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Article

The Community High School student as an agent of environmental change. Tres Marías Morelos

El estudiante de Preparatoria Comunitaria como agente de cambio ambiental. Tres Marías Morelos

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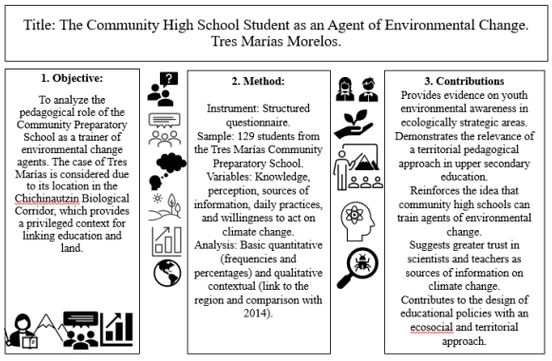
Abstract

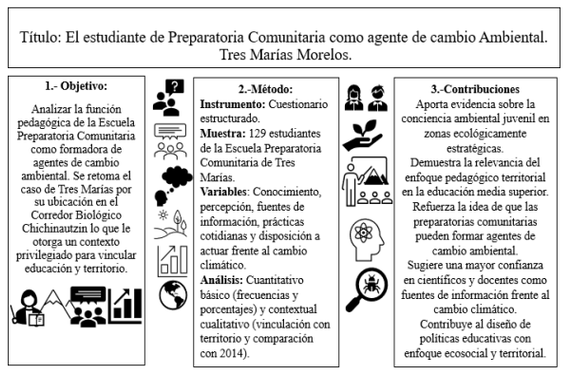
This study analyzes the pedagogical role of the Tres Marías Community Preparatory School as a trainer of environmental change agents. Its location in the Chichinautzin Biological Corridor provides it with a privileged context for linking education and territory. Based on a questionnaire administered to 129 students (62.7% women, 35.6% men, and 1.5% other), perceptions, knowledge, and willingness to act regarding climate change were explored. The results reveal a high level of awareness: 93.3% attribute the rise in temperature to human causes, and 60% consider climate change a current and serious threat. 71.3% trust scientists and teachers as sources of information, highlighting the role of schools in building environmental knowledge. However, gaps were identified regarding national policies, highlighting the need to strengthen the political dimension of the curriculum. Overall, the experience confirms that community high schools develop student profiles with the skills to pedagogically impact their communities.

Resumen

Este estudio analiza la función pedagógica de la Escuela Preparatoria Comunitaria de Tres Marías como formadora de agentes de cambio ambiental. Su ubicación en el Corredor Biológico Chichinautzin le otorga un contexto privilegiado para vincular educación y territorio. A partir de un cuestionario aplicado a 129 estudiantes (62.7 % mujeres, 35.6 % hombres y 1.5 % otro), se exploraron percepciones, conocimientos y disposición a la acción frente al cambio climático. Los resultados revelan un alto grado de conciencia: 93.3 % atribuye el aumento de la temperatura a causas humanas y 60 % considera al CC una amenaza actual y seria. El 71.3 % confía en científicos y docentes como fuentes de información, lo que resalta el papel de la escuela en la construcción del conocimiento ambiental. Sin embargo, se detectan vacíos en torno a las políticas nacionales, lo que evidencia la necesidad de reforzar la dimensión política del currículo. En conjunto, la experiencia confirma que las preparatorias comunitarias consolidan perfiles estudiantiles con competencias para incidir pedagógicamente en sus comunidades.



Community pedagogies, agents of change, natural areas



Pedagogías comunitarias, agentes de cambio, área natural

Area: Advocacy and attention to national problems.

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Introduction

Climate change represents one of the greatest challenges of our time, with direct consequences on ecosystems, human health, the economy, and social stability. Several studies have identified the need for environmental education that not only informs but also shapes critical individuals capable of acting in response to environmental issues. As Pérez *et al*. (2025) emphasize, contemporary methodological trends in education seek to integrate theoretical and practical knowledge, fostering critical reflection and innovation in learning processes.

In this context, the study presented by Jiménez-Ávila, Sánchez Salina, and Ortiz-Hernández (2014) at the XIII International Congress and XIX National Congress of Environmental Sciences, titled Perception of Climate Change among Upper Secondary Students in the State of Morelos, revealed that although there is general knowledge about climate change at this educational level, misunderstandings persist, as well as a gap between environmental awareness and concrete action. These findings are consistent with what Magallanes Delgado *et al*. (2025) describe as the need for educational practices that promote international dialogue and shared learning between diverse academic communities, reinforcing pedagogical innovation through comparative and contextualized approaches.

