

Non-formal spaces on the scene: a letter to those who defend science education as well as the Amazon

ABSTRACT

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In this article, we propose discuss about how the closing of non-formal spaces affect the Scientific Education, especially the Bosque da Ciência, starting of a letter wrote by teachers-researches that learning-searching about Science Teaching in Elementary School. To this discuss which is supported on Narrative Research, we choose the letter as means to us communicate with Society and to make all backlashes explicit and losses that the closing of this non-formal space represent to Science Teaching, to Research in Science, to Scientific Education on the Amazon and to every people that appreciate mutual benefit, because this writing move us to struggle in favor to popularization of Science Education. In this letter, we present a short reflection about “Bosque da Ciência” as an education space, starting of our memories which was revisited by associations and productions from academic moments. In this reflective movement, we observe that social interactions are considered relevant in the process of socialization and scientific divulgation that are to carry out on the formative environment giving highlight to humanization process, to contextualized teaching and to access of information situated on Scientific Education area. Our narratives give life and new senses to what could been just a simple physical space description which constituting itself in an environment where thinking is ground on the to be and to do of teacher who teaching-research Science.

KEYWORDS: Non-formal spaces. Scientific Education. Elementary School.

INTRODUCTION

“Science is a dialogue with nature”

Ilya Prigogine

If in other times Prigogine's statement would be a justification for high investments in science, today we live a reality in which the objects of science are hierarchized from a supposed degree of importance to society. Thus, if “understanding nature was once one of the great projects of Western thought” (PRIGOGINE, 1996, p. 157), today the so-called scientific and necessary science is one that meets the demands of the economic system.

This scenario has produced a fragile reality in which political issues go through critical moments, as the common good is restricted to a small portion of Brazilians who decide for us in which sectors public money should be invested. Added to this is a precarious and diminished social thinking, especially when we should maintain collective actions and not just individual ones, a climate of hatred and intolerance for those who disagree, inquire and criticize all these events in the last 6 years in Brazil.

In the paths taken by science we can see that there is not only one way of doing science, but several ways of approaching it, for the simple fact of thinking science not in its entirety, but in its various fragmentations of knowledge (BATISTA; MOCROSKY; MONDINI, 2017).

All this reality leads us to live a moment of reflection, especially in the very idea of what science is, because if before it was seen as the one that dealt with eternal laws, today “we need to think of science with more holistic postures - that is, a science that contemplates historical aspects, environmental dimensions, ethical and political attitudes ”(CHASSOT, 2004, p. 257). That is, talking about science is much more than discussing theories, it is looking at the effects of its results, at people, at the problems caused, as Chassot (2004, p. 259) summarizes:

We want the right to be informed and to debate the issue. And this precedes any manipulation whose results are not yet known. We cannot submit to market dictatorships aimed at immediate profits. We want a healthy planet and that is also seeking a world with less hunger.

All this is also seeking a world in which research focused on education is valued and placed as a priority in the country. However, the principles surrounding such an area are affected during this process of political and economic chaos, in which resources are being cut, benefits being drawn from universities and public institutes in Brazil. In Manaus reality this is also evidenced when there is news that there is the possibility of non-formal spaces (institutionalized or not) being closed due to lack of resources such as those exposed in digital newspapers such as *A Crítica*, *Amazonas 1*, *Amazonas Hoje*, and others.

So we begin to ask ourselves: How important are these public places for both the initial and continuing education of teachers / researchers, and the learning of thousands of students in science? How can experiences in research and teaching places can form questions of social struggle?

Thus, this work has as its general objective: To problematize how the closing of these non-formal spaces reaches the Science Education, specifically the Bosque

da Ciência, from a letter written by teachers-researchers who teach-research about the Teaching of Science in Teaching. Fundamental.

For this discussion, we chose the letter as a means of communicating with society and explaining all the setbacks and losses that the closing of this non-formal space represents for Science Teaching, Science Research, Science Education in the Amazon, and for any person who is interested in the common good, once:

Writing letters is writing yourself. Far beyond simply shortening physical distances can be the formulation of thoughts or the expression of feelings [...] that could not be verbalized for various reasons, such as the deep desire to see the abstract materialized (ZANI, 2018, p.117).

