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# CLIMATE EMERGENCY AND EDUCATION – IMPACTS ON THE ENVIRONMENT AND THE TRANSFORMATION OF THE SCHOOL CURRICULUM BY LAW 14.926 OF 2024

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Revista ARACÊ
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**ABSTRACT**

The climate emergency, aggravated by the global risks of environmental degradation, demands significant changes in the school curriculum, as provided for in Law 14.926/2024. This article analyzes the impacts of the climate crisis on the environment and the insertion of educational approaches focused on sustainability and planetary citizenship in the Brazilian context. Based on the theoretical centrality of Ulrich Beck's "Risk Society" (2011) among other authors, it discusses how modernity intensifies global dangers and demands new management and awareness models. Thus, the research explores how the educational system can act as an agent of mitigation and adaptation to climate change. Law 14.926/2024, which introduces mandatory guidelines for climate education in basic education, is analyzed as a regulatory framework for the inclusion of interdisciplinary content and critical pedagogical practices that promote the understanding of climate phenomena and their social, economic, and cultural implications. This study considers that the implementation of climate education must transcend the mere transmission of scientific information, incorporating ethical, political, and community reflections. That said, the research is qualitative (Minayo, 2016), descriptive, bibliographical (Gil, 1999) and comprehensive (Weber). The analysis shows how the integration of climate issues into the school curriculum reflects the challenges of education in the 21st century to face the environmental crisis, highlighting the transformative role of schools in promoting socio-environmental justice and strengthening ecological citizenship.

**Keywords:** Climate Emergency. Climate Education. Risk Society. Law 14.926/2024.

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Revista ARACÊ
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## INTRODUCTION

CLIMATE CHANGE AND SCHOOL CURRICULUM: IMPACTS AND CHALLENGES FOR SUSTAINABILITY – INTRODUCING

Climate change is widely recognized as a direct and indirect consequence of human activities, especially after the Industrial Revolution. The intensive use of fossil fuels, deforestation, and changes in land use have contributed to the significant increase in the concentration of greenhouse gases in the atmosphere. These gases intensify global warming, a phenomenon that raises the Earth's average temperatures and disrupts global climate systems. Studies indicate that, since 1850, 11 of the 12 hottest years on record occurred between 1995 and 2006, demonstrating the severity of the problem (Ghini et al., 2011, p. 17).

> The concentration of carbon dioxide (CO2) in the atmosphere has reached values significantly higher than those observed in the last 800 thousand years (Lüthi et al., 2008) and, in this decade, its growth rate is markedly higher than in previous decades (Canadell et al., 2007). A similar situation was observed for methane (CH4), nitrous oxide (N2O) and other greenhouse gases. From the beginning of the Industrial Revolution until 2005, the concentration of CO2 in the atmosphere increased from 280 ppm to 379 ppm; CH4, from 580–730 ppm to 1774 ppm; and N2O, from 10 ppb to 319 ppb (IPCC, 2007; Spahni et al., 2005). In early 2010, the recorded concentration of CO2 in the atmosphere was 389 ppm. In addition to the increase in greenhouse gas concentrations, mainly caused by the use of fossil fuels, changes in land use, such as deforestation, and other human activities are factors responsible for climate change (IPCC, 2007). As a result, several changes in the climate have been recorded. The average surface temperature of the planet has increased by 0.2°C per decade over the last 30 years (Hansen et. al., 2006). Eleven of the twelve hottest years ever recorded by instruments since 1850 occurred between 1995 and 2006 (Ghini et. al., 2011, p. 17-18).

Integrating the components of the Earth system is essential to understanding the global impacts of climate change. Changes in temperature, rainfall patterns, and extreme weather patterns are interconnected, affecting both natural and social environments. The Amazon, for example, plays a vital role in regulating global climate, but its degradation compromises this balance and intensifies the effects of climate change on a planetary scale (Abdala, 2015, p. 5).

> In addition to the increase in the concentration of greenhouse gases, mainly caused by the use of fossil fuels, changes in land use, such as deforestation, and other human activities are factors responsible for climate change (IPCC, 2007). As a result, several changes in the climate have been recorded. The average surface temperature of the planet has increased by 0.2°C per decade over the last 30 years (Hansen et al., 2006). Eleven of the twelve hottest years ever recorded by instruments since 1850 occurred between 1995 and 2006. Changes in the water cycle have also been observed and changes are expected to continue occurring, even if greenhouse gas concentrations stabilize, due to the thermal inertia of the system and the long period required to return to equilibrium (IPCC, 2007) (Ghini et al., 2011, p. 18).