Given this situation, the present study on the perception of climate change at the Escuela Preparatoria Comunitaria de Tres Marías revisits and updates the findings of the 2014 research from a contextualized, technical, and territorial perspective, recognizing students not only as subjects of analysis but also as agents with transformative potential.

This new research is relevant as it focuses on a school offering specialized education in environmental and community topics, allowing for a deeper analysis of the relationship between technical training, environmental knowledge, and dispositions toward action. Such an approach aligns with the view of the Red de Investigadores Latinoamericana (2025), which highlights scientific dissemination as a socially transformative practice that connects research with communities and strengthens citizen participation in environmental decision-making.

Moreover, this updated study is framed within a context in which the impacts of climate change, global awareness of the environmental crisis, and the demands on educational systems to respond with more comprehensive, interdisciplinary, and place-based approaches have intensified. Yaxi, Rodríguez, and Pérez (2025) underscore that understanding territorial systems requires acknowledging the ecological, cultural, and social dimensions that shape them, an idea central to designing education that fosters environmental agency. Similarly, Ruiz y Limón (2025) show that creative and expressive pedagogical tools, such as poetry, can nurture empathy, dialogue, and a culture of peace among youth, principles that are equally essential for environmental education aiming to cultivate care and collective responsibility.

Thus, the current research represents an opportunity to move from diagnosis to pedagogical action, strengthening the role of rural high schools as incubators of environmental promoters, community technicians, and citizens committed to the ecological and social future of their region (Programa educativo 2022. Reestructuración Escuela Preparatoria Comunitaria de Tres Marías).

The *Escuela Preparatoria Comunitaria de Tres Marías*, under the supervision of the Universidad Autónoma del Estado de Morelos (UAEM), is in the municipality of Huitzilac, Morelos. This municipality lies in the northwest of the state and covers an area of 189.1 km², representing 3.9% of the state's total territory Síntesis estadística municipal Huitzilac 2022).

It borders to the north with the Tlalpan Delegation of Mexico City, to the east with Tepoztlán, to the south with Cuernavaca, and to the west with Tianguistenco and Ocuilan in the State of Mexico. Two types of climate predominate in the municipality: cold in the northern part (52%) and temperate sub-humid in the remaining area (48%) (Gobierno del Estado de Morelos 2022).

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Box 1

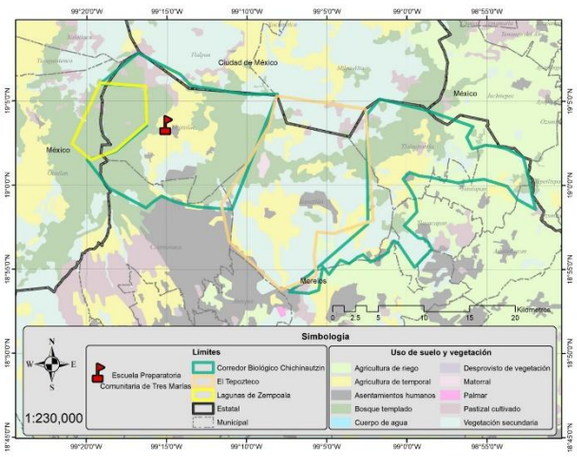

Figure 1
Map of the location of the Tres Marías Community High School

Source: Author's Own Elaboration.

According to the 2020 Population and Housing Census, the municipality has a population of 24,515 inhabitants, representing 1.2% of the state's total population. Of this total, 12,539 are women and 11,976 are men, accounting for 51.1% and 48.9% of the population, respectively. The age groups with the highest concentration of both men and women range from 5 to 24 years old. Overall, 51% of the municipality's population is considered young, meaning they are between 0 and 29 years of age (INEGI, 2020).

It is characterized as a rural environment with strong territorial and community ties. In this setting, the technical programs of Forestry Technician and Sustainable Community Development Technician are offered, addressing the need to train students capable of contributing to sustainable territorial management and developing solutions to the socio-environmental crisis.

This paper presents the results of a climate change perception exercise conducted with students from this high school, as part of an approach that recognizes young people as key actors in the transition toward a more sustainable society. Based on the analysis of these data, the aim is to argue that the students of Tres Marías not only possess knowledge about climate change but also demonstrate dispositions, attitudes, and values that position them as agents of environmental change.

