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# Environmental education in Manaus Municipal Schools: South-Central Zone

Rozely Coelho Magalhães[1], Alexandra Amaro de Lima[1,2], Igor Felipe Oliveira Bezerra[2]

[1]University FAMETRO (Ceuni-FAMETRO), Manaus, Amazonas, Brazil
[2] Research Department, Institute of Technology and Education Galileo of the Amazon (ITEGAM), Manaus, Brazil.

***Abstract*** *— Society is increasingly concerned about environmental issues and this makes educators increasingly reflect on how to disseminate environmental education in the school environment and how students will practice social sound and environmental fundamentals. This research aimed to analyze the pedagogical practices of Environmental Education in five municipal schools of Manaus, having as fundamental the pedagogical practices of Environmental Education and, above all, if the projects and actions in environmental education in the municipal schools bring significant results that express in personal practices in the daily lives of their students. A multicase study was carried out in the form of field work. The main results were related to the approaches of authors of the literature on the subject, and it appears that most of the students have knowledge about the subject, besides exposing the desire to be addressed even more in the school environment theme of environment, since it was observed in the graph that in many schools is still little worked by teachers, finally it is noted that the actions of environmental education agitate behavioral changes and arouse in adequate students commitment to find doors to environmental problems.*

***Keywords*** *— **Sensitization; School Management; Environmental Education.***

## I. INTRODUCTION

Today, there is a wide spread of all sectors of society with the implications of environmental degradation. Therefore, these issues have shown great concern, especially educators. Thus, one should think of educational actions to develop citizens who can relate harmoniously with society and the environment, for survival in the land of future generations (TRISTÃO, 2004).

According to Law No. 9,795 of April 27, 1999, Environmental Education (EE) should be continuous, stable in National education and should be present at all levels and modalities of the formal and non-formal education process. Therefore, this causes managers to look for ways to insert Environmental Education on a daily basis so that it is disseminated of a natural and conscious character.

As provided for in the Brazilian Federal Constitution, environmental education must be implemented at all levels of education, so that in future time people can be more aware and careful with the ecologically balanced environment. In need of this concern for the environment, environmental education is entrusted is a strategy for effective transformation (LOREIRO, 2004).

In turn, schools make up high spaces in the practice of activities that promote this reflection. Nevertheless, it is of paramount importance to insert students into classroom activities and field activities with sustainable projects and practices aimed at EA, and awareness of teachers, students and staff (DIAS, 1992). However, exceptionally in some municipal schools in the municipality of Manaus, EA is not inserted in the planning of education as it should be. In this context, EA can become an ally in guiding education and sustainability (TRISTÃO, 2004).

The capital of the state of Amazonas, recorded during the last years around 435,082 thousand students enrolled in the public network, between elementary and high school. According to the State Secretariat of Education and Teaching Quality (2016) the capital of the state of Amazonas has about 231 state schools, both are divided by district education coordinators, while municipal ones have a number of 458 schools.

Furthermore, the Municipal Department of Education (SEMED), (2009) presents the technical-pedagogical model of the School Environmental Agenda (SEA) to schools of the Education Network, which aims to support The practices in the Municipal School Network, in order to build fundamentals working on the multiple dimensions of the city's space. Furthermore, this

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pedagogical model envisions sustainability through the processes of cultural changes, developing an ecologically correct posture in strengthening vulnerable social groups.

In this sense, this article presents some results of the research that investigated how the EA is being addressed in five municipal schools in the south-center zone of the city of Manaus/AM. Therefore, some aspects of the acts provided for in the technical/pedagogical model of the SEMED School Environmental Agenda and the Environmental Agendas of the schools surveyed will be evidenced.

## II. METHODOLOGY

The research was developed through technical visits in five municipal schools in the city of Manaus/AM (Table 1) from August 2018 to September 2019. The objective of the visits was to understand how municipal schools develop the theme of EE.

