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ARTIGO

THEME PARK, POPULARIZATION AND AMAZONIC RESEARCH: THE PROPOSAL OF THE SCIENCE GROVE PARK/INPA

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ABSTRACT: Theme parks are spaces for entertainment and scientific-cultural learning through cultural activities. In the states that make up the Brazilian Amazon there are few classic science museums, however, there are open environments with the presence of green and living. Thus, the objective was to characterize a Science and Technology Setting in the North Region, with its Amazonian characteristics, which carries out scientific research and promotes the popularization of this research among audiences in physical visitation spaces. We chose a Science and Technology institution that promotes the scientific popularization of its research, in this case, in Manaus/AM, the National Institute for Research in the Amazon (INPA), in its extension space, the Science Grove Park. Between February and March 2018, we received documents related to planning, reports, requests for visits and advertising, in which we carried out a thematic content analysis. The data indicated that the team of monitors carries out a curricular internship, with an average duration of six months, linked to tourism and forest management, the visitors are mostly from the early childhood school audience and their visit motivations are linked to the cultivation of enrichment. cultural origin from the Amazonian space. We believe that the monitoring model can be improved with actions of greater internalization of monitors in the institution, adopting a vision of the theme park as a museum for the adoption of a multidisciplinary educational team in addition to education/entertainment, but a vision of Amazonian heritage.

Keywords: informal education, sciences museum, science and technology setting, INPA.

PARQUE TEMÁTICO, POPULARIZAÇÃO E PESQUISA AMAZÔNICA: A PROPOSTA DO BOSQUE DA CIÊNCIA/INPA

RESUMO: Os parques temáticos são espaços de entretenimento e de aprendizagem científico-cultural por meio das atividades educativas. Nos estados que compõem a Amazônia brasileira, há poucos museus

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de ciências do tipo clássico; em contrapartida, há ambientes abertos com a presença do verde e do vivo. Assim, o objetivo aqui foi realizar uma caracterização de um Espaço de Ciência e Tecnologia na Região Norte, com suas características amazônicas, que realiza investigação científica e que promove a popularização desta pesquisa junto às audiências em espaço de visitação física. Foi escolhida uma instituição de Ciência e Tecnologia que promove popularização científica das suas pesquisas – no caso, em Manaus (AM), o Instituto Nacional de Pesquisa da Amazônia (INPA) no seu espaço de extensão, o Bosque da Ciência. No início de 2018, foram recebidos documentos relacionados aos planejamentos, relatórios, solicitações de visitas e publicidade, com os quais se realizou uma análise de conteúdo do tipo temático. Os dados indicaram que a equipe de monitores realiza estágio curricular, com duração média de seis meses, ligado ao turismo e ao manejo florestal. Os visitantes são, na sua maioria, do público escolar da educação infantil e do ensino fundamental, e suas motivações de visita estão ligadas ao cultivo do enriquecimento cultural oriundo do espaço amazônico. Considera-se que o modelo de monitoria pode ser melhorado com ações de maior interiorização dos monitores na instituição, bem como com a adoção de uma visão do parque temático enquanto museu para uso de equipe multidisciplinar educativa para além do edutenimento, mas com uma visão de patrimônio amazônico.

Palavras-chave: Educação não formal, Museu de Ciências, Espaço de Ciência e Tecnologia, INPA.

PARQUE TEMÁTICO, POPULARIZACIÓN E INVESTIGACIÓN AMAZÓNICA: LA PROPUESTA DEL BOSQUE DE LA CIENCIA/INPA

RESUMEN: Los parques temáticos son espacios de entretenimiento y aprendizaje científico-cultural a través de actividades culturales. En los estados que componen la Amazonía brasileña hay pocos museos de ciencia clásicos, sin embargo, hay ambientes abiertos con presencia de verde y vivo. Así, el objetivo fue caracterizar un Espacio de Ciencia y Tecnología en la Región Norte, con sus características amazónicas, que realiza investigación científica y promueve la divulgación de esta investigación entre las audiencias en espacios de visitación física. Elegimos una institución de Ciencia y Tecnología que promueve la popularización científica de su investigación, en este caso, en Manaus/AM, el Instituto Nacional de Investigaciones en la Amazonía (INPA), en su espacio de extensión, el Bosque de la Ciencia. Entre febrero y marzo de 2018 recibimos documentos relacionados con la planificación, informes, solicitudes de visitas y publicidad, en los que realizamos un análisis de contenido temático. Los datos indicaron que el equipo de monitores realiza una pasantía curricular, con una duración promedio de seis meses, vinculada al turismo y al manejo forestal. Los visitantes son, en su mayoría, del público escolar de la primera infancia y sus motivaciones de visita están vinculadas al cultivo del enriquecimiento cultural originado del espacio amazónico. Creemos que el modelo de seguimiento se puede mejorar con acciones de mayor internalización de los monitores en la institución, adoptando una visión del parque temático como museo para la adopción de un equipo educativo multidisciplinario además de "edutenimiento", pero una visión del patrimonio amazónico.