Methodology

The research is based on the application of a 20-question survey administered to a sample of 129 students from the Escuela Preparatoria Comunitaria de Tres Marías, with the aim of identifying their perceptions, knowledge, and attitudes toward climate change. The sample consisted of 89% students between 15 and 20 years old, 62.7% female students, 35.6% male students, and 1.5% who identified with another gender. This also makes it possible to acknowledge the diversity within the student body and its implications for participation practices and environmental education.

The results obtained from the applied instrument not only made it possible to identify the levels of environmental knowledge and perception among the students but also to place them within the broader context of the environment in which they develop as social and educational subjects. The combination of responses regarding the issues that concern them most and their statements about climate change provided a comprehensive understanding of the students' environmental, social, and political imagination.

Educational Purpose and Alignment with the 2030 Agenda

From the perspective of critical pedagogy (Freire, 1970), Education must be a tool for liberation and social transformation. Rather than reproducing knowledge in a "banking" manner, it should foster critical reflection and conscious action. In rural contexts such as Tres Marías, this approach empowers students as actors who understand their reality, question it, and act within it.

Environmental education for sustainability (Leff, 2004; Sauvé, 2005) presented as a transversal, territorial, and transformative pedagogy. It is not merely about teaching environmental topics but about forming ethical individuals committed to socio-environmental justice and capable of envisioning alternatives to the dominant model of development.

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Ecological citizenship, as proposed by Bascopé (2021) y González-Gaudiano (2009), advances a vision of citizenship that is critical and environmentally engaged, assuming collective responsibility for the care of common goods. It involves participation in decision-making processes and the exercise of ecological rights and duties that go beyond the notion of responsible consumption.

Meanwhile, the service-learning (SL) approach connects academic training with community engagement. Authors such Puig, Gijón Casares, Martín García y Rubio Serrano, (2011) define it as a methodology that integrates the learning of content and values with the performance of solidarity-based activities aimed at improving the environment. In rural contexts, SL enables students to develop projects that address real problems within their communities while strengthening their identity, autonomy, and professional vocation.

Ultimately, this theoretical framework allows for understanding the students of the Tres Marías community not only as learners of a technical trade but as ecological citizens in training, territorial transformation agents, and key actors in the transition toward more sustainable ways of life.

The educational proposal of the Escuela Preparatoria Comunitaria de Tres Marías aligns directly with the principles of the 2030 Agenda for Sustainable Development, particularly with Target 4.7 of SDG 4, which seeks to ensure that all learners acquire the knowledge and skills needed to promote sustainable development. This includes education for sustainability, human rights, gender equality, the promotion of a culture of peace and global citizenship, as well as the appreciation of cultural and natural diversity.

The institution's mission is to train individuals with analytical and strategic abilities to promote community development through the sustainable use of natural resources. This mission translates into a clear general goal: to educate Forestry Technicians and Sustainable Community Development Technicians with the technical, scientific, and ethical competencies required for the conservation and management of natural resources, guided by a critical, ecological, and socially engaged vision.

From this perspective, the specific objectives of both programs strengthen the link between professional training and the territorial context. In the case of the Forestry Technician, the focus is on comprehensive and sustainable education that addresses regional development needs through technical procedures that enhance production and conservation. The Sustainable Community Development Technician, on the other hand, is oriented toward the design of public policies, participatory projects, and strategies that connect economic development with environmental protection. The educational proposal becomes even more relevant due to the location of this academic unit within the Chichinautzin Biological Corridor and the social composition of its student body, which, as previously mentioned, comes from ejido and communal families. This not only reinforces the pertinence of the curriculum but also turns the school into a natural incubator of community leaders capable of participating in institutional and governmental processes related to sustainable development.

These young people, educated in a context of high biocultural richness and with technical training oriented toward territorial action, have the potential to become environmental promoters with a critical perspective on climate change. Their education enables them to diagnose local problems, communicate sustainable knowledge and practices, participate in the implementation of environmental policies, and lead mitigation and adaptation initiatives both within their communities and in inter-institutional spaces. The articulation between their territorial identity, ethical commitment, and technical training positions them as key agents in the transition toward resilient ways of life in the face of climate change.