Revista ARACÊ
ISSN: 2358-2472

The impacts of climate change encompass several areas, including human health, ecosystems, infrastructure, and agriculture. In health, extreme weather events, such as heat waves, increase the risk of cardiovascular and respiratory diseases. In Brazil, floods and droughts have directly affected the water and food security of vulnerable populations (Rodrigues Filho et al., 2016, p. 75). Ecosystems face intense pressures, with the loss of biodiversity and the degradation of habitats. Infrastructure and energy are also suffering, with damage caused by storms and interruptions in power supply. In the agricultural sector, crops such as soybeans and corn are facing reduced productivity due to changes in rainfall patterns, while new agricultural diseases are emerging (Ghini et al., 2011, p. 19). Coastal areas, such as those in northeastern Brazil, are facing rising sea levels and increased erosion, putting coastal communities and habitats at risk (Rodrigues Filho et al., 2016, p. 74).

> Several other effects are occurring, both in the physical and biological environment, due to the scope and interrelationship between the affected compartments. Climate change has manifested itself in several ways, among which “global warming” stands out, a term used to identify the phenomenon of the increase in the planet’s temperature. However, extreme weather events, changes in rainfall patterns, disturbances in ocean currents, glacier retreat, and rising sea levels are also being observed with greater frequency and intensity. of the sea level. The term “global environmental change” encompasses this broad range of events, including increases in atmospheric CO2 concentrations, ozone (O3) in the troposphere (from the planet’s surface to 10 km above sea level), and other impacts. The terms “biospheric change” or “global change” have also been suggested because they involve the concept that complex interactions occur between the physical and biological environments (Ghini et. al., 2011, p. 19).

Raising awareness of the severity of the climate emergency is essential to mobilize society and implement effective changes. Law 14.926/2024 represents an important milestone in integrating climate education into the school curriculum, promoting an interdisciplinary approach to raise awareness among young people about the need for conscious consumption and sustainable practices. This curricular inclusion enables future generations to develop a critical understanding of climate challenges and their social and economic implications (Law 14.926, 2024). Furthermore, promoting environmental preservation in schools is essential to transform behaviors and reduce human impacts on the environment.

> Art. 5 [...] VIII – encouraging individual and collective participation, including schools at all levels of education, in prevention, mitigation, and adaptation actions related to climate change and in halting the loss of biodiversity, as well as in education aimed at the perception of risks and vulnerabilities to socio-environmental disasters. Art. 10, § 4 The inclusion of topics related to climate change, biodiversity protection,

Revista ARACÊ
ISSN: 2358-2472

> socio-environmental risks and emergencies, and other aspects related to environmental issues will be ensured in institutional and pedagogical projects for basic and higher education, by guidelines established by the National Education Council, in the exercise of its legal powers (Law 14,926/2024, p. 5).

The proposed research seeks to answer how climate education, based on Law 14.926/2024, can be used as a tool to promote a more conscious and sustainable society. It aims to analyze the effectiveness of pedagogical and curricular practices aimed at addressing climate change in Brazil. This study is relevant for both society and academia, as it contributes to advancing the debate on sustainability and climate justice, in addition to offering insights into public policies that connect education and climate action (Beck, 2011, p. 12).

## INTERTWINING THEORIES AND METHODS: THE QUALITATIVE APPROACH IN THE CLIMATE EMERGENCY

Qualitative research stands out for its ability to explore and interpret the meanings attributed to social phenomena, being essential to understanding the complexity of the object of study. According to Minayo (2007, p. 15), "[...] social reality is richer than any theory, thought or discourse that we can develop about it". This method allows for the theoretical reconstruction of processes, relationships, and symbols that emerge from social reality, providing an approximation to the richness of meanings present in life in society. Furthermore, qualitative research articulates theory with practice, allowing for a deeper and more detailed analysis of social dynamics, something that is particularly relevant for understanding complex and multifaceted phenomena. As Minayo (2007, p. 17) emphasizes, "[...] subjectivity, intrinsic to social reality, requires methods that consider the experiences and interpretations of the subjects involved".

> Qualitative research responds to very specific questions. In the Social Sciences, it deals with a level of reality that cannot or should not be quantified. In other words, it works with the universe of meanings, motives, aspirations, beliefs, values , and attitudes. This set of human phenomena is understood here as part of social reality since human beings are distinguished not only by acting but by thinking about what they do and by interpreting their actions within and based on the reality experienced and shared with their peers (Minayo, 2007, p. 21).

Bibliographic research plays a fundamental role in providing the theoretical basis necessary for the development of qualitative studies. According to Gil (2008, p. 50), "[...] bibliographic research enables the researcher to build a solid knowledge base, identifying

Revista ARACÊ
ISSN: 2358-2472

and analyzing the main theoretical contributions related to the object of study". Through the analysis of already consolidated sources, it is possible to understand the main approaches on the topic, identify gaps in existing knowledge, and direct investigative efforts. The relevance of bibliographic research also lies in its ability to offer a broad and detailed overview of the state of the art on the topic in question, assisting in the formulation of hypotheses and the delimitation of the research problem. According to Gil (2008, p. 50), one points out Gil (2008, p. 52), "[...] a theoretically well-founded research is essential for the validity and consistency of qualitative analyses".

