

Original Article

Education and Politics in the 21st Century: Challenges, Analysis and Perspectives for 2030 in the South of Tamaulipas and the North of Veracruz in the Telebachillerato (Telebaccalaureate)

Juan Jesús Pecero-Moreno^{1,2}, Kenya Suárez-Dominguez^{1*}, Alejandra Hernández-Alvarado Rocio¹, R. Gallegos-Villela³, Hugo Herrera-Pilotzi⁴

¹Faculty of Architecture, Design and Urbanism, Universidad Autónoma de Tamaulipas, CP.

²Universidad Instituto Hispano-Mexicano. Tampico, Tamaulipas CP.

³Centro de Investigación FAD. UAT Centro Universitario Sur CP.

⁴Unidad Académica Multidisciplinaria Reynosa Rodhe. Reynosa, Tamaulipas.

*Corresponding Author : kenya.suarez@uat.edu.mx

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Abstract - This paper presents a comprehensive analysis of the challenges, opportunities, and perspectives of education and educational policy in Southern Tamaulipas and Northern Veracruz, drawing on quantitative data. Utilizing a theoretical-practical and methodological approach, the study examines exemplary practices in the professional performance of educators in Telebaccalaureate High Schools and the Autonomous University of Tamaulipas, with a particular focus on their online Bachelor's degree programs. The findings highlight critical issues related to educational quality, equity, inclusion, and teacher training, providing an integrated overview of the current educational landscape and projections leading up to 2030. Significant challenges are identified within the educational context, such as low achievement rates in mathematics and a substantial educational lag affecting a considerable percentage of students. Furthermore, the urgent need to enhance the pedagogical training of teachers is underscored, as a large proportion lacks adequate preparation. The inclusion of technology in the classroom and the evaluation of existing educational policies are also analyzed, emphasizing their impact on student learning and academic performance. This study aims to contribute to the design and implementation of more effective educational policies, focused on the continuous improvement of educational quality in the region, thereby fostering a more equitable and inclusive learning environment by 2030

Keywords - Education, Educational policy, Teaching, Challenges, Perspectives.

1. Introduction

Education and education policy in the twenty-first century face a number of significant challenges that require immediate attention and action. In particular, in the south of Tamaulipas and the north of Veracruz, regions that present their own socioeconomic and political contexts, the quality of education and equity in education are aspects of great relevance that demand careful attention. According to the National Institute for the Evaluation of Education [1], only 60% of high school students in this region reach the basic level in mathematics, which underscores the need for effective interventions to improve educational standards. Equity in education is also an area of concern, as evidenced by the 20% educational lag rate reported by the National Council for the Evaluation of Social Development Policy [2].

This figure highlights the importance of inclusive education policies that address socioeconomic and cultural disparities in access to and quality of education.

The role of teachers in improving the quality of education is fundamental. However, a recent study [3] found that 70% of teachers in upper secondary education institutions in the region lack adequate pedagogical training. This lack of teacher preparation can negatively affect students' educational experience and highlights the need for continuous training and professionalization programs for teachers. In addition, the 4 COVID-19 pandemic has further amplified existing challenges in education. [4,5] discuss the impact of the pandemic on education, highlighting the need for adaptation and transformation in education systems to ensure the continuity of learning.



In this context, the importance of addressing these challenges in a comprehensive and future-oriented manner becomes evident. This article seeks to offer a comprehensive analysis of the current challenges and future prospects for education and education policy in [6] Southern Tamaulipas and Northern Veracruz. Using a methodology based on theoretical-practical and methodological research, good practices in the professional performance of teaching in Telebaccalaureate High Schools and Universities will be explored.

This research is expected to contribute to the development of more effective educational policies and the continuous improvement of educational quality in the region until 2030. The Inclusion of technology in the classroom is another important aspect to consider in today's educational landscape. Torres and Díaz [6] (2023) explore the challenges and opportunities of distance education in the regional context, underscoring the need for adequate technological infrastructure and effective pedagogical strategies to ensure the quality of virtual teaching.

Education policies play a key role in shaping the education system and ensuring quality education for all. [7, 8] evaluate the impact of education policies in southern Tamaulipas and northern Veracruz, noting the importance of inclusive policies that address the region's specific needs and promote equity in education.

This article aims to offer a comprehensive analysis of the challenges and perspectives of education and educational policy in Southern Tamaulipas and Northern Veracruz. Based on a methodology based on theoretical-practical and methodological research, this study aims to contribute to designing and implementing more effective educational policies and strengthening educational quality in the region until 2030.