Palabras clave: educación no formal; Museo de Ciencia; espacio de ciencia y tecnología; INPA.

INTRODUCTION

Brazil is the country that most promotes scientific and technological dissemination in Latin America (MAIA; BERGAMINI; CASTRO, 2018). As a country with continental dimensions, the challenge of carrying out scientific dissemination is of the same relevance and complexity in different regions, ethnic groups, cultural productions and economic activities.

However, this great achievement of the country that popularizes Science and Technology (ST) is not homogeneous among Brazilian regions, given that there are great economic, social and ST production inequalities throughout the country. Thus, we highlight the Northern Region of Brazil, which reflects this inequality, and seeks to move forward to overcome years of backwardness and economic and social exploitation, as the Northern Region was the last region to be integrated into Brazil by land and has also received consistent attention and compliance with public policies in education, economy and social development (ARAGON, 2013).

Scientific institutions in the North Region are very small in number compared to other regions and have little time for building a research tradition. Currently, there are less than five research institutions with more than 50 years old in the North Region (SEIFFERT-SANTOS; CUNHA, 2020). This directly impacts the dissemination of this scientific and technological production due to the rarefied number of institutions and, therefore, the volume of research groups engaged in the region that occupies almost 50% of the Brazilian territory.

This region is known as part of the Amazon, a well-ventilated icon with many senses and polyphonic meaning. For this, we can list some of its own characteristics of this region, which, according to Fonseca (2011) and Loureiro (2015), are: the largest tropical forest in the world, the greatest terrestrial biodiversity on the planet, one of the largest freshwater basins in the world, has a a mosaic of cultural diversity between indigenous peoples, streams and rural and urban regions distributed in different ways in the territory (namely: there are peoples living in isolation in the forest and others in conurbation urban complexes). Therefore, its scientific investigation reflects and refracts these marks and conditions.

Thus, Scientific and Technological Dissemination (SD will be designated from now on) takes place through different means. According to Seiffert-Santos (2020b), based on Bueno (2002) and Nascimento (2010), informs:

> [...] [SD] is seen as responsible for making scientific and technological information available to the broad audience, school and non-school, in the format of scientific journalism and in the format of popularization of Science for citizen training and critical education (SEIFFERT-SANTOS, 2020a, p. 419).

Of the forms of SD, the Science Museum and its analogues/similars (botanical gardens, parks, zoos and others) are institutions or Science and Technology Spaces (STS) with the use of popularization of these products from scientific culture as their own modality and distinct characteristics (CGEE, 2019). They are concomitantly institutions that receive visits that normally present their own non-formal education project (museum) (MARANDINO, 2001; PALHARES, 2009; CGEE, 2019).

As mentioned earlier, the Northern Region of Brazil has the smallest number of institutions; this reflects in the STS, with only eleven Museums and Science Centers among two hundred and sixty-eight registered in the Museums and Science Center guide available in the "Catalogue Center and Science Museums of Brazil 2015" (ABCMC, 2015), located specifically in the states from Amapá, Amazonas and Pará. Some of these STSs are: Center for Museological Research – Sacaca Museum(Macapá/AP); Science Grove Park/INPA (Manaus/AM); Emílio Goeldi Zoobotanical Museum (Belém/PA). These are institutions with an emphasis on rich exhibitions on Amazonian biodiversity and anthropological elements (details will be presented in the next section). Thus, we observe, in these examples, that the Amazonian regional marks of SD in STS are open places, associated with the forest and its elements, especially live.

As an example of research with open spaces that receive visitors, Suescun and Scheiner (2012), who analyzed the Botanical Garden of Rio de Janeiro, described the experience as a totality not immediately perceived, however, they understand that there is a mediation by the spatial notion provided

by the brochure (garden map). The experience lived in this space also comprises the ambient light, which activates the visual dimension (colors and characteristics depending on the times and seasons that are perceived); hearing, with birdsong and other natural elements; and the aroma of fruits, flowers and trees. To this characterization, the authors integrated the expographic language of museography in verbal and iconographic artifacts to complement the environment in a system of integration, rather than highlighting the other elements of the garden. The authors called it "theme garden", but there is another term used – the Theme Park.

