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Pedagogical Practices and Environmental Education: A Report by Experience with Recycling and Selective Collection Through ECO-FRIENDLY PLASTIC PROJECT

PEDAGOGICAL PRACTICES AND ENVIRONMENTAL EDUCATION: AN EXPERIENCE REPORT ON RECYCLING THROUGH THE ECOAMIGO PLASTIC PROJECT

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SUMMARY

This paper is an account of the experience of implementing the **Eco-Friendly Plastic** project as an Environmental Education initiative based on the Science, Technology, Society and Environment (STSE) approach, highlighting its contributions to solid waste management, socio-environmental education, and the articulation between different sectors of society. Originating from the "Good Bottle Cap" initiative, the project expanded its scope and began to integrate actions of collection, sorting, reuse, and environmental awareness within formal educational spaces.
The results highlight the relevance of the initiative in both the educational and socio-environmental fields, considering the weekly collection of approximately 1.5 to 2.5 tons of recyclable materials from the partnership with the Municipality of Vitória (PMV) and the *Association* of Recyclable Material Collectors. The project also shows progress in its institutionalization process, including patent registration and partnerships with FINDES, UFES, ADERES, SINDPLAST, in addition to being recognized by the Ministry of the Environment. Furthermore, future possibilities for articulation with mechanisms of the Recycling Incentive Law and with socio-environmental responsibility and ESG/ ESG practices developed by companies are identified. The analysis demonstrates that the Eco-Friendly Plastic project is surpassing the condition of a pedagogical project restricted to formal educational spaces, assuming characteristics of a socio-environmental initiative with a broader reach. It has the potential to integrate environmental education, science, waste management, social participation, and sustainability, contributing to the construction of a culture of shared environmental responsibility and the promotion of selective waste collection.

Keywords: Environmental Education; Science, Technology, Society and Environment (STSE); solid waste; recycling; sustainability; Eco-friendly Plastic.

ABSTRACT

This study presents an experience report on the implementation of the **Plástico Ecoamigo** project as an Environmental Education initiative grounded in the Science, Technology, Society, and Environment (STSE) approach, highlighting its contributions to solid waste management, socio-environmental education, and collaboration among different sectors of society. Originating from the Tampinha do Bem initiative, the project expanded its activities to include the collection, sorting, reuse, and environmental awareness of recyclable materials within formal educational settings, specifically at EEEFM Aflordízio de Carvalho da Silva, in Vitória, Espírito Santo, Brazil. The results demonstrate the relevance of the initiative in both educational and socio-environmental contexts, considering the weekly collection of approximately 1.5 to 2.5 tons of recyclable materials through partnerships with the Municipality of Vitória (PMV) and the Association of Recyclable Material Collectors. The

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project has also made progress in its institutionalization process, including patent registration and partnerships with FINDES, UFES, ADERES, and SINDPLAST, as well as recognition by the Brazilian Ministry of the Environment. Furthermore, opportunities have been identified for integration with mechanisms established under the Recycling Incentive Law and with corporate socio-environmental responsibility and ESG (Environmental, Social, and Governance) practices. The analysis demonstrates futures that Plástico Ecoamigo is moving beyond the scope of an educational project restricted to formal educational settings, assuming the characteristics of a broader socio-environmental initiative. The project has the potential to integrate environmental education, science, waste management, social participation, and sustainability, contributing to the development of a culture of shared environmental responsibility and the appreciation of selective waste collection.

1. INTRODUCTION

Brazilian education, after going through several ideological phases, today carries a profile from the perspectives of thinkers like Paulo Freire, where the school became a an environment more focused on student learning, problem-solving, and critical thinking. The individual, with the teacher acting as the mediator throughout this process.

Public schools across the country, including the state of Espírito Santo, are no exception. rule. Teachers have become mediators of the entire teaching-learning process. focused on the cognitive development of the student and has the responsibility of working on Cross-cutting themes that go beyond the content outlined in the BNCC (National Common Core Curriculum).

On the other hand, when we think about practices involving environmental education In formal educational settings, we notice that engagement is not always present, but rather participation. or at least concern, regarding the current demands associated with this education, Many times they are not even seen as belonging to these spaces. Themes cross-cutting themes such as environmental education, although extremely important and foreseen in Our resumes are often superficially edited, merely as a way to... of "fulfilling the curriculum".