Considering the situation raised and society's lack of knowledge about the case, we intend, as narrative researchers, to problematize and reflect on the importance of this educational space in our lives. For this, we go through the principles of qualitative research, which in theory is related to the living environment always seeking to question what is experienced and seen in the world (ESTEBAN, 2010).

We take the perspective of narrative research, because it is the study of the way “we human beings experience the world”, understanding that “we are storytelling organisms”, both teachers and students are tellers and characters of our own stories and of others, personal and social (CONNELLY; CLANDININ, 1995, p.11). In the face of narrative investigation, we came across formative experiences in science education teaching in non-formal spaces, based on the understanding that narrative shapes us and enables us to form paths in the relationship with oneself, with the other and with the experienced environment.

Us and the Bosque da Ciência (in Portuguese) space are interrelated through our life stories, as we have been transversed by it in many formative moments - both on family outings and on our academic education (undergraduate and graduate). By this understanding, we consider our formative memories part of the resignification of this environment in its social, cultural, political and economic dimension and through the letter these memories take, themselves the position at the same time to the preservation of memory and registration, discussion and positioning in relation to issues by sometimes controversial and communicating everything about research - processes, lessons learned, knowledge and knowledge produced by thinking about Science Education in Elementary School (DOLZ; SCHNEUWLY, 2004).

In order to compose a problematic and reflective scenario for the reader, we will dialogue with the perspective of non-dehumanization of the subject, in which the themes discussed and systematized by the academy have no end in themselves, we consider the subject in its entirety, in its emotions, meaningful, recognizing the autonomy and ability to appropriate knowledge anchored under critical lens of reality that surrounds it in order to modify it, rethink it in a creative movement.

REVISITING THE *BOSQUE DA CIÊNCIA*

The “Bosque da Ciência” (In Portuguese) is a space for scientific dissemination, education and leisure. It has an approximate area of thirteen hectares, and is located in the urban perimeter of the city of Manaus (image 1), in the Central - East Zone, it was open on April 1, 1995, by the National Institute of Amazonian Research - INPA.

Figure 1 – Entrance of the Grove of Science



Source: INPA (2015).

According to the observations made, the infrastructure of this space needs investments in maintenance, conservation and accessibility, however, taking into account the wide range of possibilities found for working on Science Teaching topics, the infrastructure of Bosque is capable of meeting these demands.

As it is an area located in the urban perimeter that allows schools to travel with students to this space, it can be used for the implementation of projects related to science education. Regarding its physical space itself, the Grove has a very large physical area and has several spaces where various types of science-related content can be addressed.

The forest has a unique beauty, visiting allows us to have access to information about: structure, species that compose it and results of research conducted by INPA. All of this promotes a great time for learning as a source of wealth for personal, academic and professional life, as well as being a great source of ecological education.

From what has been seen we can see the wide variety of contributions that a trip to this space can provide learners not only the educational proposal but also contributing to their own personal development.

Regarding the strategies that could be adopted using the Bosque das Ciencias they must be directed, considering that it is a non-formal space, ie, these activities must be dynamic seeking to escape those routinely proposed in the space of the room. As we can see in Mota et al. (2014, p. 194):

The strategy of using the Bosque da Ciência (Science Forest) to promote the learning of scientific concepts is justified by the understanding that it allows: to expand the student's cultural capital; break with the disciplinary perspective by promoting interdisciplinary work; articulate knowledge with the environment, thus favoring contextualization; make the curriculum more

flexible; motivate both students and teachers in the teaching-learning process; spread science, technology and scientific literacy.

As seen, there are several perspectives that can be approached when thinking about educational strategies to be implemented during a visit to this space. The teacher has the understanding to mediate this process.

Each space of the Bosque da Ciência contains a wealth of details and possibilities that allow working the most varied types of themes at different levels of education, such as living beings with the advantage of exploring the Amazon fauna, providing the student with knowledge about several species from our region, according to what we found in Branco, Souza and Terán (2015, p. 1-4):

As it is a hard-to-find animal in its natural habitat, we can have a closer contact and understand more about its way of life. Watching the "manatee" we awaken to various curiosities about its natural history: feeding, reproduction, etc. Often these curiosities are manifest when the learner is in direct contact with the object of study.