The term Theme Park is not frequently researched in Science education and non-formal education spaces. However, it is a term used in the book organized by Silvério Crestana et al. (2001), director of Estação Ciência (Science Station) at the time – a division of scientific and technological dissemination of the University of São Paulo (USP), entitled "Education for Science: Program for Training in Science Centers and Museums". In the Theme Parks section of the book, opened by Alain Baldacci (a representative of the World Parks Association), although a theme park is not defined, the term is related to the environment, activity and visit with interactivity and entertainment to provide a light and smooth experience for visitors, in addition to introducing the neologism "edutenimento" (edutainment), in the case of the Science theme. This section presents, as theme parks, the Science Park, in the theme Saúde da Fiocruz, in Rio de Janeiro; the Água Branca Park, in São Paulo; INPA's Casa da Ciência/Science Grove Park, in Manaus; the Science Park in Belém; and the Earth and Universe Science Park, in São Paulo.

However, Bonatto (2001), in his text about the Fiocruz Science Park, defines that the Theme Park is associated with amusement parks. Thus, what these parks have in common is the offer of entertainment activities with an educational aspect, edutainment. Considering this criterion, theme parks, such as the Science Grove Park, are a place of leisure for visitors, who preserve an area of forest fragment and, at the same time, promote environmental education (BUENO, 2001)

Thus, our objective is to carry out a characterization of an STS in the North Region, which conducts scientific research and promotes its space to popularize part of this research with the target audiences of the institution. This characterization is based on information about the exhibitions, the visit request documents and the park's functional organization. Namely, the theme park selected for this analysis was the Science Grove Park of the National Amazon Research Institute (INPA).

With this, we intend to recognize favorable marks for the formation of non-formal education in Science and Technology in an STS of a Amazonian context.

LITERATURE REVIEW

We associate Science and Technology Spaces (STS) with non-formal scientific and technological education spaces. In other words, they are included or analogous forms in the category of Science Museums (ABCMC, 2015). Therefore, non-formal education studies used in Science Museums can be compared with educational projects in institutional public open spaces.

It is considered that science museums have "modalities" of non-formal education (CHAGAS, 1993). In its recent update of the definition of museum, the International Council of Museums (ICOM) establishes:

> Museums are democratizing, inclusive and polyphonic spaces for a critical dialogue about the pasts and the futures. Acknowledging and addressing the conflicts and challenges of the present, they hold artifacts and specimens in trust for society, safeguard diverse memories for future generations, and guarantee equal rights and equal access to heritage for all people. Museums are not for profit. They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit and enhance understanding of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing. (ICOM, 2019, online) [3] .

[3] ICOM. Available on: https://icom.museum/en/activities/standards-guidelines/museum-definition/?fbclid=IwAR2OIpsWyJLfce1Bej1H1otK9a06e5i358gTaX36rjmRyty 3lPbIeclapZc. Accessed 06 Aug, 2019.

In legal terms, the definition of museum, based on article 2, items IX and X of Federal Decree No. 8124/2013, is the object of Ordinance No. 422/2017, of the Ministry of Culture, through the Brazilian Institute of Museums, which provides for the National Policy on Museum Education, which presents the definitions of museum and the museological process:

> [...] - museum - non-profit institution, cultural in nature, which conserves, investigates, communicates, interprets and exhibits, for purposes of preservation, study, research, education, contemplation and tourism, sets and collections of historical value, artistic, scientific, technical or of any other cultural nature, open to the public, at the service of society and its development; - museological process - program, project and action under development or developed with theoretical and practical foundations of museology, which considers the territory, cultural heritage and social memory of specific communities, to produce knowledge and cultural and socioeconomic development. (BRASIL, 2017, n.p.).

According to the definition of ICOM and Ordinance No. 422/2017, the museum and the museological process have the function of conserving and educating for cultural heritage and must be accessible to people. The same ordinance also informs the need for a multidisciplinary team for a museological education project (non-formal education) with a focus on communication and interaction with the institution's target audiences.