> Bibliographic research is developed from previously prepared material, consisting mainly of books and scientific articles. Although almost all studies require some type of work of this nature, there are studies developed exclusively from bibliographic sources. Some exploratory studies can be defined as bibliographic research, as can a certain number of studies developed from the content analysis technique. The main advantage of bibliographic research lies in the fact that it allows the researcher to cover a much broader range of phenomena than that which could be researched directly. This advantage becomes particularly important when the research problem requires data that is widely dispersed throughout space (p. 51).

The relationship between qualitative research and bibliographic research is intrinsic and complementary, especially in the context of complex social investigations. While qualitative research, as highlighted by Minayo (2007, p. 14), "[...] seeks to understand the meanings, contexts, and relationships underlying social phenomena", bibliographic research provides the theoretical basis necessary to interpret and deepen these meanings. In this sense, bibliographic research serves as a starting point to delimit the object of study and build a consistent theoretical framework, which guides the researcher throughout the investigative process. As emphasized by Minayo (2007, p. 19), "[...] no qualitative research can do without a theoretical framework that allows it to critically engage with the different perspectives already existing on the topic". Thus, the interaction between these approaches strengthens the researcher's ability to contextualize qualitative data, enriching the analysis and expanding the understanding of the object under study.

The object of this research emerged from the identification of gaps in the existing literature and the need to better understand the social and environmental impacts of development policies. The first steps included a broad literature review on the topic, followed by the definition of guiding questions that directed the collection and analysis of data. According to Neves et al. (2015, p. 6), "[...] energy expansion policies often ignore long-term social and environmental impacts, highlighting the need for critical and integrated

Revista ARACÊ
ISSN: 2358-2472

studies". During the development of the study, methodological approaches were adopted that prioritized qualitative analysis, ensuring a deep understanding of the dynamics investigated.

> The practical relevance of the problem lies in the benefits that can arise from its solution. Many studies are proposed by government agencies, professional associations, companies, educational institutions, or political parties, aiming at the practical use of their results. Thus, the problem will be relevant to the extent that the answers obtained bring favorable consequences to those who proposed it. When speaking of the practical relevance of the problem, it is also important to consider it from a social point of view. In this sense, several questions can be formulated: What is the relevance of the study for a given society? Who will benefit from solving the problem? What are the social consequences of the study? (Gil, 2008, p. 57).

The analytical bias of this research is enriched by the Weberian perspective, which emphasizes the importance of interpretation in the study of social actions. For Weber (1978, p. 7), "[...] social science must seek to understand human behavior based on the meaning that individuals attribute to their actions". This analytical approach is crucial to investigate social phenomena comprehensively, considering the subjective and structural dimensions that constitute them. The application of this analytical bias allows for a detailed analysis of the interactions between social agents and the broader context in which they are inserted, contributing to the production of knowledge that transcends superficial and reductionist explanations.

> The comprehending authors are not concerned with quantifying and explaining, but rather with understanding: this is the verb of qualitative research. Understanding relationships, values, attitudes, beliefs, habits, and representations and, based on this set of socially generated human phenomena, interpreting reality (Minayo, 2012). The researcher who works with qualitative strategies works with the raw material of experiences, experiences, and everyday life and also analyzes structures and institutions, but understands them as objectified human action. For these thinkers and researchers, language, symbols, practices, relationships, and things are inseparable. If we start from one of these elements, we have to reach the others, but they all pass through human subjectivity (Minayo, 2016, p.23). ).

## ENVIRONMENTAL EDUCATION AND SUSTAINABILITY: SCHOOL INTEGRATION TO ADDRESS CLIMATE CHANGE

The relationship between consumption and sustainability is a central aspect of contemporary debates on climate change. Beck (2006) points out that "[...] the global risk society emerges as a direct consequence of industrial modernization, where unbridled consumption patterns become a threat not only to the environment but to the very sustainability of civilization" (p. 329). This dynamic reflects an economic model that

Revista ARACÊ
ISSN: 2358-2472

prioritizes unlimited growth, without considering ecological limits and social implications. According to the author, consumption must be reassessed to integrate practices that consider environmental impacts and promote a transition to more sustainable standards.

In the Brazilian context, climate policies demonstrate the challenge of balancing economic development and sustainability. Beck (2006) also highlights that "[...] the contradictions between economic growth and environmental protection remain evident, especially in societies where social inequality exacerbates disparities in access to resources and environmental responsibility" (p. 331). Thus, the promotion of conscious consumption, which takes into account planetary limits and social impacts, becomes an urgent need to ensure a more balanced relationship between human development and the environment.