In this same vein, when we look for data on current environmental problems linked primarily to the production of "waste," we note that schools are spaces that They produce a high volume of waste daily because there is a high frequency of... people, multi-shift routines, and the use of materials that could even be Recyclable materials, such as paper, plastics, glass, and metals.

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We know that Brazil is a country that has significant concerns about large-scale issues. Environmental problems exist, but we also know that there is still much progress to be made. It's not enough. They only draft and approve environmental laws, without actually implementing them.

According to data from the Waste Generation Panel (IBAMA, 2026), Brazil produces approximately 80 million tons of solid waste per year, which represents, on average, 382 kg of waste is produced per person annually. The state of Espírito Santo, on the other hand, produces approximately 127 kg of waste. one thousand tons of urban solid waste per month, reaching a total of more than 1.5 million tons per year, according to data from the MTR-ES System (IEMA, 2023). If To put it simply, it means that there is a great deal of... both in the country and in the state of Espírito Santo. The production of "waste" that is lost in landfills and dumps, which are discarded to rebellious action bringing costly consequences to the natural environment.

Environmental education practices that aim to change people's behavior and Raising their awareness in a meaningful way regarding solid waste production is, in At a minimum, what should we do as active and participating beings in the environment? which we depend exclusively.

Therefore, it is necessary to rethink new customs on the part of society as well as new methods of collecting "garbage" as a way to properly dispose of a large part of it. of these wastes, including recyclable ones, especially in formal environments that are Focus areas of the curriculum and of this research.

Furthermore, it should be noted that this research provided socioeconomic data and environmental issues regarding the role of civil society in the selective waste collection routine in The municipality of Vitória-ES, in formal educational spaces. This occurred mainly inside the Aflordízio de Carvalho da Silva school, located in the region of the “Territory of "Bem", considered a group of socially vulnerable neighborhoods in the municipality of Vitória-ES. In addition to also having importance as a methodological contribution to the technical-scientific and academic environment presenting quantitative and qualitative data of development of the Eco-Friendly Plastic Project. Within this context, the following also stands out: relevance of the guidelines advocated by the Environmental Education Policy (PNEA, 1999) These are the *3 Rs - Reduce, Reuse, and Recycle.* This can be considered a... a set of sustainable practices aimed at reducing waste production and... environmental preservation.

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Therefore, the question arises: how can environmental education be promoted through...
Recycling in disadvantaged communities and formal educational settings can contribute
for improvements in the local environment and for changing people's behavior through
An excessive scenario of solid waste and lack of cleanliness? How does the school, while
Can a formal educational environment be a vehicle for achieving this goal?

2. THEORETICAL FRAMEWORK

2.1 Environmental Education

Environmental education emerged as a more pressing concern in the mid-20th century.
XX when civil society, especially those considered to be from the "Third World," notice the
excessive environmental degradation and the possible consequences this may bring in the medium and
Long-term. Air pollution, excessive use of water resources, overproduction.
solid waste, deforestation, loss of biodiversity, among other serious problems.
which have sharpened studies and research, opening up a range of demands that are increasingly
a source of concern for humanity.

This research, therefore, was based on a theoretical framework that adopted a
an integrated waste management model based on *Critical Environmental Education* and
CTSA approach - *Science, Technology, Society and Environment,* which can promote the
articulation between formal educational spaces, community, public authorities, and facilities.
public entities, recycling cooperatives, among others, with a view to strengthening the
Environmental citizenship, circular economy, and urban sustainability.

In this sense, Critical Environmental Education according to Reigota (2014):

> (...) is a political process and emphasizes the need to dialogue about environmental issues so that everyone can build together a way of understanding and, if possible, resolving such demands. It also affirms that environmental education should be considered primarily as political, economic, social, and cultural education between humanity and nature. Therefore, one cannot think about current environmental problems without considering environmental education linked to the relationships between society *and* nature (REIGOTA, 2014, p. 36).

According to Carvalho's definition (2004), it can be stated that Environmental Education
We need to question the ways in which we have learned to see nature and how we...
We relate to it. Along with this thought, we note that there is no possibility, in full
In the 21st century, instead of differentiating human practices from nature, we have the...

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The need for her at all times, and this brings the concern even more to the forefront.

This is what defines *environmental sustainability.*

Along the same lines of thought, Sato (1994) states that:

> It does not treat Environmental Education simply as the transmission of information about nature or as a change in individual behaviors. Its perspective values the social, cultural, political, historical, aesthetic, and ethical dimensions of the relationship between human beings and the environment. And this, once again, brings to the forefront the concern with how we "practice" environmental education in our current context (SATO, 1994, p. 35).