According to Wagensberg (2001, p. 23), interaction with the visitor can be:

> […] to stimulate according to a maximum of three types of interactivity with the visitor: 1) manual or emotion-provoking - Hands-On Interactivity – in hand; 2) mental or intelligible emotion - Minds-On Interactivity - in the mind; 3) cultural or cultural emotion - Heart-On Interactivity - in the heart. The third is highly recommended, the first is very convenient and the second is simply essential. Interactivity means conversation. Experiencing is talking to nature. Reflecting is talking to yourself. A good corner of the museum also sparks conversations among visitors. (translated) [4]

For Wagensberg (2001), interaction occurs: through conversation with oneself, through the manipulation of buttons (what will happen if I press it?) - *hands-on*; by questions and daily activities of thinking and being emotional with answers and reflection through mental intelligibility - *minds-on*; and for activities to distinguish cultural identifications, from what is outside my culture, and to promote cultural emotion – *heart-on*.

We emphasize, according to Pavão and Leitão (2007), that there is an extrapolation, especially with the Science Centers, in the *hands-on* interaction, sometimes confused with the interactivity itself, making other interactions unfeasible, especially those with the monitor/mediator and the social experience of the other (audience visitor). On the other hand, in traditional contemplation, despite not involving physical interaction; there is interaction of the external discourse with the internal discourse of the subject of knowledge (VOLÓCHINOV; BAKHTIN, 2017 [1927]); the subject does not physically manipulates it, but observes it. Here it has to be agreed that it can converge to a monologic degree, but in the cultural perspective it cannot be generalized, because, from the hermeneutic philosophy, interpretation is a personal construction, and there may be several negotiations of meanings between the subject's internal speech and the speeches at the exhibition.

With regard to this communicative strategy, it is perceived that science museums are historically marked. McManus (1992), Padilla (2001) and Friedman (2010) call 'Science museum generations' certain forms and communicative strategies to express a dialogism of scientific dissemination, as they are relatively homogeneous groups in terms of communication. Each has a recognized focus on the historical moments of ST museums. These approaches are usually delimited by three generations: 1st Generation – Natural History Museums (collections of preserved natural collections); 2nd Generation – Museums of Industry and Technology (historical collection of

[4] *[…] para estimular según el máximo de las siguientes tres clases de interactividad con el visitante: 1) Interactividad manual o de emoción provocadora (Hands-On) 2) Interactividad mental o de emoción inteligible (Minds-On) 3) Interactividad cultural o de emoción cultural (Heart-On) La tercera es muy recomendable, la primera es muy conveniente, y la segunda, sencillamente imprescindible. Interactividad significa conversación. Experimentar es conversar con la naturaleza. Reflexionar es conversar con uno mismo. Un buen rincón de museo dispara también la conversación entre los visitantes.*

technological artifacts); 3rd Generation – Science Centers (collection of science experiments). However, the differences between these generations are not restricted to focus alone, as they are influenced by a complex relationship of material, historical and economic conditions. For a detailed study of the historical conditions of focus development, we suggest the reading of McManus (1992).

There is an idea of a late third generation, or fourth generation, which, according to Padilla (2001), are institutions that are characterized by taking into account the contemporary conditions of globalization; by the high degree of competent and integrated work; by shifting from high-volume artifacts to high-value ones; by computerization; by the integration of technology, knowledge and skills; for innovations in educational practices; by the use of work schedules; by customizing the visiting experience; by the interaction between global and local themes.

These demands can be related both to theme parks, according to Londoño, Solbes and Guisasola (2009), such as the Disney park (private and for-profit) [5], as well as to conservation and leisure parks, with theme frames that do not have a single focus , or a predominant one, but offer various forms of informational entertainment.