Here are some spaces that can be found there and worked from the perspective we are describing (INPA, 2015):

MANATEE TANK: It is one of the main attractions of the Bosque. In this place you can see the Amazonian manatees, mammals that live in freshwater, even measuring between 2.8 and 3m in length and weighing 450 kg. These animals are classified as "vulnerable" by the IUCN (2000).

HOUSE OF SCIENCE: The House of Science is a place where you can find an exhibition about the riverside lifestyle, stuffed animals, the nest of a great hawk, a 2.50m tall Cocoloba leaf, among others.

TANIMBUCA ISLAND: In the center of the island you can find a huge tanimbuca tree that is over 600 years old, as well as turtles and several fish, among them, the "poraquê" that was previously in another part of the forest.

SUSPENDED TRACK: It is a walkway that takes visitors over an area that is difficult to access so that they can observe the local flora.

EDUCATIONAL TRAIL: The forest has several trails where visitors can venture and where you can find various signs with information about the plants found on the path, as shown in Figure 2.

Figure 2 – Educational trail



Source: Own elaboration (2018).

AMAZON LAKE: In this lake there are some turtles, fish and Amazonian aquatic plants, figure 3.

CEQUA: The Amazonian Chelonian Study Center is a very interesting place, where visitors can observe numerous species of turtles such as the “mata-mata”, the “tracajá” and the “cabeçudo”, as shown in Figure 3.

Figure 3 - Chelonian species found in CEQUA



Fonte: Own elaboration (2018).

The dynamics of the work in the Bosque da Ciência, from the perspective of a non-formal educational institution, is close to Gohn's (1999) conception of involving conscious subjects of their role in society. In this sense, it is important to emphasize that the formative spaces that contribute to the formation of the subject in the field of non-school education have always coexisted with the field of school education, “it is even possible to imagine very productive pedagogical synergies and to find experiences with various intersections and complementarities.” (AFONSO, 2001, p.31). Thus, we agree with Afonso (2001) that non-school education cannot be built against school, nor can it serve any strategies for the destruction of public education systems, as some ideas put forward by neoliberal ideology seem to claim.

So, with the desire to broaden the horizons of reading and to perceive other productions, other ways of writing that denude us as teachers, researchers, people as we explore other paths in search of dialogue. By taking the dialogical experiences of researching and teaching in science education in elementary school, we try to use the writing of a letter as a tool for problematizing and disseminating science education, so that you have a moment of reflection on this event and its relationship with science and its direction in our society. Once,

To write is to show oneself, to be seen, to make one's own face appear next to the other. [...] The letter is at the same time a look at the recipient (through the letter he receives, he feels looked at) and a way for the sender to offer himself what he tells him. In a way, the card provides a face-to-face. [...] The letter which in its capacity as an exercise, works towards the subjectification of the true discourse, its assimilation and its elaboration as its own good, is also and at the same time an objectification of the soul (FOUCAULT, 1992, p.145).

This personal exposition tells how we were and are being subjectified. They are singular verbalizations of how in this process of constitution of teachers in Science Education in the early and late years of elementary school we were crossed by the formative memories that reveal how past and present are related to the constitution of being a science teacher. From the historical issues that allowed us to perceive other ways of being in teaching shows the multiplicity that non-formal spaces act as a formative axis in Science Education.

Thus, we will write a letter to the Amazonian society, as well as to every Brazilian citizen, considering our memories, possibilities of thinking / reflecting on issues related to Science Education, because this writing moves us to the struggle for the popularization of Science Education. It is in this sense that we forward the following open letter.