Social Concerns and Perception of Climate Change

The results made it possible to identify the levels of environmental knowledge and perception among the students, while also situating them within the broader context of their social and educational environment. The combination of responses regarding the issues that generate the greatest concern with statements related to climate change provided a comprehensive view of their environmental, social, and political imagination.

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Firstly, the fact that climate change was identified as the second most concerning issue (58.1%), practically at the same level as violence and war (58.9%), revealed that students do not perceive environmental issues as separate from social ones, but rather as part of a complex network of contemporary threats and challenges (Figure 2). This holistic perspective is consistent with a territorial approach to environmental education, which recognizes that the impacts of climate change are neither abstract nor distant, but are manifested in their communities through water stress, loss of forest cover, and alterations in agricultural cycles.

Box 2

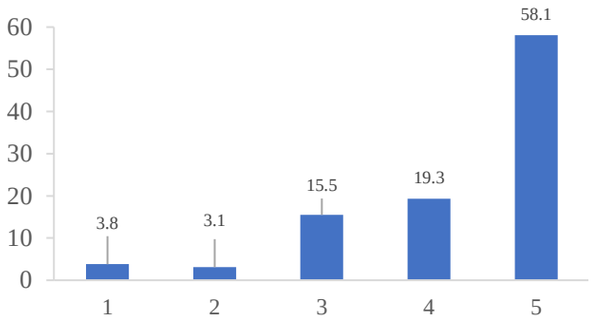

Figure 2

Percentage of students who identify climate change as a concerning issue (scale from "not very concerning" to "very concerning")

Source: Author's Own Elaboration

When examining other issues identified as priorities, such as crime, overpopulation, poverty, infectious diseases, and unemployment, a panorama of multiple vulnerabilities that shape the lives of rural youth becomes evident. Within this context, climate change is not perceived as an isolated threat but as a factor that can worsen existing conditions of inequality and precarity, making it a legitimate concern from an environmental justice perspective.

On the other hand, as shown in Figure 3, the high levels of agreement with statements such as "Temperatures have changed" (73.6%), "Climate change is caused by human activities" (67.4%), and "It is happening right now" (62.1%) confirmed that the students possess a fairly consolidated level of awareness regarding the reality and causes of the climate phenomenon.

Moreover, the fact that 62.1% consider it a global threat and 51.1% perceive it as a personal or family threat demonstrates significant progress compared to previous studies (such as de Jiménez-Ávila *et al*., 2014), in which the prevailing perception was that climate change would mainly affect other people or future generations.

Box 3

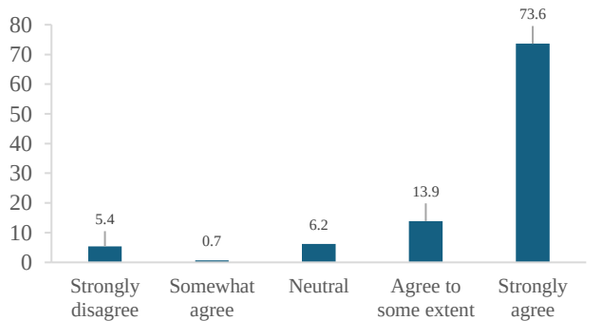

Figure 3

Percentage of students who confirm or deny that the planet's temperatures have changed compared to the previous decade.

Source: Author's Own Elaboration

These data are particularly meaningful within the geographical and cultural context in which the high school is located: a region integrated into the Chichinautzin Biological Corridor, rich in biodiversity and ecosystem functions, yet vulnerable due to its proximity to unregulated urban growth, real estate pressure, and the improper use of land and water. Furthermore, nearly one-third of the student body comes from communal or ejido families, which reinforces their direct connection to natural resources, forests, and the territory (Secretaría de Desarrollo Sustentable. Dirección General de Áreas Naturales Protegidas 2024).

In this sense, the students are not only receiving technical training in environmental subjects but also living daily in territories where climate change has real and visible effects, such as reduced runoff, increased forest fires, and greater water stress. This gives them dual conditions: they are both a vulnerable population and potential promoters of community resilience and adaptation.

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Therefore, these results confirm the relevance of the school's pedagogical approach, as well as the opportunity to strengthen its role as a training space for environmental promoters with critical awareness, territorial sensitivity, and the capacity for civic engagement, aligned with the principles of the 2030 Agenda and sustainable development with social justice.