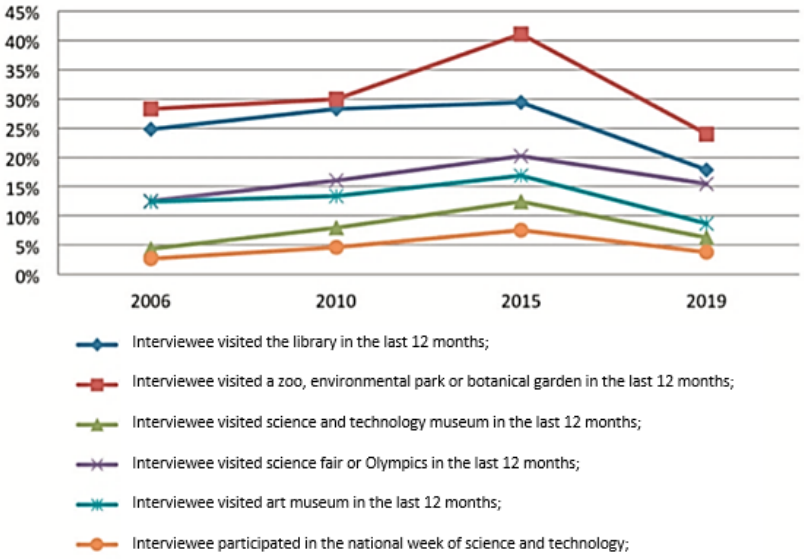
Currently, with the emergence of theme parks with high-tech and expressive undertakings by private groups, or even with the participation of governments, there are polyphonic and pluristylistic enunciative constitutions, which range from the presence of zoo-botanical gardens to exhibitions with interaction with intelligence artificial (SABIESCU; CHARATZOPOULOU, 2018). We understand that the spirit of nowadays contemplates a diversity in cultural, economic and ideological aspects, which is manifested by the forms of expression of the groups of scientific thoughts and with their own treatment and presentation of the local context. Thus, we understand as theme parks not only the lucrative and high-tech ventures, but also environments with multiple focuses, which contribute to the leisure and knowledge of visitors.

Resuming, the dissemination actions in ST in the North Region, through institutions of non-formal education spaces, the STSs are new, but they have a not recent history, as the oldest zoo in Brazil exists in the Amazon. However, there are few other non-formal institutions, especially outside the state of Pará. However, this number has recently started to change.

Initially, we bring data from the latest research on public perception of Science carried out by the CGEE (2019) on access to ST spaces. The survey shows that zoos, botanical gardens and parks are still the most visited by the population, corresponding to 25% of the responses, as can be seen in Figure 1.

[5] In 2019, the definition of museum was re-elaborated, characterizing it as 'non-profit', and, in this case, not including the Theme Parks of Disney and other companies, even if they have activities related to cultural heritage and conservation.

Figure 1: Percentage of interviewees according to the declaration of visiting spaces for scientific-cultural dissemination and participation in Science and Technology events, in 2006, 2010, 2015 and 2019..



Source: CGEE (2019, p. 15).

The preference for these public open spaces with biological objects or regional environmental elements has been maintained in the last four national consultations. Polino (2015, p. 103), in his research on public perception of ST in official documents from some Latin American countries, informs that most populations choose to visit environmental parks[6], botanical gardens and zoos, demonstrating that they are not unique phenomenon in Brazil:

- Argentina – 2012 survey – Visits to a zoo, botanical garden or aquarium (26.3%); and visits to a national park or nature reserve (24.7%);
- Colombia – 2012 survey – Visits to a natural park (48.4%); and visits to a zoo or aquarium (40.1%);
- Mexico – 2011 survey – Visits to a zoo or aquarium (43.4%);
- Uruguay – 2011 survey – Visits to a zoo, botanical garden, aquarium, reserve or planetarium (30%).

Despite this Brazilian and Latin American preference, the Northern Region of Brazil has the smallest number of institutions. Of a total of 3,118 museums registered at the Instituto Brasileiro de Museus (2011), only 152 (4.8%) are in the North Region, and only 19 of these institutions are categorized under Natural Sciences and Natural History

The change in the absence of STSs may result from the increase in graduate programs in education and science teaching in the North Region, with a focus on school pedagogical studies in places outside the classroom, with a special increase in the number of research since 2008 (SEIFFERT-SANTOS; FACHÍN-TERÁN, 2013). This is due to the fact that there are no natural history museums and science centers in most states in the North Region, with the exception of Pará and Amapá states. Therefore, these researches sought institutional spaces where the SD process takes place and institutions similar to the museum, which would enable themes related to the teaching of Science and the local context (cultural, anthropological and forestry elements in the Amazon, etc.). The research groups in the lines of investigation related to the non-formal space in the states of Pará, Amazonas and Roraima deserve to be highlighted.

[6] The use of the term park does not coincide with the concept of theme park, as the theme park has a playful focus. Environmental, national or natural parks are legal terms linked to environmental legislation for research, conservation and/or sustainable development. However, there is an apparent approximation: they are all open spaces with access to biodiversity and diverse human dynamics.

Research activities in museology in the state of Pará are the oldest and most consolidated in the country, resulting of the creation of the first zoo and second Brazilian research center, in 1885, the Emílio Goeldi Pará Museum (MPEG), the Zoobotanic Park being registered in 1887 (SANJAD et al., 2012).