> [...] the risk society is not just a metaphor for modern dangers, but a reality shaped by industrialization processes that systematically ignore ecological limits. The ecological risks generated by globalized industrial consumption have the potential to transform material wealth into environmental catastrophes, creating an intrinsic contradiction between the desire for progress and environmental costs. Sustainability, in this context, is not just an ideal, but a necessity that requires the redefinition of consumption patterns and collective responsibility to avoid environmental collapse (Beck, 2006, p. 331).

Beck's (2006) analysis of the risk society highlights how modern industrialization processes disregard ecological limits, resulting in disastrous consequences for the environment and society. In Brazil, this model is reflected in consumption practices and economic development, especially in sectors such as agriculture and mining. For example, deforestation in the Amazon, driven by agricultural expansion and resource extraction, exemplifies the contradiction between the pursuit of economic progress and environmental costs. As pointed out by Abdala (2015), "[...] deforestation not only reduces biodiversity but also compromises global climate regulation, amplifying the impacts of climate change" (p. 8).

In addition, consumption patterns that promote the overexploitation of natural resources exacerbate social inequalities, a characteristic highlighted by Beck (2006). In Brazil, the pursuit of economic growth often favors the interests of large corporations to the detriment of local communities and traditional peoples. One example is the construction of large hydroelectric plants in the Amazon, which displace indigenous populations and degrade ecosystems essential for climate sustainability. According to Neves et al. (2015),

Revista ARACÊ
ISSN: 2358-2472

"[...] these policies prioritize energy expansion without considering long-term social and environmental impacts" (p. 6).

> [...] The current economic model is based on practices that externalize environmental costs, exacerbating social inequalities and exploiting natural resources in an unsustainable manner. He argues that "the environmental costs incurred by economic processes often form what economists call 'externalities', which are not paid by those who incur them" (Giddens, 2009, p. 82).

The need to redefine consumption patterns and promote sustainability is evident in several Brazilian initiatives. Programs such as the Low Carbon Agriculture Plan (ABC) aim to reduce greenhouse gas emissions in agriculture and increase the sector's resilience to climate change. However, as Rodrigues Filho et al. (2016) points out, "[...] the implementation of these policies is often limited by the lack of integration between the environmental and economic spheres, hindering a sustainable transition" (p. 75).

The ABC Plan – Low Carbon Agriculture – was launched in 2010 to reduce greenhouse gas emissions in agriculture and promote the sector's adaptation to climate change. Among the actions contemplated, the recovery of degraded pastures, crop-livestock-forest integration, the direct planting system, biological nitrogen fixation, and the treatment of animal waste stand out. These initiatives aim to align Brazilian agricultural production with global demands for more sustainable practices. However, the implementation of the plan faces There are significant challenges, including the lack of integration between sectoral policies and limitations and inadequate financing, which hinder an effective transition to low-carbon agricultural practices (Rodrigues Filho et. al., 2016, p. 75).

That said, in recent years, Brazil has faced a series of natural disasters that highlight the direct impacts of climate change. Events such as floods, prolonged droughts, and landslides have caused significant losses in several regions. According to Rodrigues Filho et al. (2016), "[...] climate impacts in Brazil are intensified by social vulnerabilities and economic dependence on natural resources, evidencing an intrinsic relationship between environmental quality and quality of life" (p. 74). These disasters reveal the urgency of more robust public policies for adaptation and mitigation of the effects of climate change.

The intensification of extreme weather events, such as drought in the Northeast and floods in the South, reflects the change in rainfall and temperature patterns. Studies indicate that "[...] the increase in the frequency and intensity of tropical storms create more favorable conditions for the spread of agricultural diseases and damage to infrastructure"

Revista ARACÊ
ISSN: 2358-2472

(Hamada et. al., 2011, p. 90). In addition, landslides in urban areas are aggravated by irregular occupation and lack of urban planning, highlighting the role of climate change in amplifying socio-environmental risks.

Events such as the water crisis in São Paulo, recorded in 2015, demonstrate the direct relationship between climate change and the availability of water resources. The change in rainfall patterns, with prolonged periods of drought followed by intense rains, compromises both water supply and agriculture. According to studies, "[...] the concentration of rainfall in specific periods increases the risk of flooding and water stress, directly impacting the food and water security of the population" (Rodrigues Filho et al., 2016, p. 75).

In addition, rising sea levels and coastal erosion put coastal communities and marine ecosystems at risk, especially in the Brazilian Northeast. These impacts highlight the need for integration between environmental and social policies, aiming to reduce the vulnerability of the most affected populations. As pointed out by Ghini et al. (2011), "[...] mitigating the effects of climate change depends on coordinated efforts that involve both local adaptation and addressing the global causes of warming" (p. 19).