Another important issue when discussing environmental education is to avoid trivializing it.

as something simple and unimportant to our daily lives. Within the environments

Formally, it is necessary to make the behavioral practice linked to environmental education common and not

experience it only on commemorative dates, such as "World Water Day", "World Environment Day", "Tree

Day", etc. Guimarães (2004), for example,

This confirms that it is necessary to understand social, political, economic, and cultural relationships.

Therefore, he criticizes an Environmental Education that simply teaches: *"Don't throw trash in the..."*

"Leave the floor", "recycle", "save water", etc.

Another factor worth highlighting is the policies created and approved in the country, and that

They need to be validated as everyday practices. As Loureiro (2008) states:

> Always guided by Marxist thought, he states that the National Environmental Education Program (ProNEA), launched in 1994, aims to understand the specificities of social groups, how they produce their means of livelihood, how they create behaviors and situate themselves in society, so that collective processes based on dialogue, problematization of the world and action can be established (LOUREIRO, 2008, p.7).

The importance of conceptualizing spaces cannot be overlooked.

Education from a 21st-century perspective. Within the context of contemporary teaching,

From a socio-constructivist perspective, education is understood to be separated into formal and non-formal education.

formal. For Gohn (2006):

> Formal education constitutes the educational process developed within school institutions, characterized by institutional organization, regulation, definition of content, and structuring of teaching stages. It is, therefore, a modality of education linked to the formal education system, with previously established objectives and procedures (GOHN, 2006, p.28).

According to the same author:

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> Non-formal education is characterized by the intentionality of individuals in seeking or creating certain qualities and objectives. Unlike formal education, its educational processes are not necessarily organized according to the school structure and its mechanisms of standardization and certification (GOHN, 1999, p. 100).

2.2 STS Approach - Science, Technology, Society and Environment

With growing global concern about environmental problems,
Brazilian and international researchers and educators began to notice that the issue
Ecology was inseparable from discussions about scientific and technological production.
various environmental events and the pressure for more environmentally balanced development
environment, then in the 20th century a theoretical-methodological approach emerged that focuses on
Studies on the relationship between science, technology, society and, subsequently, the environment - STS (Science, Technology, Society, and Environment).
with a focus on teaching chemistry, but which was later used as a basis.
in research across various fields of knowledge. The central idea was to form a society.
that understood the importance of the production of science and technology, but that to
at the same time understand this relationship in a critical and participatory way, noting that there is no
separation of society's actions in relation to the production of science and technology.

> The central idea of STS (Science, Technology, and Society) thinking can be summarized by stating that the teaching of Science and Chemistry should contribute to the formation of citizens capable of critically understanding science and technology, evaluating their social implications, and participating in decision-making processes (PÉREZ, 2017).

Based on the Freirean perspective, Auler and Bazzo (2001) argue
that the STS (Science, Technology, and Society) approach should contribute to ensuring that decisions related to science and...
technology should occur in a more democratic and less technocratic way, expanding the
participation of different social actors.

Among Brazilian references in studies on STS (Science, Technology, Society and Environment), one can highlight...
thinker Demétrio Delizoicov, who does not necessarily focus exclusively on this.
approach, but in science education linked to the Freirean perspective, to problematization, to
dialogicity and the critical appropriation of scientific knowledge. The STS dimension appears articulated to this
project of critical science education (DELIZÓICOV, 2004, p.151).

2.3 Selective Collection and Regulatory Framework

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Selective collection is the action of separating recyclable waste so that it has another purpose. In order to contribute to the *3Rs policy - Reduce, Reuse and Recycle.* In the 21st century In the 21st century, particularly in countries like Brazil, this practice is mainly focused on Collection of plastics, paper, glass and metals, which are considered recyclable. or reusable. Its regulation is initially part of the National Waste Policy. Solids, established by Law No. 12.305/2010, being the legal framework that defines the rules for the Waste management and handling in Brazil. Through its publication, various actions These practices could be legitimized and enforced, both by public authorities and by the... civil society. This gives rise to major axes that will increasingly strengthen education. environmental, namely: the mandatory selective collection and shared responsibility; Reverse logistics; waste pickers, the recycling economy, and the circular economy linked to... Reducing waste generation.