2. Method

This study is based on an exhaustive review of the academic literature on education and educational policy in the context of Southern Tamaulipas and Northern Veracruz. Quantitative data were collected from government reports, research studies, and surveys conducted in the region. Qualitative analysis techniques were used to identify trends and patterns in the data and generate meaningful conclusions about the challenges and prospects in education up to 2030.

Teacher Training: Include an analysis of the pedagogical training needs of teachers in telebaccalaureate high schools and universities, as well as proposals to improve the quality of teacher training in the region.

Educational Inclusion: with evaluation of educational inclusion policies and their impact on educational equity.

Identification of barriers and challenges in the implementation of inclusive policies.

Technology in the Classroom: Analysis of access to and use of information and communication technologies (ICT) in educational institutions—evaluation of the impact of ICT on the teaching-learning process and students' academic performance.

Educational Policies: Critical review of current educational policies and their effectiveness in improving the quality of education. Proposals for policy reforms that promote equity and educational excellence in the region.

3. Results and Discussion

3.1. Educational Quality and Equity

According to data from INEE (2019), between 60% and 70% of students in Southern Tamaulipas and Northern Veracruz reach the basic level in mathematics, while approximately 30% are below this level. This indicates a disparity in academic achievement levels in the region.

According to CONEVAL (2020), the educational lag rate varies between 15% and 25% in different municipalities of the region. This lag is related to socioeconomic factors, such as poverty and lack of access to educational services.

It is important to point out that proper management even allows appreciation for the teacher, for example, even with the transfer of the author, there was an increase in appreciation and ties with the students that allowed the improvement of academic performance that, as will be read later, allowed to compete at the regional level and have a presence.



Fig. 1 Sample of ties derived from strategies: United Group (photograph taken by the authors)

4.2. Teacher Training

A study conducted by [3,4,9] found that between 70% and 80% of teachers in upper secondary education institutions in the region do not have adequate pedagogical training. This lack of training can affect the quality of teaching and student learning. The scarcity of continuing professional development programmes for teachers also contributes to this situation, highlighting the need for teacher education and training investments.

4.3. Impact of the Pandemic on Education

The COVID-19 pandemic has had a significant impact on education in the region. According to González and Martínez (2021), approximately 80% to 90% of students were affected by school closures and the transition to distance learning. However, only 40% to 50% of students have adequate access to technological resources and internet connections to participate in online learning, which has exacerbated existing digital and socioeconomic divides.

4.4. Evaluation of the Impact of Educational Policies

An analysis of the impact of education policies in the region revealed that approximately 60% to 70% of teachers consider these policies ineffective in improving the quality of education.

The lack of alignment between education policies and the real needs of the region, as well as the insufficient participation of educational actors in their design and implementation, are factors that contribute to this perception. As a result of the experiences, the participation of two students in the 2023 Science Olympics contest resulted in first and second place in the subject of Biology, out of 100 participants who were in the Ozuluama Veracruz area.

The results presented reveal a series of significant challenges in the educational field of Southern Tamaulipas and Northern Veracruz. The quality of education, teacher training, the impact of the pandemic, and the effectiveness of educational policies are key aspects that require urgent attention to improve the educational situation in the region.

Regarding educational quality, INEE data (2019) show that between 60% and 70% of students reach the basic level in mathematics. Although these numbers suggest some level of achievement, it is concerning that up to 40% of students may be below this threshold. This highlights the need to implement effective strategies to improve academic performance in the region.

Teacher training is another crucial aspect that requires attention. With rates of between 70% and 80% of teachers without adequate pedagogical training, significant investment in continuous professional development programs is needed to improve the quality of teaching.

The impact of the COVID-19 pandemic has further exacerbated existing challenges in education. With up to 90% of students affected by school closures and the transition to distance education, it is critical to address the digital and socioeconomic gaps that have emerged during this period. Regarding the effectiveness of educational policies, the data show that approximately 60% to 70% of teachers consider that current policies have not been effective in improving educational quality. This suggests the need for a thorough review of existing policies and the

implementation of measures that are more aligned with the real needs of the region.

To improve the educational situation in southern Tamaulipas and northern Veracruz, it is necessary to adopt a comprehensive approach that addresses these challenges in a coordinated manner. Some possible improvements include:

- Implement high-quality teacher training programs, focusing on innovative methodologies and effective pedagogical practices.
- Investment in technological infrastructure and internet access in rural and marginalized communities to ensure learning continuity during emergencies such as the COVID-19 pandemic.
- Design inclusive education policies that address the region's specific needs and promote equity in education.
- Encouraging the participation of the educational community in decision-making, ensuring that policies and programmes are consistent with local realities and the aspirations of students and their families.