The work was developed in two stages, which was the first to contact and present the letter of the research project with the board of schools and the second stage of application of questionnaires for elementary school students 1 and elementary school 2 of the municipal schools corresponding to the South-Central Zone, totaling three hundred and forty-two (342) students, to analyze the students' perception of THE. contained seven (6) questions and three (3) objective questions, which were organized and tabulated in spreadsheets in Excel.

The present study had a quantitative and qualitative approach that observed the factors of pedagogical practices of Environmental Education in five municipal schools in the South Central Zone of Manaus-AM, having a delineated analysis of the facts related to the activities inherent in the environmental actions that are practiced by schools, aiming to characterize the effectiveness of these pedagogical practices of Environmental Education, developed in the schools in loco of the research from the School Environmental Agenda.

*Table 1- Participating schools for field research*

| School | Address | Acronym adopted |
|---|---|---|
| E.M. Escritora Nisia Floresta Brasileira | Santa Cruz, R. Celso Machado, 455 - Flores, Manaus – AM, CEP: 69028-320 | *NFB* |
| E.M. Antonio Matias Fernandes | Street Dois de Agosto, 79, Comunidade União - Parque Dez de Novembro.Manaus – AM, CEP: 69050-700 | *AMF* |
| E.M. Oswaldo Sobreira | Street Vista Alegre - Parque Dez de Novembro. Manaus – AM CEP: 69054-630 | *OS* |
| E. M Abílio Nery | Torquato Tapajós, Km 5 - Flores. Manaus – AM CEP: 69048-660 | *AN* |
| E.M. Profª Leonília Marinho | Street 7 S/N Conjunto Castelo Branco - Parque 10. Manaus – AM CEP: 69055-250 | *LM* |

## III. RESULTS AND DISCUSSIONS

At a time when people on the planet are faced with the scarcity and misuse of natural resources, the EA theme has become a requirement for a sustainable society. Thinking about it, from August/2018 to September/2019, a survey was developed in five municipal schools in Manaus/AM, in order to analyze the perception of students about the environment. First, a visit was made with the objective of knowing the work dynamics and understanding the profile of the students of each school. To facilitate understanding, the participants of the research were characterized in gender and age group, as shown in Table 2. With a student ratio interviewed, 51.24% are male and 48.76% are female, according to Table 2.

*Table 2: Quantitative of the Questionnaire's Answers*

| Genre | | | Age Group | | |
|---|---|---|---|---|---|
| **Gênero** | **Amount** | **Percentage** | **Age** | **Amount** | **Percentage** |
| **Female** | 157 | 48,76 % | **Under 15 years old** | 286 | 88,82 % |
| **Male** | 165 | 51,24 % | **Between 15 and 18** | 36 | 11,18 % |
| **Total** | **322** | | **Total** | **322** | |

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In addition, it is noted that of the total number of interviewees (322) 88.82% are under 15 years of age and only 11.18% are in adolescence, from 15 to 18 years. This shows that the latter quantitative do not comply with Law No. 9,394 of 1996 – Law of Guidelines and Bases of National Education (LDB), which establishes the age group corresponding to the series. It is still possible to verify that of the 322 students there is a gender balance, with 51.24% of males, compared to 48.76% female, however, in many cases these balances do not reach universities.

Figure 1 presents one of the questions present in the questionnaire, it is observed that in general students have heard of the theme related to AS, however the graphs still show that many students not familiar with the theme. It should be demonstrated that the results presented in Figure 1 do not reflect Souza et. al., (2019) also applied in the city Manaus-AM. The authors showed that of the students participating in the actions of the EE group, ACOSUS, showing that students had knowledge about the environment and sustainability, and that the results were mainly due to the easy access of the students to the media and Channels.

Regarding schools, the comparison showed that the LM school presented a higher number of students with knowledge on the subject EE. Despite this, it was found that among the schools visited, NF and OS presented only one student without knowledge about the theme, showing a low number when the other schools are analyzed. Thus, if we verify all the students interviewed, only 77 answered never, with a high number for little number of schools.