THE LETTER THAT MOVE US TO FIGHT FOR SCIENTIFIC EDUCATION

LETTER TO THE AMAZON SOCIETY

Manaus, cloudy days with hope-green rays forecast, 2019

Dear Amazonian society,

We, professor-researchers, as an integral part of Amazonian society, have witnessed situations that have troubled us in recent times, such as: cuts in education and research budgets, loss of labor rights, denial of the truthfulness of data provided by research institutes, among other social, economic and political events. Questions that move us to a more problematic thinking about how we live and about the importance of “the responsibility of those who risk being both witness and narrator of their time” (BRUM, 2019, p. 07). Political issues have led us to a movement of revolution and struggle for collective causes, as we often have access to news that causes us feelings of anger, sadness and disappointment.

Thus, given the political situation of the country, the feeling of insecurity settles in among us as teachers-researchers of Basic Education and the initial formation of teachers. As we experience everything that has been happening in the political arena, it causes us deep dismay to the point of wondering if it is worth continuing to invest in a formation aimed at the teaching career, if it has been treated with total disregard by the current occupant of the highest office in the country. Also because you, who are a subject of this society, need to know that Science Education is not only a concern of the scientific community, but a matter of public policy, because it places a high burden of responsibility on the school as a place where systematized knowledge is developed and built rather than just “passed on”, without considering what policy this education model is meeting (COLLINS, 1999; ZIMAN, 1999; VILANOVA; MARTINS, 2008).

These feelings may be shared by all those who care about the future and who see education as one of the main pillars for achieving this future in a sustainable way and for all future generations in our country. For Science must be understood from a broader view of the world, which results in considering its construction processes in a dimension of citizen formation of the individual being. Therefore, it is necessary to know how this teacher will be formed, so that he can be scientifically educated, also educate his student, making him recognize the world differently. From this perspective, the document “Declaration on Science and the Use of Scientific Knowledge” (UNESCO / Budapest, 1999) states that:

- a) Science education, in the broad sense, without discrimination and encompassing all levels and modalities, is a fundamental prerequisite for democracy and for sustainable development;

- b) Teachers at all levels and those involved in informal science education should have access to constantly updated knowledge to maximize their performance in educational activities;
- c) New tables of contents, teaching methodologies and resources, taking into account gender and cultural diversity, should be developed by national education systems in response to changing educational needs in society;
- d) Educational institutions should provide basic science education to students in fields other than science. They should also provide opportunities for lifelong learning in the field of science.

This type of reflection has led several countries to implement innovative educational programs aimed at the scientific literacy of the population. And our case? Can you point out current advances on these items? How are we going to stand before these setbacks?

We have routinely researched and studied themes focused on a liberating education which enables a critical look at the reality around us. And in the case of the Amazon, it is directly related to the environment and all that implies it: its valorization, preservation and sustainability of our lives. Education for this public should not be neutral, non-political and exempt from social and humanization responsibilities. It is a dialogical education in which there must be “love and humility” (FREIRE, 2002, p.80). Dialogue and dialogicity based on these conditions are essential in an education as a practice of freedom, an education anchored in the principles of popular education. Freedom that requires unceasing pursuit that is an achievement and not a donation (FREIRE, 2002, p.34). A freedom that enables creation, admiration and the ability to venture (FREIRE, 2002, p.55).

More recently we were surprised by the news that the Bosque das Ciência, a place that is part of the history of the Amazonian people, would paralyze its activities of visiting the external public due to the federal government not transferring funds, which made it unsustainable the site maintenance and employee compensation.

According to news from information vehicles from the state of Amazonas (A Crítica and Amazonas Atual in Portuguese) the National Institute of Amazonian Research (INPA) announced, on July 9, 2019, the closing of the doors of the Bosque of Science for public visitation. For those wishing to visit the site, was charged \$ 5.00, which was deposited in a federal government account. However, this value was not being passed on to the administration of the Bosque causing the problems described above.

Who, as a child, did not visit the “Bosque” on a school trip or family outing on weekends? This place brings memories that are part of the formation of a sense of belonging to our culture, especially our forest, so rich in colors and diversity of species. In this place, we have the chance to know endangered animals and we learn the importance of caring for and preserving the environment.

You may be wondering: But what are non-formal spaces? How does the Bosque da Ciência act in the Dissemination-Science Education?