> Socio-environmental vulnerabilities are ultimately the result of the dynamics of the development model, with emphasis also on the precariousness of the State in dealing with these issues, especially in developing countries. The reality of these countries, such as Brazil, is marked by the low-income level of the majority of the population, by the difficulty in accessing housing, especially in cities, which have grown excessively in recent decades, by the lack of sanitary conditions (access to drinking water and sewage treatment) for a large part of the population, by inadequate access to health and education services, among others (Abramovay, 2010). These factors make the poorest populations the most vulnerable and least resilient in frequent situations of extreme climate events, such as the rains that devastated the mountainous region of Rio de Janeiro in 2011. The delay in structural actions for these groups will only contribute to reducing resilience, which is already low (Neves et. al., 2015, p. 6).

Climate change amplifies socio-environmental vulnerabilities already present in developing countries, such as Brazil, where structural inequalities aggravate the impacts of extreme climate events. According to Neves et al. (2015), the lack of effective public policies to address social and environmental inequalities has contributed to the inability of vulnerable groups to adapt to extreme climate events, such as floods and landslides. These challenges are closely linked to precarious access to basic services, such as health, sanitation, and housing, which reduces the resilience of populations exposed to frequent environmental risks (p. 6).

Revista ARACÊ
ISSN: 2358-2472

The relationship between climate change and environmental education emerges as a necessary response to address these vulnerabilities. According to Law 14.926/2024, integrating climate education into the school curriculum is a crucial step towards raising awareness among future generations about ecological risks and the need for more sustainable practices. This approach recognizes that "[...] education is one of the main instruments for promoting behavioral changes and preparing young people for a world increasingly impacted by climate change" (Law 14.926/2024, p. 5). Through teaching about conscious consumption and conservation, Through environmental education, it is possible to empower communities to deal more effectively with the challenges posed by climate change.

> Including topics related to climate change and biodiversity protection in school curricula is essential to fostering a culture of sustainability. Integrating climate education into the educational environment promotes critical reflection on environmental impacts and empowers students to actively participate in local solutions to global problems. Furthermore, environmental education has the potential to prepare young people to deal with the challenges posed by a world increasingly impacted by climate change (Law 14.926/2024, p. 5).

Furthermore, environmental education plays a transformative role in creating more inclusive public policies. Beck (2006) highlights that "[...] climate change requires a profound reassessment of consumption and development patterns, which can only be achieved through an educational process that connects local and global issues" (p. 331). In the Brazilian context, this means incorporating themes such as climate justice and social equity into school debates, promoting critical awareness of the relationship between social inequalities and environmental risks.

In this way, the implementation of climate education must transcend the classroom and involve the community as a whole. Initiatives such as school gardens and reforestation campaigns are examples of practices that can reinforce theoretical learning and generate a direct impact on local communities. These actions are in line with what Rodrigues Filho et al. (2016) identify as "[...] the need for coordinated efforts between local and global spheres to mitigate the impacts of climate change and strengthen the resilience of the most vulnerable populations" (p. 75). In this way, environmental education becomes a central tool in the search for a society that is better prepared for the challenges that arise in everyday life.

Revista ARACÊ
ISSN: 2358-2472

> The climate issue currently represents one of the greatest challenges facing humanity and its confrontation demands coordinated actions at all territorial scales. In Brazil in particular, research into climate change is strategic due to the high dependence of the economy on natural resources and ecosystem services, in addition to the vulnerability of urban populations to the effects of climate disasters. Therefore, the problem should not be studied in a sectoral manner (our emphasis): issues related to food, energy, and water security are highly interconnected, while the Brazilian food production and supply system is highly dependent on family farming. Understanding these interconnections is essential for planning public policies (Rodrigues Filho et. al., 2016, p. 75).

Law 14.926 of 2024 is a milestone in environmental education in Brazil, standing out for its importance in integrating climate and environmental education into the school curriculum. In a country like Brazil, with immense biodiversity and strategic natural resources, this initiative reflects the need to prepare future generations to understand and face environmental challenges. According to the text of the law,

"[...] the inclusion of topics related to climate change, biodiversity protection, and socio-environmental risks and emergencies in the school curriculum is essential to foster critical and responsible awareness among students" (Law 14,926/2024, p. 5).

The implementation of this law becomes even more relevant due to Brazil's strategic position as the guardian of natural resources, such as the Amazon, considered a global climate regulator. As Abdala (2015) points out, "[...] the Amazon provides invaluable environmental services, such as climate regulation and minimizing the impacts of extreme weather events" (p. 8). Incorporating environmental education into the curriculum is a way to promote understanding of the interdependence between ecological balance and human survival, in addition to highlighting Brazil's role in global environmental conservation.