It can be emphasized that the circular economy, along with selective collection and the work of Waste pickers are extremely important for *linking* with waste management regulations. Solid. Brazil has already positioned itself on the world stage as a state of integration. more advanced compared to other countries analyzed: the activity of waste pickers is recognized by law, and there are several cases in which they work in partnership with municipalities or companies.

In the municipality of Vitória, in the state of Espírito Santo, there are formally four Associations of recyclable material collectors who work in selective collection, separating, Recycling and selling materials to maintain the production chain and thus generate income. monthly contribution from each member, in addition to contributing to shared responsibility until to achieve proper environmental disposal. According to PMV data (2025) as Associations of recyclable material collectors perform an environmental, social and... economically, linking the selective waste collection carried out in the city to the production chain. from recycling. According to PMV data (2025):

> Currently, the municipal system records approximately 180 tons of recyclables collected per month, coming from more than 150 points distributed throughout the city. The work of the waste pickers mainly involves: Receiving the materials; Sorting; Pressing and baling; Marketing and generating work and income (PMV, 2025. Available at: https://www.vitoria.es.gov.br/central/coleta-seletiva. Accessed on: September 29, 2025).

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This organization can be considered the forefront of the circular economy for the municipality of Vitória-ES, since the waste pickers transform what would otherwise be considered waste or garbage in material with economic value, contributing simultaneously to reduce the amount of waste destined for landfills, for the conservation of natural resources and for income generation.

3. MATERIALS AND METHODS

This study is a qualitative experience report and quantitative, designed to analyze and discuss data produced by the Eco-Friendly Plastic Project. within a formal educational environment, namely the EEEFM *Aflordízio school. Carvalho da Silva,* where this recycling project was successfully developed over three years. only from plastic waste and which can be considered to have potential for development in other formal educational spaces.

Based on the STS approach - Science, Work, Society and Environment, this The research was divided into stages, which should be highlighted: i) meeting with the teaching staff of school for presentation by the creators and researchers of the University Federal University of Espírito Santo regarding the Eco-Friendly Plastic Project; ii) Formalization of partnerships with entities, public bodies, waste picker associations and the school community; iii) training for teachers regarding the project and presentation of the work methodology; iv) execution of A project with phases for disposal, weighing, and collection of waste.

Initially, researchers affiliated with the Postgraduate Program of The Federal University of Espírito Santo met with the school team where the following was presented: *The Eco-Friendly Plastic Project:* Its viability for the school and its surroundings, its importance for the association of waste pickers as well as for the practice of environmental education.

The main objective was to present the importance of a *Living Lab,* which is an Eco-The system, a living laboratory, involves all the agents of innovation that encompass the principles of the circular economy and the incorporation of the quintuple helix of innovation - University; Government; Businesses; Civil society and citizens participating and active in actions.

Next, partnerships were formalized with funding agencies that provided the funds. equipment, *ecobags,* computers, and other equipment that could promote

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Improvements for the partner waste pickers' association, ASCAMARE, providing the necessary support. so that this institution would have the minimum conditions to participate in the aforementioned Project.

Subsequently, the school's teachers received training on the importance of Selective waste collection linked to environmental education, including as a cross-cutting theme foreseen in the National Curriculum Parameters (PCNs) and the National Common Curriculum Base (BNCC).

He was given instructions on how the project methodology would be developed in that space. formal throughout the school years – 2024, 2025 and 2026, explaining the importance of A project for the local socioeconomic environment and also for the environment. Next, It was explained which types of plastics could be disposed of in the *Ecobag* available at school and what the project phases would be like, separated into: disposal by the community. school weighing process for the purpose of counting points for the educational competition planned as a pedagogical action of the Project and promoted by the school, in addition to collecting these Waste is sent to the Waste Pickers Association for sorting and recycling.

Understanding this initial phase of the project, in 2024, the school initiated this partnership. with the *Eco-Friendly Plastic Project ,* which at the time was based on collaboration between different agents such as: FINDES (development company), a public body (ADERES), companies in the plastics sector (SindiplastES), academic institutions (UFES), and non-profit spaces Formal institutions such as schools: Hildebrando State Elementary and High School Lucas, Elza Lemos Andreatta State Elementary and High School and School Aflordízio de Carvalho da Silva State Elementary and High School, in addition to a association of recyclable material collectors (ASCAMARE) itself.