Perception of Climate Change and Willingness to Act

The results obtained from the applied instrument provided key information to assess the potential role of students as agents of change in the face of climate change. When asked how much they believe that climate change threatens their personal health and safety, 38.7% of students rated this threat as high. Although this figure does not represent a majority, it is significant because it shows that more than one-third of the student body recognizes a direct link between the global climate phenomenon and their everyday lives, constituting a first step toward the awakening of situated environmental awareness. This perception of risk is fundamental in terms of environmental education, since various studies (Fernández, DC, Gómez-Gonçalves, A., y Sánchez-Barbero, B. 2023; Akerlof *et al*., 2010) have demonstrated that personal identification with the impacts of climate change increases the likelihood of commitment and action. In this case, the data suggests that at least a significant portion of the students already internalize climate change as a concrete and present threat, rather than a distant or abstract phenomenon.

In line with this perception, students were asked how likely they would be to recommend that family members or friends promote activities that reduce global warming or encourage more sustainable lifestyles. 27.9% indicated that they would probably do so, which reflects an initial willingness to exert social influence within their immediate environment, although still with some uncertainty or hesitation that could be addressed through the strengthening of their environmental education and communication skills. Both responses reveal that the students of the Escuela Preparatoria Comunitaria de Tres Marías are beginning to position themselves as subjects capable of acting, especially when climate change is perceived as a threat that can affect their health, safety, or community.

This connection between risk perception and willingness to promote sustainable actions can become a catalyst for transformative educational processes if accompanied by participatory methodologies, community projects, and deliberate spaces.

Thus, although the percentages are not yet a majority, the results allow us to affirm that there is a significant core of students with active environmental awareness and a disposition to influence their surroundings, which supports the relevance of their technical training and their potential as environmental promoters within the territorial context in which they live and study.

Global Climate Knowledge and Gaps in the Understanding of National Policies.

The results in this regard showed a high general awareness of the existence of climate change. As illustrated in Figure 4, 93.3% of students stated that global temperatures have increased over the past decade due to human activities. Likewise, 64% reported being aware of global initiatives or policies aimed at addressing the issue, suggesting that young people are exposed to international narratives about the problem. However, this awareness did not translate equally to the national level: 71% of respondents said they were not familiar with Mexico's environmental policies, revealing a significant gap between the global climate discourse and the local institutional framework's appropriation.

Box 4

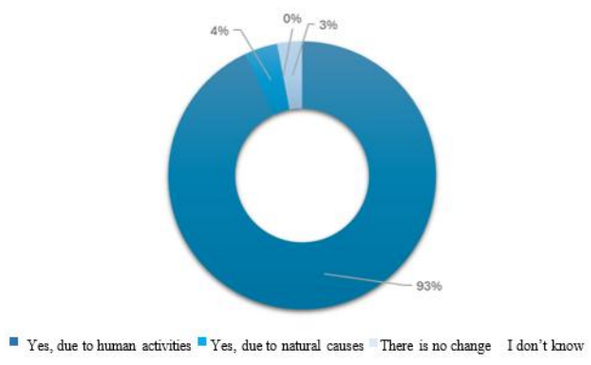

Figure 4

Students' perception regarding the causes of the planet's temperature increases over the past decade.

Source: Author's own elaboration

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This gap was also reflected in the students' self-assessment of specific knowledge. Although most students reported having a "slightly broad" understanding of topics such as aerosols (32.5%), greenhouse gases (31%), and ocean currents (26.3%), only 29.4% stated that they had an extensive understanding of the phenomenon of deforestation, and just 26.3% claimed to have a "moderately broad" knowledge of climate change in general.

It is noteworthy that the El Niño phenomenon is largely unknown among students, 34.8% stated "I know nothing about it", despite its direct relevance to the region's climatic variability (Figure 5). These data suggest that, although there is environmental awareness, a deeper and more contextualized technical understanding is still lacking, representing both a challenge and an opportunity to strengthen the educational dimension of the technical programs offered at high school.

Box 5

Figure 5
Students' knowledge scale regarding the El Niño phenomenon.
Source: Author's own elaboration

Media and Trust in Information about Climate Change: A Comparative Reading

In the study conducted by Jiménez-Ávila, Sánchez Salina y Ortiz-Hernández (2014), it was observed that traditional media, especially television and newspapers, played a significant role in shaping the perception of climate change among upper secondary students. In contrast, the current results show a notable shift in the channels through which students access climate-related information. While television (13.5%) and school/university (13.5%) still maintain some presence, it is now the Internet (14%) where students most frequently hear about climate change (Figure 6).