> The Amazon biome represents not only an invaluable natural resource but also a crucial component in global climate balance. The forest acts as a gigantic carbon reservoir and a regulator of rainfall, affecting not only Brazil but also neighboring regions and even the global climate. However, economic and political pressures often jeopardize its conservation, requiring the formulation of robust policies that reconcile sustainable development with environmental protection (Abdala, 2015, p. 17).

In addition, the law recognizes that environmental education is an essential tool for reducing socio-environmental inequalities. According to Neves et. al. (2015), "[...] the most vulnerable populations are those most exposed to the impacts of climate change, due to precarious access to basic services and low water capacity. "city of resilience" (p. 6). Training and knowledge in environmental education not only allow for awareness of climate

Revista ARACÊ
ISSN: 2358-2472

change but also the promotion of ecological citizenship that contributes to reducing these inequalities and strengthening the resilience of communities.

Socio-environmental vulnerabilities are ultimately the result of the dynamics of the development model, and the precariousness of the State in dealing with these issues, especially in developing countries, also stands out. The reality of these countries, such as Brazil, is marked by the low-income level of the majority of the population, by the difficulty in accessing housing, especially in cities, which have grown excessively in recent decades, by the lack of sanitary conditions (access to drinking water and sewage treatment) for a large part of the population, by inadequate access to health and education services, among others. These factors make the poorest populations the most vulnerable and least resilient in situations of frequent extreme climate events, such as the rains that devastated the mountainous region of Rio de Janeiro in 2011. Postponing structural actions for these groups will only contribute to reducing their resilience capacity, which is already low (Neves et al., 2015, p. 6).

Another significant aspect of Law 14.926 is its interdisciplinary approach, encouraging connections between different areas of knowledge to address sustainability. Beck (2006) argues that “[...] climate education must connect local and global issues, promoting critical reflection on consumption patterns and the relationship with ecological limits” (p. 331). This approach is particularly relevant in Brazil, where economic development often conflicts with environmental conservation.

Integrating environmental education is also essential to encourage sustainable practices and mitigate environmental impacts. The law emphasizes that “[...] encouraging individual and collective participation in prevention, mitigation, and adaptation actions related to climate change is essential to the success of this policy” (Law 14,926/2024, p. 5). This guideline enables students and communities to develop local solutions to global problems, promoting sustainability as a core value in society.

> The public policy instruments analyzed give unequal priority to the dimensions of sustainability. In some, the ecological component receives greater emphasis, while in others the economic dimension predominates. In none of these instruments does the social dimension predominate over the others, and it may be considered to a greater or lesser extent, depending on the case. [...] The assessment of these aspects served as a guide to verify the contribution of the actions proposed in public policies for mitigation and adaptation, as well as to identify the relationship between economic growth and contributions to the social and environmental aspects present in each one (Neves et al., 2015, p. 9).

Revista ARACÊ
ISSN: 2358-2472

It is important to highlight that Law 14.926/2024 is an important evolution of Law 9.795/1999, as it introduces an even broader and more comprehensive approach to environmental education, with an emphasis on climate change and the protection of biodiversity (Santos, et. al., 2024). Each of the amended articles reinforces crucial aspects to integrate these issues systematically and effectively into the Brazilian educational system, providing greater environmental awareness and concrete action.

Art. 1 recognizes the urgency of addressing climate change and its socio-environmental impacts in the context of the National Environmental Education Policy. According to Neves et. al. (2015), "[...] the integration of environmental policies with education is essential to mitigate the vulnerabilities of populations and increase resilience in the face of climate disasters" (p. 6). This change formalizes the need to address these issues in a transversal manner, aligning the school curriculum with contemporary environmental demands.

In Article 5, sections VIII and IX highlight the central role of schools in collective mobilization for prevention, mitigation, and adaptation to climate change. These provisions encourage the creation of educational programs that promote practical and participatory actions, such as school reforestation projects or awareness campaigns on biodiversity. According to Beck (2006), "[...] environmental education should be a process that connects the local to the global, allowing individuals to understand their participation in planetary challenges" (p. 331). In addition, section IX connects environmental education to existing national policies, such as the National Policy on Climate Change, promoting an integrated vision between sectors.

Article 8, in its § 3, section II-A, advances by providing for the development of specific instruments and methodologies to ensure the effectiveness of educational actions. This includes teaching materials and resources for technological courses that address topics such as climate change and biodiversity loss dynamically and interactively. According to Rodrigues Filho et al. (2016), "[...] the creation of educational instruments focused on sustainability is essential to make learning meaningful and engage students in transformative practices" (p. 75). The excerpt that supports the information on Art. 8, § 3, item II-A, of Law 14.926/2024:

> I-A – the development of instruments and methodologies to ensure the effectiveness of educational actions for prevention, mitigation, and adaptation related to climate change and socio-environmental disasters, as well as to halt the loss of biodiversity (Law - National Environmental Education Policy, p. 2).