Within this perspective, it was understood in that context that the Aflordízio school... Silva de Carvalho, as a space for formal education, could promote the economy. Circular as an economic model seeking to reduce waste and promote Environmental sustainability through the reuse, recovery, and recycling of materials.

Therefore, the Association of Recyclable Material Collectors – ASCAMARE He actively participated representing the Association of Waste Pickers, bringing expertise and Practical knowledge about recycling and waste management. Other partners here. Representative organizations, such as SindplastES, had the role of working both with schools and... working with the Association of Waste Pickers, participating in educational lectures, assisting in developing the subject of Environmental Education and promoting student visits.

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to their departments so that they could understand how the flow of [something] works in practice.
circular economy.

Given this organization, the Aflordízio de Carvalho school received material for
collection of plastic waste called - *Ecobag* (a type of disposal bag), in which there
All plastic waste would be discarded by students and professionals.
education staff, cleaning staff, kitchen staff, and anyone from the local community who wanted to participate.
In this action. Throughout the project, a collective action called was promoted each year.
Aflordízio Games, where student groups were divided into thematic teams and
The one who collected the most plastic during the educational activity would be the...
highest scorer. This action was interdisciplinary, involving all classes from both shifts.
morning as well as afternoon, technical team, teaching staff and other professionals
from the school with dissemination through posters (Figure 1), banners, social networks and throughout
from classroom lessons.



Figure 1 - Poster advertising the Eco-Friendly Plastic Project
Prepared by: The author herself, 2025.

In this context, it was noted that the performance of the public school system,
Together with the project coordination, it clearly highlighted the role of the possibility.
to introduce the processes of Innovation, Entrepreneurship, Environmental Education and
Sustainability from the students' youth phase and worked within the approach
CTSA (Science, Technology, Society and Environment) was proposed within environmental education. This represented a major difference for

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the generation of employment, income and well-being in areas such as those that are the subject of this project.

(Figure 2).



Figure 2 - Sorting of waste carried out by members of ASCAMARE - Association of Recyclable Material Collectors of Vitória-ES. Year: 2024. Photo: Prepared by: The author herself

It is worth noting that all waste discarded in the *Ecobag* was weighed weekly.

The information was compiled and collected by the Association of Waste Pickers so that the weight could be recorded.

from each team so that it could be converted into points for the teams in the competition.

pedagogical and as income for ASCAMARE members (Figure 3).



Figure 3 - Model of a high-precision scale used for weighing waste.

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Throughout the project, the State Elementary and High School
Aflordízio de Carvalho da Silva has become a dumping ground for solid waste as well as
It achieved its goal of developing an educational project that would bring benefits to the community.
local awareness about selective waste collection, understanding that it is located in the neighborhood of
Penha, Vitória-ES, in a region called "Territory of Good" and which historically
They face situations of social vulnerability and produce a considerable amount of waste.

The aim was, therefore, to strengthen the coordination between the different sectors involved in
solid waste management chain, expand the use of recyclable materials and
to contribute to more efficient, integrated, and sustainable management. From there, this research
It materialized as an instrument of environmental, scientific and technological education under the
perspective of forming citizens capable of making decisions and contributing to the environment.
(Figures 4 and 5).



Figures 4 and 5 - *Reusable bag* for disposal, weighing and collection of plastic waste. Photos: By the author.

3. RESULTS AND DISCUSSION

In light of the above, the *Eco-Friendly Plastic Project ,* in its role as an activity...
pedagogical plan foreseen in the Action Plan of the *EEEFM Aflordízio de Carvalho da Silva* together with
Association of waste pickers, production chain and partner organizations in the years 2024, 2025 and 2026
delivered extremely positive and relevant results for the contribution within the scope of
environmental education, from the STS (Science, Technology, and Society) approach, and in the reality of improvements in selective waste collection in

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municipality of Vitória-ES (Table 1). As shown in Table 1, it is possible to note the large participation and engagement of students and the school community in relation to change. sustainable habits linked to environmental education practices that strengthened the Selective waste collection within the school. More than 3 tons of waste were collected throughout the event. Over those three years, it should be noted that the only recyclable item collected was plastic, in other words, There was no collection of other materials such as metals, glass and/or cardboard. This indicates that... The project's potential and people's participation in the project.

In this sense, these data show two relevant factors to be highlighted: i) contributing a large quantity of waste to the Waste Pickers Association, subsequent financial contribution for associate members; ii) change in The behavior of students and the school community, understanding that dry waste has It has commercial value, contributes to the income of waste pickers, and slows environmental degradation. through environmental education.

