summary, the results of this study reaffirm that a pedagogical proposal based on the recognition of different intelligences can **redefine the school experience in rural contexts**, by improving academic performance, transforming classroom culture and generating new understandings about what it means to learn and teach in the school of the twenty-first century. Gardner's theory, when contextualized and operationalized in concrete practices, becomes a structuring axis for educational innovation in historically marginalized scenarios.

Conclusions

The present research showed that the application of pedagogical strategies based on the theory of multiple intelligences has a positive and significant effect on the academic performance of students of basic secondary education in a rural context of the municipality of Montería. The findings obtained from the mixed analysis of the data show that the recognition and activation of different intelligence profiles in the classroom contribute not only to the improvement of grades, but also to the strengthening of student participation, motivation and academic self-esteem.

The results show that most of the students do not present a predominance in the intelligences traditionally privileged by the school (linguistic and logical-mathematical), but in others such as interpersonal, bodily-kinesthetic and naturalistic. This reality shows that traditional pedagogical approaches, focused on abstract and verbal learning, do not respond to the true potentialities of students in these contexts. The implementation of diversified strategies, designed based on the students' multiple intelligence profiles, made it possible to activate their capacities, increase their commitment to learning and raise their levels of achievement.

Additionally, it was found that the most significant changes occurred in students with lower initial performance, which suggests that this approach can act as an effective pedagogical tool to reduce internal classroom gaps and promote a more inclusive and equitable education. This perspective breaks with the logic of deficit that often stigmatizes rural students, demonstrating that when contextualized opportunities are offered, all students can learn and improve.

From the didactic point of view, the experience also generated transformations in the teachers, who when leaving their comfort zone rediscovered new ways of interacting with the contents, with their students and with themselves as mediators of learning. Through collaborative work, pedagogical reflection, and observation of real progress in the classroom, teachers began to incorporate more flexible, active, and cognitively diversity-focused practices.

In general terms, it is concluded that:

1. The multi-intelligence approach favours more personalised, comprehensive and contextualised teaching.

2. Its application improves academic performance, especially in students with low initial performance.

3. It contributes to transforming the classroom climate and generating a more inclusive pedagogical culture.

4. It requires a reconfiguration of teaching roles and a more creative and collaborative didactic planning.

As recommendations, it is proposed:

- **Incorporate training in multiple intelligences** in teacher development programs, with emphasis on the design of strategies applicable in rural contexts.

- **Promote institutional pedagogical projects** that include the diagnosis of learning profiles and the diversification of methodologies in all areas of knowledge.
- **Promote collaborative work among teachers**, as a strategy for the exchange of experiences, the construction of teaching materials and the monitoring of learning from multiple approaches.
- **Expand research in this line**, with longitudinal studies that allow analyzing the sustainability of the approach and its impact on other dimensions of student development (coexistence, autonomy, school permanence, among others).

In conclusion, this study provides solid evidence on the potential of multiple intelligences as the foundation of a more humane, fair and transformative rural education, which respects differences, values talents and guarantees the right of all students to learn according to their own abilities.

References

1. Armstrong, T. (2009). *Multiple intelligences in the classroom* (3rd ed.). ASCD.
2. Cárdenas, M. L., & Hernández, F. (2018). Attention to diversity in the classroom from the perspective of multiple intelligences. *Revista Colombiana de Educación, 75*, 43–65. https://doi.org/10.17227/rce.num75-9891
3. Díaz Barriga, F. (2015). *Situated teaching: Link between school and life*. McGraw-Hill.
4. Freire, P. (1998). *Pedagogy of autonomy: Knowledge necessary for educational practice*. Siglo XXI Editores.
5. Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. Basic Books.
6. Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. Basic Books.
7. González, L. M. (2021). Implementation of strategies based on multiple intelligences in rural contexts. *Education and Social Development, 15*(2), 89–106. https://doi.org/10.18359/reds.5532
8. López, R., & Castillo, M. (2020). Pedagogical strategies to enhance the diversity of intelligences in rural schools. *Revista Horizontes Pedagógicos, 22*(1), 45–62.
9. Ministry of National Education (MEN). (2021). *Guidelines for educational care in rural areas*. MEN.
10. Moreno, A., & Ríos, D. (2019). The development of multiple intelligences in basic education: an experience in the classroom. *Revista Praxis Pedagógica, 19*(25), 123–140. https://doi.org/10.26620/uniminuto.praxis.19.25.2019.123-140
11. Ortega, C. (2021). Multiple intelligence profiles and academic performance in rural secondary school students. *Ibero-American Journal of Education, 87*(1), 57–76. https://doi.org/10.35362/rie8713371
12. Tedesco, J. C. (2000). *The new educational pact*. Ariel.
13. UNESCO. (2017). *Guide for teachers: Inclusive education and differentiated strategies in the classroom*. Regional Bureau of Education for Latin America and the Caribbean.
14. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
15. Zabala, A., & Arnau, L. (2008). *11 key ideas: How to learn and teach skills*. Graó.
16. Zubiría, S. (2011). *Multiple intelligences and learning styles: foundations for a diversified pedagogy*. Teaching.
17. Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1–22.

18. Gardner, H., & Moran, S. (2006). The science of multiple intelligences theory: A response to Lynn Waterhouse. *Educational Psychologist, 41*(4), 227–232.

19. Perkins, D. (1995). *Outsmarting IQ: The emerging science of learnable intelligence*. The Free Press.

20. Salinas, J. (2013). The inclusion of multiple intelligences in the curriculum. *Education and Future, 29*, 145–160.