According to Sanjad et al. (2012) and Florez, Sanjad and Okada (2018), living collections and open space distribution develop a musealization and a type of museal activity with the following propositions: a) the arrangement that the living collections are exhibited contributes to the understanding the relationship between man and nature in different historical periods; b) the musealization process takes place in a different way in botanical gardens in relation to natural history museums, due to the immobility of the collection (planted); c) the communication potential of nature museums is related to the fixity or immobility of the collection, and to the dynamism of natural transformations verified over time (the natural cycle of organisms and the seasons of the year).

The Science Grove Park/INPA based on research

Seiffert-Santos and Cunha (2018) carried out a survey of investigations about the Science Grove Park/INPA, the location of our research. The articles highlighted the foundation of INPA, in 1954[7], and the creation of the Science Grove Park, in 1995, with a physical space of 13 hectares, located in the Center-South Zone of Manaus/AM, defining it as a socio-educational space for the promotion of dissemination of science and environmental education for community and school visitors.

On its website[8], the institution emphasizes that its objectives are: to develop and promote the INPA program for technological, scientific and innovation diffusion; offer the local population a leisure option that can contribute to their cultural and environmental education.

The articles stand out from the implementation of the Science Circuit Program, in 1999, linked to extension activities, based on learning through exhibition and playfulness, aimed at students of kindergarten and elementary school, with varied activities, involving the use of water resources, recycled pyrogravures , oral health, nutrition and food labeling, terrestrial invertebrates, aquatic mammals, harpy eagle life, malaria and dengue, social technologies of bees and frogs, among others (NORONHA; SANTOS; CARVALHO, 2013; BATISTA; VASCONCELLOS; FACHÍN-TERÁN; , 2015; MARTINS et al., 2015; MOTA; FACHÍN-TERÁN; GONZAGA, 2015; SILVA et al., 2015).

The three most cited stations in the surveys are the amazonian manatee (*Trichechus inunguis*) tank – see Figure 2 –, the giant otters nook (*Pteronura brasiliensis*) and the inajás nook (palm tree, *Attalea maripa*), although the trails are also worth mentioning (which are richly occupied by vegetation, with informational signs), in which animals, such as poraques (electric fish, *Electrophorus electricus*), and various aquatic plants are the protagonists (SEIFFERT-SANTOS; CUNHA, 2018).

[7] INPA established itself in Manaus under the direction of the National Research Council (CNPq), on June 27, 1954 and, in 1987, it was transformed into a direct administration agency, with administrative and financial autonomy, linked to the Science and Technology. Currently, INPA is linked to the Ministry of Science, Technology, Innovation and Communication, provided for in Decree No. 8.877/2016, and is an Institution of Science and Technology (ICT) under the terms of Law No. 10.973/2004, regulated by Decree No. 5.563/ 2005, and its purpose/mission is "to generate and disseminate knowledge and technologies, as well as to train human resources for the development of the Amazon".

[8] Available on: http://bosque.inpa.gov.br/bosque/index.php/obj.

Figure 2 : Sensorial experiences, in the Amazonian Manatee tank, conducted by researchers and teachers with children from kindergarten. On the left, the child, through headphones, hears the animal's vocalizations, and on the right, the children can touch the skin of a puppy.

Source: Alencar, Fachín-Terán and Barbosa (2016).

According to Seiffert-Santos and Cunha (2020), there were three scientific and cultural dissemination projects promoted by the Grove Park: a) Projeto Pequenos Guias (Children Guides Project) - which operated between 1995 and 2010, with the activity of local children for environmental training, and who contributed as guides in the park for tourists and visitors; b) INPA Open Doors – a project in which INPA laboratories carry out dissemination activities about their research to the general public. Today, in part replaced by the Science and Technology Week; c) Science Circuit Project – schools are registered and visit the park with the presence of several INPA research groups and partners who present results and products of the investigations carried out by these groups to the students.

This last project in the field of scientific dissemination and environmental education (the Science Circuit), directed by COEXT (Extension Coordination), is still active. According to Moreno (2009), it is estimated that this project contributed to scientific and environmental dissemination activities for more than 25 thousand students, between 1999 and 2010. In leaflets published by COEXT (2012), it is possible to observe that the activities are based on three axes:[9]

- Health – tropical diseases: malaria, dengue, leishmaniasis; medicinal plants from the Amazon and oral health;
- Environmental practices – questions (Quiz) to students about reducing emissions of Greenhouse Gases (GHG), seedling production, how to avoid urban fires and the scouts in the Amazon;
- Biodiversity – Amazon turtles, live terrestrial invertebrates, aquatic insects and aquatic mammals (Amazonian manatees).