Data on the collection and weighing of plastic waste.			
YEAR	**2024**	**2025**	**2026**
WEIGHING	1.287 kg	781 kg	1.269 kg
TOTAL	3,337.00 tons of plastic waste collected		

Table 1 - Table of weighing of plastic waste collected from 2024 to 2026 at the *Aflordízio de Carvalho State Elementary and Middle School*. Source: ASCAMARE/SINDIPLAST, 2026. Organization: The author herself.

Figure 6 shows how the teams were distributed in the competition. an annual event held by the school focusing on plastic collection. Within the The group pairings were hierarchically ordered based on the teams that collected the most plastics and by... Those teams that collected the least amount of waste received higher scores. Conversely, the teams that collected the least amount of waste received higher scores. and that's why they received lower scores in the competition.

In Table 2, referring to the same competition but held in 2026, it is... It is possible to see the spreadsheet detailing the weighing of the waste collected by each team through from the weighing itself. It is noted that no team collected less than 50 kilograms of plastics, which demonstrates an extremely relevant result for the Project and for the The practice of environmental education in schools. When noticing the total value in the same table, it becomes clear...

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a collection equivalent to 1,269 kilograms of waste collected over two months of

During the competition, collecting over a thousand kilograms of recyclable plastics in a short time is a goal.

a positive and beneficial outcome for both the project and the community in relation to

to change behavior and raise environmental awareness.

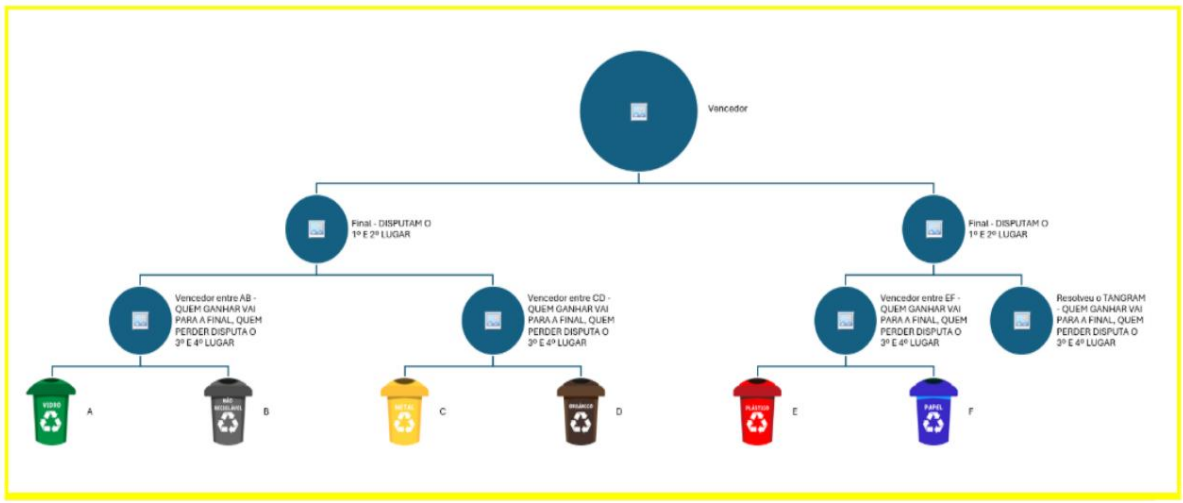


Figure 6 - Teams in the scavenger hunt separated into groups and brackets focusing on the competition for weighing the plastic waste collected throughout the activity in the year 2025. Organization: The author herself.

EQUIPES TURNO MATUTINO - 2026 (Pesagem de Resíduos Plásticos/Kg)						
América Anglo Saxonica	**Europa**	**Ásia**	**África**	**Oceania**	**América Latina**	
200	140	100	120	160	180	
						TOTAL
200	140	100	120	160	180	900
EQUIPES TURNO VESPERTINO - 2026 (Pesagem de Resíduos Plásticos/Kg)						
América	**Europa**	**Ásia**	**África**			
10	23	9	25			
11	19	20	10			
5	9	5	21			
9	5	10	6			
10	4	3	62			
12	3	8				
57	8	5		TOTAL		
114	71	60	124	369		
TOTAL GERAL:	900 + 369 =	1.269Kg				

Table 2 - Spreadsheet and calculation of the weight of plastic waste collected by each team in the competition promoted by the *Aflordízio de Carvalho da Silva* school in each shift in the year 2026. Organization: The author herself.