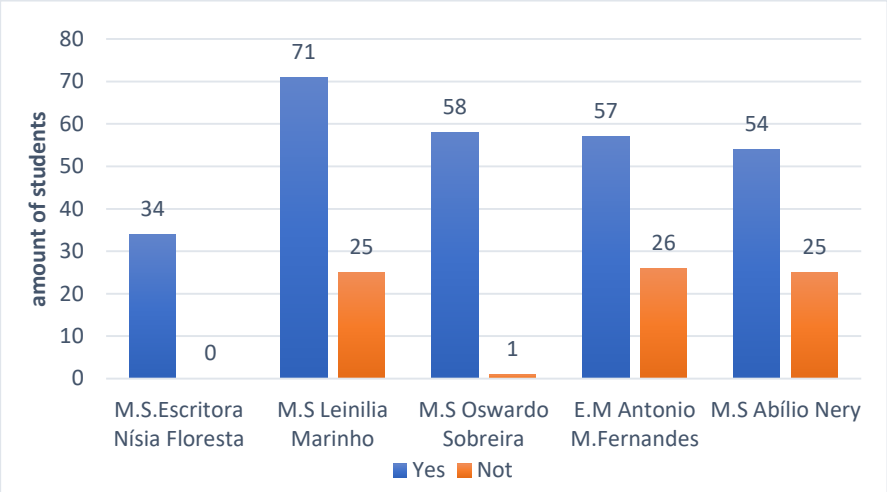


*Fig.1: "Have you ever heard of what Environmental Education is?"*

When students were asked, whether the school applied EE only during the week of the environment (Figure 2), the answers were more balanced in most schools. It was found once again that LM presented higher results for questioning, similar to the results presented in the previous figure.

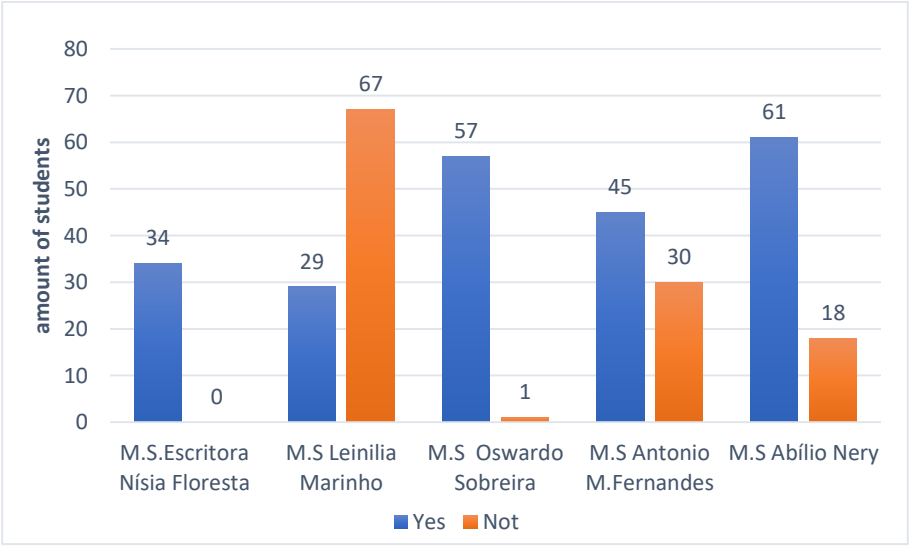


*Fig.2: "Is Environmental Education worked at your school only in the week of the Environment or throughout the year"*

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An was noted, the AN presented a total of 61 students who reported that AS is worked only in the week of the environment, after 57 students of OS, unfortunately the figures show that a movement or commemorative date is required in school calendars to address EE. For this reason it is necessary for pedagogical measures to undergo analyses to highlight and contribute to the even greater insertion of EE in the classrooms and parallel projects of schools, for this it is necessary to discuss the guidelines reducing the obstacles for the environment to be worked at the school (RODRIGUES, 2018).

In the continuity of the questionnaire, Figure 3 presents questions to students about whether teachers generally work with EE. The LM, despite having presented satisfactory results in previous figures, it is opposed in Figure 3 exhibited one of the highest results, with 73 students opting for the answer "no".