The relationship between Science Education and the many different non-formal spaces present in Manaus ends up enabling an experience that goes beyond the formality found in a classroom, making the cognitive processes of students much richer. According to the studies by Lorenzetti and Delizoicov (2001, p.7):

If the school cannot provide all the scientific information citizens need, it should, throughout school, provide initiatives for students to know how and where to seek the knowledge they need for their daily life. Non-formal spaces, such as museums, zoos, parks, factories, some television programs, the Internet, among others, as well as formal ones, such as school and public libraries, are sources that can promote the students' knowledge expansion. The pedagogical activities developed that rely on these spaces, in practical classes, field trips, science fairs, for example, can provide meaningful learning contributing to a cognitive gain.

These spaces become environments rich in educational possibilities, especially when they have the perspective of scientific dissemination that brings access to scientific concepts making possible scientific literacy, this is what the Bosque da Ciência provides for manauara society and anyone who defends the popularization of science. The partnership between school and other educational spaces can give greater significance to science studies, for the simple reason that they have resources capable of bringing the interest and scientific gaze of the student closer and arousing curiosity, the desire for science and for enabling na approach with the object to be studied, considering that this can happen if there is the mediation and the intentionality of the teacher. According to Pinto and Figueiredo (2010, p. 3):

Non-formal space can, through its physical structure, provide didactic resources for learning that the school does not have. Depending on the student's perception, he / she may analyze relevant information in a non-formal teaching space, where, at school, a particular topic related to this informal space was not adequately informed, or was not intended to be conveyed in depth.

The discussion brought here is intended to recognize the importance of non-formal spaces for educational actions, and how much, educationally speaking, students, teachers and members of society would be losing with the closure of these non-formal education spaces. In this context Zancan (2000, p. 6) argues that, "members of the Brazilian scientific community today have one more task: to fight to change teaching, from informative to transformative and creative". This is a major challenge as it encompasses all levels of education without favoring one over the other. But when we come across these political and economic issues that justify the decisions made by our representative we wonder if we, as a society, are clear about the decisions made. Let's go to fight!

Although we are not all trained in the teaching of natural sciences, we are confident that the *Bosque da Ciência* is a fundamental environment for human development, the fostering of research and the training of students at different ages. As shown by Morhy et al. (2016, p. 114) "The Bosque da Ciência contributes to the individual's interaction with the environment, arousing feelings and emotions, stimulating him to a new environmental awareness, and the formation of scientific knowledge". So we need to know him to understand all the learning and experiences he provides.

We have within us a certain relationship with these places, which make us connect feelings we were unaware of. The *Bosque da Ciência* makes us have these emotional perceptions that pervade joy, doubt, dazzle in one place. All these conceptions make us wonder how important these places are for the formation and especially for the processes of outcropping of feelings of each human being.

From this perspective, during the Fundamentals of Science Education course, held at the State University of Amazonas by the Graduate Program in Education and Science Education in the Amazon, we went to *Bosque da Ciência* to participate in a practical class, during which we lived unique moments for our academic and professional education.

Such activity can be described from Larrosa's (2002) concept of experience, which describes an experience as something that happens to us and is not on the side of action, practice or technique, but on the side of stopping and feeling, for example. This is what it calls for attention, listening, openness, availability, exposure and vulnerability. We bring the narrative of the activity's development and the effects it has had on us.

Right at the entrance of the Grove, the discipline teacher stopped in front of some trees, including a rubber tree, in which he took the opportunity to tell part of the history of the Amazon. In a second tree, something moving in the branches caught our attention: an iguana. What a surprise and what news! We thought they were monkeys and we didn't know that iguanas climbed so high on trees.

On a second stop, we had a magnificent encounter with an endemic Amazonian aquatic mammal, which is known in the region as manatees. Located in giant tanks, we were able to maintain a closer contact with these animals, bringing out feelings of protection towards this species, also arising questions that had references to their diet, appearance of their name, their size, among others.

These animals are in the list of risk of extinction, in this case the *Bosque da Ciência* makes the process of welcoming these animals, as well as the crossing of species to new generations. This whole experience contributes to the learning. That it occurs significantly and it is possible if there is interaction between the surrounding environment, natural and social (DELIZOICOV, ANGOTTI and PERNAMBUCO, 2011), that is why it is necessary to make these environments part of the reality in which we live.