These improvements will not only positively impact the quality of education in Southern Tamaulipas and Northern Veracruz. However, they will also contribute to promoting human development and socioeconomic progress throughout the region. The mission of the Ministry of Education of Veracruz (SEV), for example, is to coordinate its educational policy and organize its educational system at all levels and modalities, based on the terms established by the political constitution of the entity and the applicable laws. Likewise, develop, supervise, and coordinate educational, scientific, and sports programs to promote, encourage, and support the progress and well-being of the people of Veracruz.

As a case study, a telebaccalaureate located in the municipality of Tampico Alto, Veracruz, was selected, where it was possible to obtain the first places.



Fig. 2 Award of first places in science Olympiads in the North of Veracruz

4.5. Additional Policy Proposals

In addition to the above, it is necessary to carry out concrete implementations, which address possibilities in student and teacher development, as well as the improvement of indicators, among which are those aimed at improving student care, such as the implementation of tutoring and

academic support programs for students at risk of educational backwardness. Providing additional resources and individualized attention to improve their academic performance.

The promotion of public-private partnerships to finance innovative educational projects, such as the creation of science laboratories, student exchange programs, and scholarships, that enrich students' educational experience and encourage the development of practical skills. It is not enough to include students and teachers, it is necessary to include the people involved for the development of the student body, this then considers the establishment of education programs for parents and families, which provide guidance and resources to support their children's learning at home, encouraging greater participation and parental commitment in the education of students.

Implementing formative assessment strategies and continuous feedback in the classroom should be considered as a daily axis that allows teachers to identify students' individual needs and adjust their teaching accordingly, promoting more personalized and effective learning.

Finally, it is necessary to improve teaching skills, so it is necessary to

- Development of teacher retention and attraction policies, which recognize and reward the exceptional performance of teachers, provide professional development opportunities, and improve working conditions in the education sector.

4.6. SDG

The research aligns with several SDGs by addressing educational challenges in Southern Tamaulipas and Northern Veracruz and proposing solutions that contribute to the achievement of sustainable and equitable development in the region. The research presented in this article relates to several of the Sustainable Development Goals (SDGs) established by the United Nations as part of the 2030 Agenda. Here is how the research addresses some of these SDGs:

4.6.1. SDG 4: Quality Education

The research analyzes the challenges and perspectives of education in Southern Tamaulipas and Northern Veracruz, with the aim of improving the quality of education in the region. It is proposed that teacher training, educational Inclusion, and the use of technology in the classroom be addressed as key aspects of achieving quality education for all.

4.6.2. SDG 5: Gender Equality

While not specifically mentioned in the introduction, the research could explore how education policies can contribute

to closing the gender gap in access to and quality of education in the region, promoting equal opportunities for women and girls.

4.6.3. SDG 8: Decent Work and Economic Growth

By improving the quality of education and teacher training, research could prepare students for the labour market and promote sustainable economic growth in the region.

4.6.4. SDG 10: Reduced Inequalities

The research focuses on addressing inequalities in education, particularly in Southern Tamaulipas and Northern Veracruz, with the aim of promoting inclusive policies that benefit all groups in society.

4.6.5. SDG 16: Peace, Justice and Strong Institutions

While not the main focus, research could explore how quality and equitable education can contribute to building peaceful and just societies by promoting equal access to education and strengthening educational institutions.

5. Conclusion

The research presented highlights the urgency of addressing the educational challenges in Southern Tamaulipas and Northern Veracruz, as evidenced by the quantitative data analyzed. The results reveal that between 60% and 70% of students reach the basic level in mathematics, indicating a moderate level of academic achievement in the region. However, the presence of up to 40% of students below this threshold highlights the need for interventions to improve educational quality and close learning gaps.

Likewise, the lack of adequate pedagogical training affects between 70% and 80% of teachers in upper secondary education institutions. This deficiency in teacher preparation can hinder the teaching-learning process and contribute to the perpetuation of educational inequalities. Investing in continuous professional development programs is crucial to strengthening teachers' pedagogical skills and improving the quality of teaching.

The COVID-19 pandemic has further exacerbated these challenges, affecting approximately 80% to 90% of students in the region. School closures and the transition to distance learning have highlighted existing digital and socio-economic divides, with only 40% to 50% of students having adequate access to technological resources and internet connections. These disparities require immediate attention to ensure continuity of learning and mitigate the negative impact on educational equity. In general, urgent actions are required to improve the quality of education and promote equity in the region. Policymakers and education actors are urged to implement concrete measures, such as teacher

training programmes, inclusive policies and effective educational technologies. Only through a comprehensive and collaborative approach will it be possible to guarantee a prosperous future for education in the south of Tamaulipas and the north of Veracruz until 2030.

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