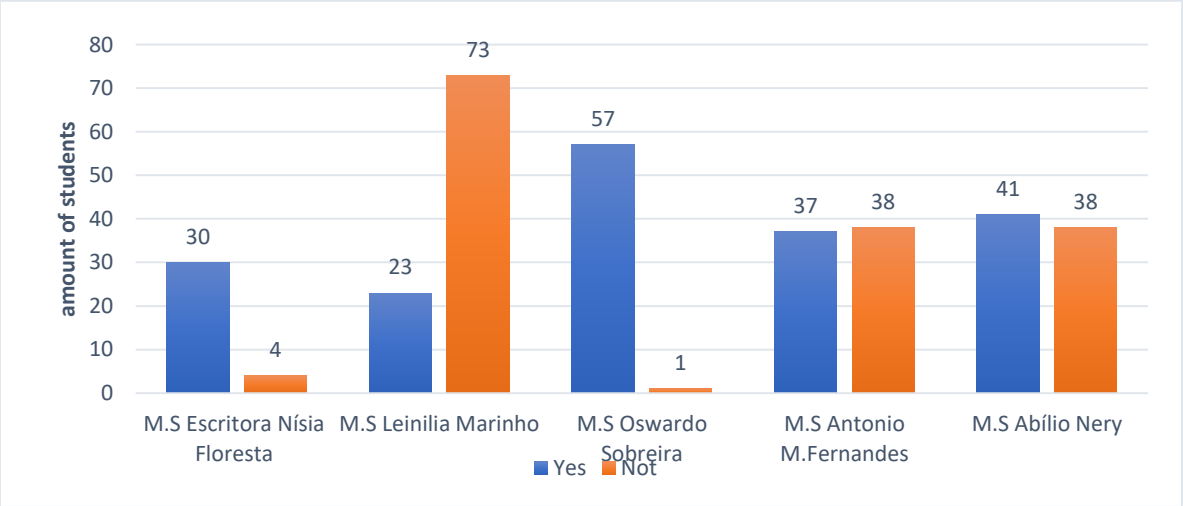


*Fig.3: "In your school do teachers work environmental education?"*

It is observed that the AMF and AN schools presented a balance in the results and still, in the OS school, quantitative were obtained more acceptable, emphasizing an expressive value of 57 students, responding that AS is worked in their school. According to Sousa et. al., (2017), although EE is often inserted in the school environment, it is extremely important that it is added to several factors of everyday life and also in disciplines, besides involving social, political, environment and school issues. Thus, teachers can clarify that EA goes far beyond the environment.