During the walk we had contact with studies developed by INPA researchers through banners with abstracts of scientific articles. This made us very satisfied, because we became aware of the subjects on which researchers have been looking, as well as access to research results. We point this out as salutary, because even if some technical terms or in another language make it difficult for the general public to understand, it needs to be shown to the society where some public resources are being invested. According to Bueno (2010, p.6), "Scientific communication, properly recoded and reworked, contributes to feed the process of scientific dissemination".

The forest moves us to unforgettable encounters, which pass by the recognition of plant or animal species, such as *Sumaúma* (in Portuguese) which is a tree known in the Amazon and admitted as one of the largest trees in the world, and can reach up to 60 meters in height. In this same place we also relate to monkeys, to whom we show food so that they may come closer to us. This

connection with nature, and everything that springs from it, makes us understand what is said by Ubaldo et al. (2018) when it portrays man and nature as an organic system having a basis of holistic relationship, of entire non-dependence relationship, which has been changing over the years.

The Bosque da Ciência can also provide us with experiences for the interior of the forest, that is, allowing us to meet the earth, with plant species, as well as the various sounds that nature can provide us triggering cognitive perspectives of the students involved. These cognitive processes affect perception, memory, learning, language, intelligence, reasoning, awareness, attention processes, creativity and emotions (GONÇALVES, 2012).

The turtles were also part of this route. We went to Cequa, where we found several species, among them the Mata-Mata (freshwater tortoise), which was what most aroused our curiosity among the other animals that were there, since it has an exotic appearance, reminding us A rock.

Leaving the Cequa, there is a nursery of jabutis, a species of terrestrial turtle, which we also visited to feed them. This experience has awakened us more deeply to the care we should have with nature, since we are also part of it and our existence depends on the zeal, even with the smallest species. Taking us to the goal of science teaching, which is to maintain critical dialogue and the quest to solve problems that can affect society, including the relevance of each individual to the amplification of social welfare (COUTINHO, MATOS and SILVA , 2014).

Inside the Jabuti nursery, there is a gate that gives access to the space where the Jacaré-açu, an alligator, the largest South American reptile, is located. The caretaker of the place, was with us then he decided to open the gate so that we could see him without the interference of the bars surrounding him. Without entering the place, only looking from the gate, we could see only his head resting on the lake where he was immersed. A mixture of sensations that enveloped us: fear, wonder, curiosity.

What this place causes us is the recognition of an environmental balance that day by day we forget that exists around us, which helps the connection between our survival and our well being. That is why there is a need to involve students' knowledge about environmental education, simply because this knowledge has the principle of struggle for a political act that thinks of a social revolution that turns to a holistic perception that relates man, nature and universe (JACOBI, 2003).

Environmental education, the teaching of science and natural sciences can be involved in these educational spaces, where they provide much more problematization of our own environmental awareness and how we relate to the environment around us, reaffirming what is described by Afonso et al. . (2016, p. 109) "individuals with higher levels of environmental awareness would base their decisions on the impact they have on the environment".

Arriving at the end of the route, we went to Tanimbuca Island - a tree over 600 years old that is in the center of the island and is approximately 35 meters high. At the end of the activities, the teacher gathered all the students around the tree to hug it. Another gesture of care for nature, which we experience at that moment.

According to Guimarães (2016, p.12), during Rio 92, Environmental Education for equitable sustainability was recognized as "a permanent learning process based

on respect for all life forms". In this sense, this journey lived in the Bosque da Ciência, dear Society, provided us with the contact with nature that we do not have in our daily lives, leading us to awaken to respect and care for the environment.

More recently we had the news that the Bosque da Ciência was reopened on July 13, 2019, according to the news portals (Em tempo, Globo, Amazonas Atual, among others) with the help of the mayor of Manaus Arthur Virgílio Neto, which officialized emergency actions to keep the science forest running. Which brings us to the question: How long will this action take?

We, as teachers in training in a course that has a line focused on the use of non-formal spaces as a tool and teaching, are very concerned about the possible closure of the activities of the Bosque da Ciência for public visitation in view of the great number of teaching activities, as well as articles and dissertations produced there focused on the use of non-formal spaces for teaching, especially science.