FINAL CONSIDERATIONS

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In light of the above, it can be concluded that educational projects such as the *Eco-Friendly Plastic project,* They are potentially contributors to environmental education initiatives within the approach. CTSA, which proposes the interrelationship between science, work, society, and the environment.

Projects that address geographical areas of social vulnerability and that, many These issues are often neglected by public authorities regarding access to waste collection and... Raising awareness about selective waste collection is important because it promotes opportunities for... improvements for these places through educational activities within formal spaces of education and subsequently taken to the communities.

In light of the above, it can be concluded that educational projects such as the *Eco-Friendly Plastic project* are effective. They have significant potential to contribute to Environmental Education initiatives. based on the Science, Technology, Society and Environment (STSE) approach, to to promote the connection between scientific knowledge, work practices, and participation. social and environmental preservation. In this sense, the project goes beyond the perspective of a exclusively pedagogical action within formal educational spaces and becomes... an experience of a socio-environmental nature, capable of bringing together different actors and sectors of society revolving around the problem of solid waste.

In the context of knowledge production and waste management, the data The data collected demonstrate the relevance of the activities carried out. Currently, there are On average, 1.5 to 2.5 tons of materials are collected per week from the partnership. with the PMV and submitted to screening. This screening, in turn, reaches approximately 50 70 tons, highlighting the scale of the activity and its potential for promoting practices of reuse, recycling and environmental education (PMV, 2026).

Another relevant aspect refers to the consolidation trajectory of *Eco-Friendly Plastic.* The project originated from the actions of the initial project called "Tampinha do Bem" (Good Little Cap), and throughout its development, it underwent a process of institutionalization and Recognition, including patent registration by the collaborating institution Findes. (Federation of Industries of the State of Espírito Santo), subsequently, added partnerships important issues with UFES (Federal University of Espírito Santo), ADERES (Agency of Development of Micro and Small Businesses and Entrepreneurship) and formalized as an institutional project for associations of recyclable waste collectors through SINDIPLAST (Union of the Plastic Material Industry) is the trade union entity.

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employers' association that represents and defends the interests of companies operating in the sector of Transformation and recycling of plastic materials.

These advances indicate that the initiative is gaining greater scope and The ability to coordinate with public policies and mechanisms to incentivize recycling is, Therefore, it's a project that has been gaining more and more momentum, and is even being recognized by... Ministry of the Environment as a pedagogical practice of environmental education.

In this context, it is also worth highlighting that there is already a strengthening of actions for the Inclusion of the project within the mechanisms foreseen in the Recycling Incentive Law - Law No. Law 14.260/2021, which allows individuals and legal entities to allocate part of their Income Tax to Income due to support recycling projects approved by the Ministry of the Environment. Environment and Climate Change (MMA). These actions broaden the possibilities of Sustainability and the establishment of new partnerships. In parallel, the beginning is observed. incorporating principles related to Environmental, Social and Environmental Aspects Governance (ESG/ESG) in company strategies, especially through actions. linked to recycling and social and environmental responsibility. This approach broadens the possibilities for action of *Eco-Friendly Plastic* and it favors its transition from a project and a pedagogical product, initially aimed primarily at formal educational settings, for a broader educational and socio-environmental proposal with greater collective reach.

Collaboration with various private institutions and initiatives, including the Forum. Capixaba Solid Waste Management and actions related to the Public Prosecutor's Office of the State of Espírito Santo Espírito Santo reinforces this expansion movement and demonstrates the possibility of building a collaborative network around environmental education and waste management and the circular economy.

Finally, it should be noted that the economic measurement of the collected and sorted waste This presents a challenge, given the value associated with weighing and marketing the The materials used vary and depend on factors such as type of waste, volume, quality, Market conditions and the destination of the material. Therefore, future studies are recommended. deepen the analysis of the economic, environmental, social, and educational indicators of project, enabling a more comprehensive assessment of its impacts.

Thus, *Eco-Friendly Plastic* presents itself as an initiative in the process of consolidation. with the potential to integrate education, science, waste management, social participation and Sustainability within the STS (Science, Technology, and Society) approach. Their trajectory demonstrates that practices...

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Pedagogical approaches can extend beyond the boundaries of the school environment and contribute to the construction of a socio-environmental culture based on shared responsibility, valuing waste and in the participation of different segments of society.

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