Revista ARACÊ
ISSN: 2358-2472

Thus, in Art. 10, § 4 ensures the mandatory inclusion of environmental themes in pedagogical projects for basic and higher education. This measure institutionalizes environmental education at all levels of education, strengthening awareness from childhood through to university education. Furthermore, § 5 requires supervision of these practices by the competent authorities, ensuring the implementation and quality of projects. This practical approach is essential to creating a culture of sustainability in schools and universities.

In Article 13, the sole paragraph, item VIII, reinforces the importance of raising awareness in society about climate challenges and biodiversity conservation. Awareness, as highlighted by Ghini et. al. (2011), "[...] is an essential element for transforming public perception of environmental risks and mobilizing collective actions in favor of sustainability" (p. 19). This article ensures that environmental education goes beyond the limits of educational institutions, reaching society more broadly and effectively.

Given this, Law No. 14,926, of July 17, 2024, represents a significant advance about Law No. 9,795, of April 27, 1999, in the scope of environmental education in Brazil. While the original law established the foundations for the National Environmental Education Policy, the new legislation introduced a more specific and urgent approach by including climate change, biodiversity protection, and the prevention of socio-environmental disasters as central axes. This change reflects the need to adapt environmental education to contemporary challenges, emphasizing its relevance for sustainable development. According to Neves et. al. (2015), "[...] the inclusion of climate issues in education is essential to prepare future generations to deal with the intensification of environmental impacts" (p. 6).

One of the main changes occurs in the expansion of Art. 5, which now emphasizes the encouragement of individual and collective participation in actions to mitigate and adapt to climate change and biodiversity loss. This inclusion reinforces the role of schools as spaces for civic education, connecting students to global issues and promoting practical actions that impact their communities. Beck (2006) highlights that "[...] environmental education must provide a direct connection between global problems and local practices, allowing individuals to see themselves as agents of change" (p. 331).

Another significant innovation is Article 8, which requires the development of instruments and methodologies to ensure the effectiveness of educational actions. This change recognizes the need for updated pedagogical tools, such as interactive teaching

Revista ARACÊ
ISSN: 2358-2472

materials and educational technologies, to engage students in practices that go beyond theoretical learning. According to Rodrigues Filho et al. (2016), “[...] educational instruments focused on sustainability are fundamental to promoting engagement and critical understanding of environmental challenges” (p. 75).

Article 10 has also undergone important changes, ensuring the mandatory inclusion of environmental themes in pedagogical projects at all stages of education. This requirement strengthens the transversality of environmental education and expands its scope, involving both basic and higher education. Furthermore, supervision by the competent authorities, provided for in § 5, aims to guarantee the quality and effective execution of institutional projects. Neves et al. (2015) note that “[...] supervision is essential to ensure that educational initiatives meet the guidelines and promote real impacts” (p. 6).

Art. 13 is another highlight, as it introduces awareness-raising in society as a central objective of environmental education. This change aims to transcend school boundaries and reach the entire community, promoting a culture of sustainability. As Ghini et al. (2011) point out, “[...] public awareness is a key element in mobilizing collective actions and transforming behaviors in favor of the environment” (p. 19). Thus, the law contributes to a broader and more effective mobilization in the face of climate challenges. environmental and socio-environmental issues.

The inclusion of topics related to climate change and biodiversity reflects a broader understanding of the role of environmental education as a mitigation and adaptation tool. While Law No. 9,795 established general guidelines, Law No. 14,926 advances by integrating the challenges of the 21st century in a more detailed and practical manner, aligning with the Sustainable Development Goals (SDGs). As Abdala (2015) points out, “[...] Brazil, with its rich biodiversity and strategic natural resources, has a global responsibility in promoting sustainable practices and environmental education” (p. 8).

> In recent years, the climate agenda in Brazil has evolved to include environmental education as an essential strategy in tackling climate change. This approach seeks to connect environmental and educational public policies, promoting awareness of global climate challenges and their local repercussions. As highlighted, ‘the integration of content on climate change and biodiversity into school curricula is a fundamental step towards preparing future generations for the challenges of the 21st century, in line with the Sustainable Development Goals (SDGs)’ (Article - O Clima em Transe, 2016, p. 90).