This transition reflects a transformation in young people's information consumption habits, as they now rely primarily on digital platforms, which are more fragmented and constantly updated.

Box 6

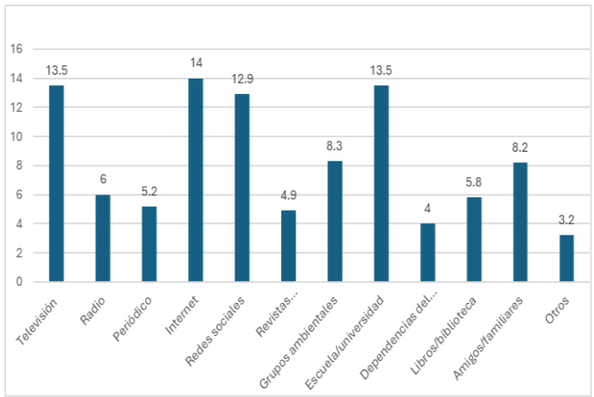

Figure 6
Platform through which students obtain information about climate change
Source: Author's Own Elaboration

However, this shift toward digital media also appears to be accompanied by skepticism toward non-specialized sources. When asked about their level of trust in different sources of information on climate change, as shown in Figure 7, students expressed greater confidence in teachers and scientists (71.3%) and environmental organizations (68.2%), while assigning lower trust to mass media (42.6%), friends (42.6%), and government agencies (50.3%).

This finding reveals an interesting paradox: although the Internet is the main channel of exposure, it is not necessarily regarded as a reliable source. This can be interpreted as a sign of distrust toward the quality and accuracy of information in the digital environment, while academic and scientific expertise is valued as a guarantee of credibility.

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Box 7

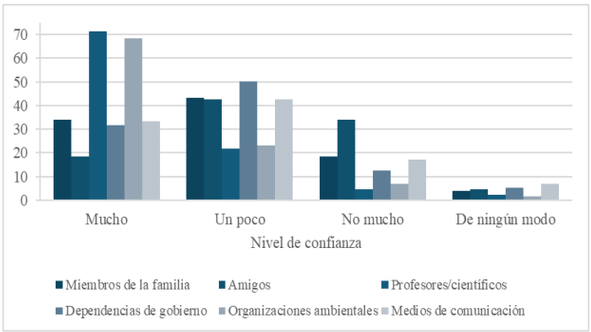

Figure 7

Trustworthiness of information related to climate change

Source: Author's Own Elaboration

Moreover, it is revealing that previously more frequently consulted media—such as radio (6%), books/libraries (5.8%), newspapers (5.2%), and academic journals (4.9%)—now play only a marginal role in the socialization of environmental knowledge. This decline may be due to their limited accessibility, less interactive formats, or lack of immediate updates compared with new digital platforms.

Taken together, these results suggest that environmental education should not rely solely on media exposure but rather be strengthened within the school setting by integrating critical pedagogical strategies that teach students to analyze, validate, and contrast the information they receive, especially in digital environments. They also highlight the need to enhance the role of teachers as key agents in developing climate awareness, given the high level of trust students place in them as reliable sources of knowledge. Finally, when compared to the 2014 study, there is a clear shift from traditional channels to digital platforms, without a corresponding increase in trust, pointing to the need for new educational strategies that integrate media, content, and critical thinking regarding climate change.

Perceptions of Responsibility and Individual and Collective Commitment toward Climate Change

The results reflected a shared vision of responsibility for climate change, in which students identified both institutions and individuals as accountable actors. 56.5% considered that local governments (state and municipal) should bear the primary responsibility for addressing this issue, followed closely by individuals (55.1%) and environmental organizations (54.2%).

This finding indicates a conception of climate action as a distributed task, with a strong emphasis on local levels—both institutional and civic. Less confidence was placed in national governments (33.3%) and international organizations (36.4%), suggesting a critical distance toward large political structures, perhaps influenced by the perception of limited action or effectiveness.

Regarding attitudes toward individual actions, Figure 8 shows that 41.1% of students completely agreed that each person can help reduce the effects of climate change, indicating an internalization of personal agency. Meanwhile, 34.1% strongly supported mandatory energy consumption reduction if it contributes to mitigating global warming, and 32.5% expressed a commitment to actively participate in environmental initiatives, reflecting a clear inclination toward ecological activism.