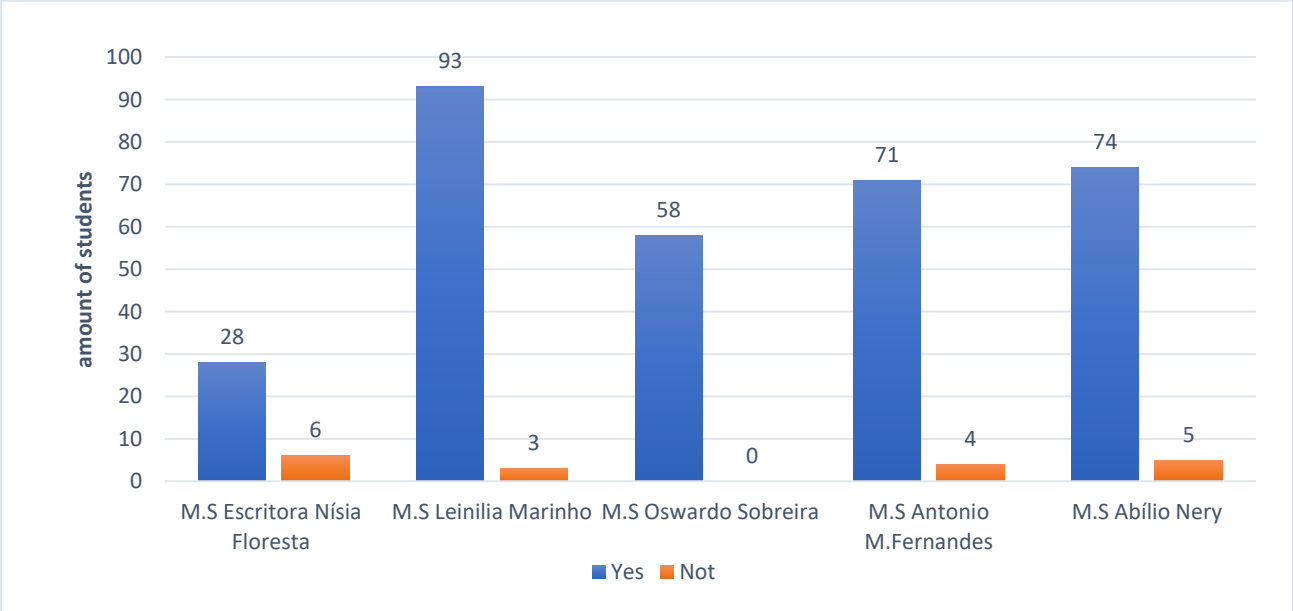


*Fig.4: "In your opinion, should Environmental Education be worked more often at your school?"*

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Figure 4 shows the opinion of the students and their concern about the low frequency of subjects related to EE. In all schools analyzed, it was possible to verify a high number when the question was the fact that the subject should be more often addressed. Thus, the results presented in Figure 4 still demonstrate positive points in relation to the knowledge of students from all schools, being demonstrated through which some students chose to mark the answer "no". This demonstrates a strong interest of students to the theme of the environment. However, the EA approach should not be limited only on commemorative dates, but should have a continuity in approaches, mainly through awareness-raising across the school. Thus, in order for the theme to be addressed more often, one of the best ways to work, is through interdisciplinarity in all school disciplines (SANTOS, 2009).

When asked how they could collaborate to improve or conserve the environment in which they live, students responded that most students chose the subject related to pollution. It is noteworthy that when asked about topics such as " Pollution: water, soil, atmospheric, sound", Figure 5 shows that a total of 247 of the students answered the theme, air pollution, while approaches on selective collection and energy totaled 159 and 84 of the students, respectively.

At the same time, France and Guimarães (2014) in their study in municipal schools in different neighborhoods of the city of Manaus /AM, show that students' perception of the problems of the environment is different for each individual. Furthermore, the authors show that most students still consider water pollution and waste as environmental problems.

As the minority of students have shown that the themes, "clean energies" is the point that should be most addressed, due to the news they have access to, about the energy crisis in the country. This demonstrates that the theme should be studied and presented to students through EE more expressively, this point can be deeply studied and be aggregated as an intervention medium (SOUSA et. al., 2017).