What we have to take into account with the closure of the Bosque, is exactly this large amount of knowledge that will no longer be produced. Knowledge that can not only be seen from the myopic perspective of the amount of material produced, how to measure the effect that causes any student to participate in an activity especially focused on their learning in an environment more than conducive to the achievement of it, you should think about the consequences of allowing decisions based solely on economic issues, often made by people without the slightest awareness of what education is like in such an environment.

Non-formal teaching spaces eventually enable other ways of learning than the traditional ones usually developed within the classroom. As stated by Araújo, Silva and Terán (2011, p. 2):

When we reflect on Science Teaching, we realize that there is a prevalence of memorization and transmission of concepts passed on from generation to generation and most of the time, disconnected from the reality of students. This approach has its origin in a Cartesian positivist conception that conceives of teaching, man and society as parts of a whole, without articulation with each other.

These spaces become environments enriched with many educational possibilities, especially when they have the perspective of scientific dissemination that bring access to scientific concepts making possible scientific literacy, this is what the *Bosque da Ciência* provides for manauara society.

The discussion brought here is intended to recognize the importance of non-formal spaces for educational actions, and how much, educationally speaking, students, teachers and social members would be losing with the closure of these non-formal education spaces.

For many decades, Science Education in Brazil has been critical. With the expansion of education systems and the growing centrality of knowledge, a minimal scientific culture is required today not only to respond to technological change but also to improve life in its entirety. Thus, the right to knowledge and to a quality science education became an imperative of our time.

We call on all to claim our right to Science Education, reverberated by the space of the Bosque da Ciência as a mobilizing place and potentiator of scientific, social and cultural knowledge. Since having access to these formative elements is

one of the greatest alternatives for change and resistance in favor of an education that values teaching and the teaching process in the area of Science and Citizenship.

Os espaços não formais em cena: uma carta àqueles que defendem a educação em ciências e a Amazônia

RESUMO

No presente artigo nos propomos problematizar como o fechamento de espaços não formais atinge a Educação Científica, especificamente o Bosque da Ciência, a partir de uma carta redigida por professores-pesquisadores que ensinam-pesquisam sobre o ensino de Ciências no Ensino Fundamental. Para esta discussão, pautada na Pesquisa Narrativa elegemos a carta como meio de nos comunicar com a sociedade e explicitar todos os retrocessos e prejuízos que o fechamento desse espaço não formal representa para o Ensino de Ciências, a Pesquisa em Ciências, a Educação Científica na Amazônia e para todo e qualquer sujeito que se interesse pelo bem comum, pois essa escrita nos move para a luta em prol da popularização da Educação em Ciências. Na carta, apresentamos uma breve reflexão sobre o Bosque da Ciência como um espaço educativo, a partir de nossas memórias, revisitadas por lembranças e produções oriundas das vivências acadêmicas. Nesse movimento reflexivo, observamos que são relevantes as interações sociais no processo de socialização e divulgação científica efetivados no ambiente formativo, dando destaque ao processo humanizador, ao ensino contextualizado e ao acesso à informação situada na área da Educação Científica. Nossas narrativas vivificam e dão novos sentidos ao que poderia ser somente uma mera descrição de um espaço físico, constituindo-se num ambiente onde se ancoram pensamentos sobre o ser e o fazer docente que ensina-pesquisa Ciências.

PALAVRAS-CHAVE: Espaços não-formais. Educação Científica. Ensino Fundamental.

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Received: 24 ago. 2019

Approved: 09 dez. 2019

DOI: 10.3895/actio.v4n3.10595

How to cite: GONZAGA, A.T.; SOUZA, A. C. L. de; BRITO, R. G. de; OLIVEIRA, C. B. de; COSTA, M. de O. Non-formal spaces on the scene: a letter to those who defend science education as well as the Amazon.

ACTIO, Curitiba, v. 4, n. 3, p. 327-345, set./dez. 2019. Available in: <<https://periodicos.utfpr.edu.br/actio>>.

Acesso em: XXX

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