The activities took place until 2012 in the Science Grove Park and Adolpho Ducke Botanical Garden[10], involving 45 thousand people, including children, young people and adults, and with the participation of 182 urban communities and more than 520 schools.

The project, which involves approximately 300 students at each edition, has a format that resembles a Science Fair, or Workshop, with various presentations, tents, banners, models, preserved biological material, etc., depending on the type of exhibition that COEXT employees have understand appropriate to present to visiting schools. The Science Circuit has ten annual editions, always on the last Friday of the month (see Figures 3 and 4). The Circuit has several exhibition stands (ranging from 15 to 30), also called visiting stations, organized by Science Circuit collaborators: INPA research groups, universities, among other institutions.

[9] We do not find information on the projects coordinated by COEXT and CAAV on the institutional website, only their mention. We did not have access to the written project either. Thus, the source of information was INPA's publicity brochures.
[10] As a result of invasions and deforestation in the Adolpho Ducke Reserve area, the Adolpho Ducke Botanical Garden was created in 2000, managed by the Manaus City Hall until 2009, when management was transferred to the private company Musa (BARROSO; MESQUITA, 2014).

Figure 3: Science Circuit, with the participation of aquatic insect researchers.

Source: Barcella (2011).

Figure 4: Edition of the Science Circuit November/2018. Water consumption.

Fonte: Seiffert-Santos (2020a).

The contributors alternate with each edition, which allows for variations or even differences for each exhibition. In addition, this SD strategy collaborates with the participation/dialogue of school teachers in the Science Circuit activities (MARTINS et al., 2015). This diversity can be reported by the report of research on two editions of the Science Circuit, carried out in 2014, such as Silva et al. (2015) and Mota, Fachín-Terán and Gonzaga (2015).

Based on these data and considering the theoretical framework of this article, we hope to have made understandable the possible relationships between the STS, as a SD, and part of the communication processes of the Science Grove Park.

In Figure 5, it is possible to observe a distribution scheme for visiting stations with their attractions and their current names written in Portuguese and English.

Figure 5: Schematic of visiting places in the Science Grove Park included in the visitor's brochure.

Source: COEXT (2018).

METHODOLOGY

The research is qualitative in nature with the function of understanding human and social phenomena (MALHEIROS, 2011). According to Richardson (2012), qualitative research is the most suitable for social phenomena with regard to methodological aspects, forms of data collection and analysis. Thus, this is a qualitative, descriptive and exploratory research.

In this investigation, we built a corpus of documents based on the request made to administrative servers located in the Science Grove Park, in Manaus/AM, subordinated to the Coordination of Support for Visiting Areas (CAAV) of the Extension Coordination (COEXT) of the National Institute of Amazon Survey (INPA).

The criterion for choosing the STS was through the selection of research institutions that carry out SD with the presentation of STS in the city where the researcher lives – namely, Manaus/AM. In this case, there was only the Amazon Museum (NGO Musa), the Amazon Museum (administered by the Federal University of Amazonas) and Science Grove Park/INPA. The latter was selected due to its presence in the ABCMC catalog (2015).

In this investigation, a simple categorical analysis was adopted for the terms initially formulated by Bardin (2009) and by Richardson (2012). The research was based on the collected documents: public workers' work plans; monitors' work plans; electronic spreadsheet of requests for scheduling visits online for the period from 06/2016 to 12/2018; management report; website of the Grove Park; brochures for the dissemination of the Grove Park; photographic record of the visiting stations by the researcher. The visit scheduling data present in the spreadsheet, after being reorganized, were tabulated. From the tabulation, we make use of a descriptive analysis of categorical content (BARDIN, 2009), constructing a visitation frequency graph based on the variables already explained in the document itself.

According to Bardin (2009), content analysis can be defined as

> A set of communication analysis techniques aiming to obtain, through systematic procedures and objectives of description of the message content, indicators (quantitative or not) that allow the inference of knowledge related to the production/reception conditions (inferred variables) of these messages. (BARDIN, 2009, p. 44).

We performed some visits to the park, talked with employees and monitors about the functioning of the activities and recorded it in the field diary.

Among the variables included in the visit scheduling electronic spreadsheet, which was made available to us, we highlight the following: name of the requesting institution; legal nature, public or private; educational level of the visiting group; characteristic of the school group; Additional Information; presence of a person with special needs; school year; visit shift; date; number of intended students; number of students present; number of others/desired companions; number of others/companion present; first visit; how you were informed about the Science Grove Park; intended visiting points; moderator decision and age of the group.