Box 8

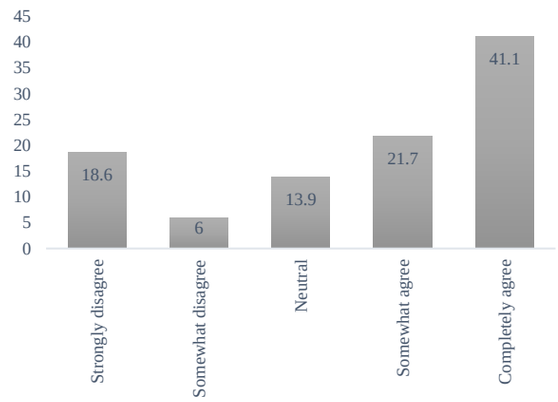

Figure 8

Responsibility for each person in actions related to climate change

Source: Author's Own Elaboration

In contrast, only 25.5% of students considered climate change to be inevitable due to modern society, and 40.3% strongly rejected the idea that it is an unmodifiable natural phenomenon, demonstrating a level of scientific literacy that distinguishes between natural and anthropogenic causes. Likewise, 49.6% completely disagreed with the statement that cutting down trees to build infrastructure is not serious, while similar percentages rejected both the minimization of climate change by the media (42.6%) and the notion that there are more important issues (41.1%).

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These positions were reinforced by the predominant environmental motivations behind their daily behavior. Activities such as planting trees (86.1%), recycling (79.8%), and participating in campaigns (79.1%) are mainly carried out for environmental reasons, indicating a strong pro-environmental orientation in their personal decisions. Although some practices are also linked to economic savings, such as using public transportation, ecological commitment remains the primary motivation for most actions.

Regarding the perception of actions by different actors, students expressed, as shown in Figure 9, greater confidence in environmental groups (74.4%) and international organizations (51.9%) as entities taking concrete measures. However, they identified industries (55.1%) and citizens themselves (49.6%) as actors not taking sufficient initiatives, while national and regional governments were perceived as involved "to some extent" (44.9% in both cases). This reinforces the idea that, although environmental awareness is growing among young people, there is a perceived gap between that awareness and the broader institutional and civic action.

Box 9

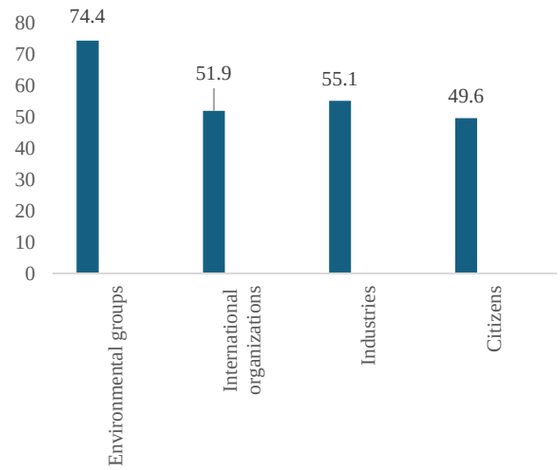

Figure 9

Students' trust in actions related to climate change

Source: Author's Own Elaboration

Finally, the open-ended comments reinforced the need for more information, awareness, and environmental education: 17.8% proposed more educational campaigns, 12.4% called for waste and pollution reduction, and 9.3% directly mentioned the need for greater awareness and knowledge about the effects of climate change.

Taken together with the rest of the analysis, these responses confirm that students not only have a clear understanding of the issue but also a willingness to act, even while recognizing significant structural and social barriers to effective transformation.

Overall, the students of the Escuela Preparatoria Comunitaria de Tres Marías demonstrated a critical, informed, and committed stance toward climate change, identifying multiple levels of responsibility while emphasizing the need to strengthen local, community, and institutional action. This perception further supports their potential as agents of environmental change, capable not only of modifying individual habits but also of influencing their territories through a logic of socio-ecological co-responsibility.

Conclusions

Regarding the general hypothesis of the study, which proposed that the students of the Escuela Preparatoria Comunitaria de Tres Marías have the potential to become environmental change agents in the face of climate change, given their contextualized technical training, pro-environmental attitudes, and critical awareness of their surroundings, the findings support this assumption.

A very high percentage of students (93.3%) recognized that global temperature has increased in the last decade and attributed it primarily to human activities. This confirms an adequate level of basic environmental literacy, validating one of the central premises of the hypothesis.