Improving climate change in the school environment requires the integration of content and practices that promote environmental awareness and action among students,

Revista ARACÊ
ISSN: 2358-2472

teachers and communities. According to Beck (2006), education plays a central role in transforming behaviors, since “[...] it is through awareness and critical reflection that young people become agents of change, able to challenge unsustainable consumption patterns” (p. 331). Thus, practices such as the creation of school gardens and recycling programs can be introduced to exemplify the importance of sustainable attitudes in everyday life. The inclusion of environmental issues in the school curriculum, as provided for by Law 14.926/2024, is an essential measure to encourage reflection on the impacts of climate change and the importance of preserving biodiversity. This approach must be interdisciplinary, connecting disciplines such as geography, biology, and social sciences to address sustainability in a comprehensive manner. According to the law, “[...] encouraging individual and collective participation in prevention, adaptation, and exemplification actions related to climate change is essential to engage students” (Law 14.926/2024, p. 5).

Another way to exemplify the impacts of climate change is to encourage the reduction of energy consumption and the promotion of renewable sources in schools. Neves et al. (2015) highlight that “[...] local actions such as the installation of solar panels and energy efficiency in schools can serve as an example for communities, demonstrating the benefits of sustainable practices” (p. 6). These initiatives not only reduce the environmental footprint of educational institutions, but also involve students in practical and educational activities.

In addition, the implementation of educational projects aimed at environmental preservation, such as reforestation campaigns and the protection of green areas near schools, is an effective strategy. Abdala (2015) notes that “[...] the protection of local ecosystems is a concrete action that can be promoted in partnership with the school community, generating positive impacts both for the environment and for collective awareness” (p. 8). These projects help students understand the role of forests in exemplifying climate change and maintaining ecological balance.

In addition, it is essential to promote awareness and education for conscious consumption among students. Ghini et al. (2011) state that “[...] the formation of a culture of sustainability in schools contributes to transforming individuals’ attitudes, positively impacting society as a whole” (p. 19). By including discussions about the impact of consumption on global warming and practices such as the conscious use of natural resources, schools can educate citizens prepared to face the climate challenges of the 21st

Revista ARACÊ
ISSN: 2358-2472

century. In this way, the school environment becomes a vital space for promoting a cultural and environmental transformation necessary to exemplify the impacts of climate change.

## CONCLUSION

The conclusion of this research highlights the urgency of integrating environmental education into educational practices in Brazil, considering the changes promoted by Law No. 14,926/2024. The legislation recognizes the relationship between consumption, sustainability and the challenges imposed by climate change, emphasizing the need to transform the educational system into a tool for environmental awareness and action. Beck (2006) observes that "[...] unbridled consumption patterns put global sustainability at risk, requiring a profound change in the way we how we educate future generations" (p. 329). In this context, schools become central spaces for fostering sustainable practices and promoting youth leadership.

The evolution of Law No. 9,795/1999 to Law No. 14,926/2024 reflects a broader vision of environmental education, including urgent issues such as climate change, biodiversity protection, and mitigation of socio-environmental disasters. As the new legislation points out, it is essential to ensure "[...] the inclusion of topics related to climate change, biodiversity protection, and socio-environmental risks and emergencies in the school curriculum" (Law 14,926/2024, p. 5). This strengthens the interdisciplinary approach and encourages the connection between theory and practice in learning.

Exemplifying actions in the school environment, such as community gardens and recycling programs, plays an important role in raising awareness among students and communities about environmental impacts. According to Abdala (2015), "[...] local actions aimed at preserving biodiversity and restoring degraded areas are essential to building a more resilient and conscious society" (p. 8). These activities not only teach sustainable practices, but also help build a deeper understanding of the relationship between healthy ecosystems and quality of life.

Environmental education is also essential to reducing social inequalities in the context of climate change. As Neves et al. (2015) note, "[...] the most vulnerable populations are often the most affected by extreme weather events, due to the lack of access to basic services and low resilience" (p. 6). The implementation of Law No. 14,926/2024 helps to correct this disparity, promoting an education that prepares students to face global challenges in an inclusive and sustainable way.

Revista ARACÊ
ISSN: 2358-2472

Finally, the importance of supervision and evaluation of institutional pedagogical practices is highlighted in Art. 10 of Law No. 14,926/2024. This ensures that environmental education is applied effectively and achieves its objectives. Beck (2006) states that “[...] the connection between local and global policies is essential to address ecological risks” (p. 331). This reinforces the need for coordination between different sectors to ensure the success of educational initiatives.

The implementation of environmental education in Brazil, under the perspective of Law No. 14,926/2024, is a direct response to the climate challenges of the 21st century. The legislation promotes a transformative vision of the school as a space for sustainable learning and practice, aligned with the country's socio-environmental reality. As summarized by Ghini et al. (2011), “[...] the formation of a culture of sustainability in the school environment is the first step towards building a more just and balanced society” (p. 19). With this, education is consolidated as an essential tool for ensuring environmental preservation and global sustainability..

Revista ARACÊ
ISSN: 2358-2472

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