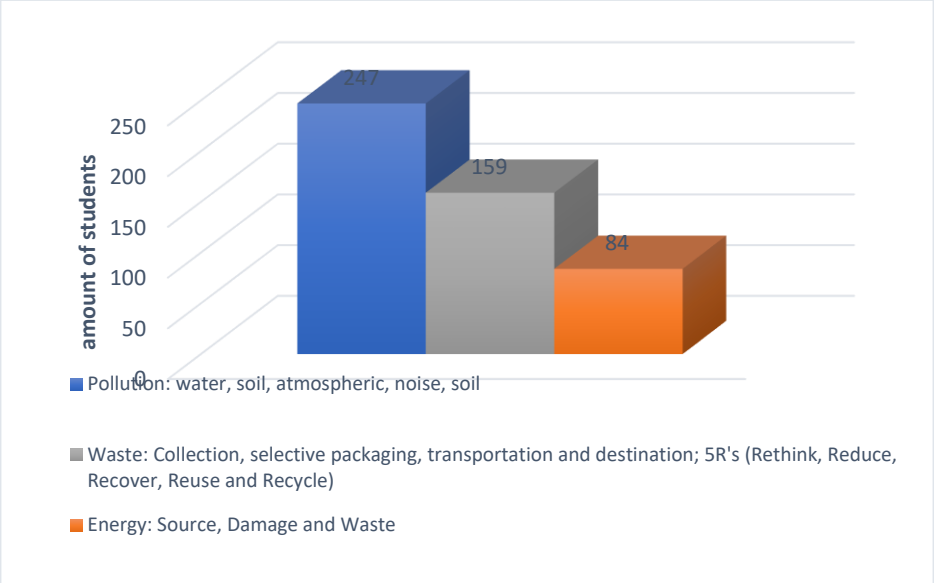


*Fig.5: "Do you remember the last project your teacher worked on Environmental Education?"*

Figure 6 shows the opinion of students about sustainable attitudes towards the conservation of the environment. Although students have demonstrated at the beginning of the research a total lack of knowledge about the topics that address THE, it is perceived that in fact the theme is seen in schools and is still shown by, but students do not demonstrate that the theme is part of their daily lives. However, as a little clarification on the subject happens, they realize what it is about.

Thus through EA it is possible to work on current topics such as Water Pollution, soil, atmospheric, sound (Figure 6) through a simple approach. On the other hand, Santos (2019) demonstrates that the practices of various themes related to AS, which can be applied to elementary school students in a simple and playful way, such as lectures and games, with this addressed about waste solids exemplifying the correct means of disposal and still performing the fixation of the subject through questions.

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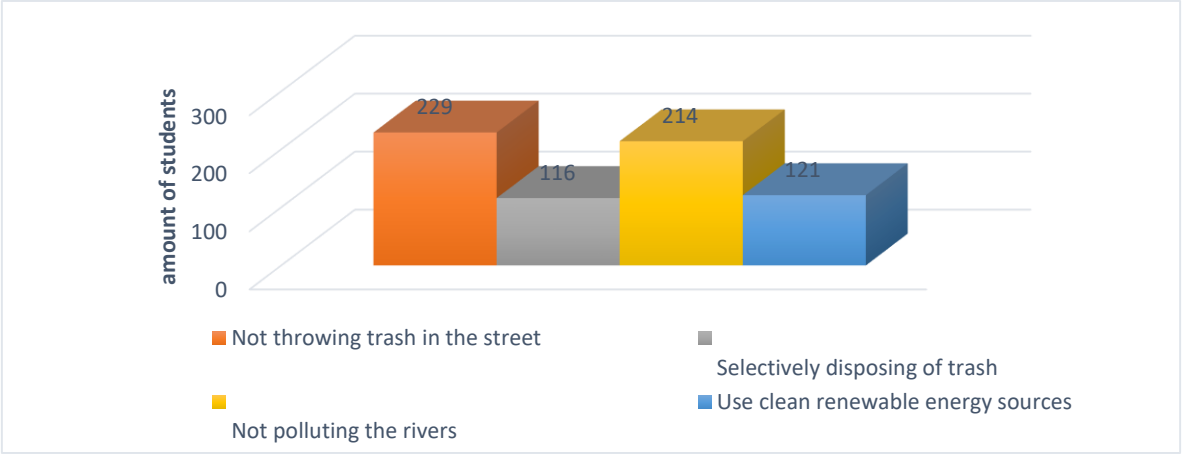


*Fig.6: "How do you think people can collaborate to improve and/or conserve the environment in which they live?"*

## IV. FINAL CONSIDERATIONS

This study showed the results of a research on the knowledge of students from five municipal schools in the south-central area of Manaus. The results showed that the day-to-day practices of students can improve Actions of EE. Changes in conduct can awaken in students a certain commitment to discover for environmental problems.

In addition, they should be inserted and discussed by education professionals during a pedagogical plan, where they can adopt the role of agents of transformation in any context and situation. On the other hand, through learning students will be able to disseminate elements on the environmental theme to those around them, such as their friends and family. However, these actions are not determined by students in their daily lives, and it is essential that schools progress even more.

It was also found that the objectives of this research were obtained satisfactorily, and it is intended to expand research for schools in other neighborhoods of the city.

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