A significant portion of the student body (41.1%) completely agreed that each person can contribute to reducing the effects of climate change, while a similar percentage expressed willingness to act through responsible consumption and participation in campaigns. This supports the idea that students not only possess knowledge but also demonstrate attitudes consistently with an active role as environmental promoters. Although students reported being familiar with global climate policies (64%), 71% stated that they do not know Mexico's environmental policies, suggesting an informational gap that may limit their participation in government programs.

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This gap represents an educational opportunity rather than a contradiction of the hypothesis, reinforcing the importance of strengthening the curriculum.

The high level of trust placed in teachers and scientific organizations (over 70%) confirms the school's key role as a mediator between technical knowledge and community action. This demonstrates that the educational environment is a strategic channel for empowering youth as agents of change.

In activities such as recycling, tree planting, and energy saving, the main motivations expressed by students are environmental rather than economic. This finding is fundamental to conclude that there is a student profile with values aligned with sustainability, which is an essential component of an environmental change agent.

Although students acknowledged the responsibility of local and national governments, many perceived that citizens and industries are not acting sufficiently. This diagnosis reveals a critical stance toward social actors and reinforces the notion of youth agencies: students are not waiting for external solutions; they see themselves as part of the solution.

The students' belonging to ejido communities within the Chichinautzin Biological Corridor and their technical forestry or community-oriented training provide them with a privileged framework to apply their knowledge, join environmental programs, and assume territorial leadership.

The set of results confirms the study's hypothesis: students of the Escuela Preparatoria Comunitaria de Tres Marías possess foundational knowledge, pro-environmental attitudes, a willingness to act, and strong territorial roots. All these elements position them as environmental change agents with the potential to influence their communities through technical, educational, and participatory actions in response to climate change.

Compared with the 2014 study, it was found that although students at that time were aware of climate change, their knowledge was often fragmented and ambiguous.

In contrast, in the current study, over 90% identified the temperature increase as a real phenomenon caused by human activity, and more than 60% fully agreed with key statements such as "climate change is happening now" and "it represents a serious global and personal threat." This shows a significant improvement in conceptual understanding of the phenomenon.

While in 2014 awareness did not necessarily translate into action, in 2025 a higher percentage of students expressed willingness to participate in environmental activities, change their habits, or promote awareness among family and friends, suggesting a shift from passive perception to active agency.

In 2014, students had moderate trust in the media and government as sources of environmental information. In contrast, the current study shows greater skepticism toward these actors and a transfer of trust to teachers and scientists. This may indicate a strengthening of critical awareness as well as a more questioning sociopolitical environment.

Despite the overall progress, there remains a lack of knowledge about national environmental policies: more than 70% of students reported not knowing them, an issue that was already present in 2014. This reflects a continuing structural problem in how such policies are communicated and taught within the educational system.

In 2014, television was the main source of information; by 2025, while it remains present, the Internet and social media have gained greater importance, though they still inspire low trust as sources of information. This presents new challenges for environmental media education.

In comparison with 2014, the current findings show that the level of awareness, understanding, and willingness to act on climate change has substantially improved among upper secondary students in Morelos, particularly within the technical and territorial context of Tres Marías. However, significant gaps remain in knowledge about national environmental policies and trust toward certain institutional actors, highlighting the need to reinforce comprehensive educational strategies with territorial, political, and participatory approaches.

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This progress in student perception and agency strengthens the role of the Escuela Preparatoria Comunitaria de Tres Marías as a seedbed of eco-citizens capable of influencing local and regional contexts in the fight against climate change.

Declarations

Conflicts of Interest

The authors declare no conflicts of interest. There are no known financial or personal relationships that could have influenced the results and conclusions presented in this article.

Authors' Contributions

Silveyra-Rosales, Mariana Teresa: Conceptualization, Formal analysis, Investigation, Methodology, Supervision, Validation, Visualization, Writing – original draft.

Sandoval-Manrique, Juan Carlos: Conceptualization, Formal analysis, Investigation, Methodology, Validation, Project administration, Resources.

Machorro-Onofre, Ana Rosa: Conceptualization, Data curation, Investigation, Methodology.

Availability of data and materials

All data obtained in this research are available.

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Abbreviations

CC – Climate Change
ANP – Protected Natural Area
UAEM – Universidad Autónoma del Estado de Morelos
INEGI – National Institute of Statistics and Geography

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