In order to provide a qualitative categorical analysis, we reorganized the spreadsheet variables. The variables of requests that had empty fields above 70% of the records (school period, number of students present, number of others/companions present and age of the group), for example, were no longer included in the categorical analysis.

The data are presented in: the activities of the teams of employees and monitors of the Science Grove Park, and the data on requests for visits.

The investigation is guided by the following questions: a) What are the functions and activities of the Science Grove Park work team in relation to the activity of popularization of Science and Technology?; b) What are the profiles of the visitors who forward the request for a visit and their interests in the STS?; and, c) How do these dynamics of employees and requests for visits present the profile and interests of visitors of school origin (formal education)?

RESULTS AND DISCUSSION

Work team

The Science Grove Park is managed by the Coordination of Support for Visiting Areas (CAAV), which has six administrative technicians, whose functions are in line with the objectives and goals of the individual work plan, in which the planning, training and execution of the Science Circuit Project are detailed and Curricular Internship for monitoring, ticketing, support and supervision of visits. Among the technicians on the work team, there are people with degrees in Pedagogy, Social Assistance, Agronomy and Forestry Engineering.

The CAAV coordination is responsible for supervising and supporting the work of reception of visitors, overseeing the maintenance of the park, carrying out the planning and execution of its

coordination. There is no intellectual production activity necessarily, as they are all technicians, whose function is to support researchers and laboratory activities.

The objectives of CAAV are: organization, realization and support to scientific, educational and cultural events in the visitation area; reception, supervision and support for groups of visitors in the visitation area; training of new professionals for activities related to the area of environmental tourism, administrative management and environmental management with an emphasis on the Amazon biome; promotion and scientific diffusion and environmental education at INPA (Employee Work Plan – Individual Goals, INPA, 2018a).

Members of the work and training group, the front desk monitors are the ones who make the tours at the visiting stations. We identified thirteen monitors during our data search period, of which four were intern in the afternoon and nine on Saturdays and Sundays. These monitors were students of the Tourism School at the following institutions: Fametro University Center, State University of Amazonas and Nilton Lins University.

The front desk interns have the following objectives: mediate reception actions with the public who visit the Science Grove Park and contribute to the development of educational activities in the context of the Science Grove Park. We highlight as specific objectives: accompanying visitors and schools along the trails and *providing simple information about visitor centers and about flora and fauna, trying to awaken in the visitor a greater interest in the natural landscape of the place*; participate in projects developed in the Science Grove Park, such as the Science Circuit and activities organized on commemorative dates (Environment Week, for example). The interns drew up an individual internship plan, including preparatory training, bibliographic reading, assistance in workshops, visits accompaniment, service at the Science House and the delivery of the final personal report (Interns' Work Plan - Individual Goals, INPA, 2018b, emphasis added).

There were also thirteen monitors for forest management and landscaping, among which eight worked in the morning shift and five in the afternoon shift, on weekdays. The interns were students from the following schools: Environmental Technician from the Technological Education Center of Amazonas (CETAM) and Technical Education Center (CENTEC); undergraduate program in Biology from the Estácio de Sá University; undergraduate program in Environmental Engineering from Nilton Lins University; and undergraduate program in Environmental Management from the Institute of Higher Education – UNIASSELVI.

The objectives of the forest management and landscaping interns are: to train new professionals for activities focused on the environmental area, with an emphasis on the Amazon biome, in order to make them more technically prepared, in order to respond to the daily requests of the Science Grove Park, both in relation to socio-environmental issues and pedagogical issues and scientific language. Its specific objectives are: to monitor the demonstration of daily activities in the production of seedlings of forest and agronomic species in the Nursery of Science Grove Park; monitor and carry out silvicultural practices adopted in the forestry area*; guide visitors to the Science Grove Park on matters in the technical, educational and receptive areas* (INPA, 2018b, emphasis added).

The work schedule includes seed collection activities, support to workshops, participation in environmental activities, care with the park's landscaping, planting seedlings, production of seedlings, *conducting guided visits and delivering the final report* (INPA, 2018b , emphasis added).

We observed that all interns were responsible for guided tours and participated in environmental pedagogical activities. However, one group focused on forest management and landscaping, and the other on reception of visitors and scheduled study.

Regarding the training of monitors, we were not given a written document. However, in a work published by INPA (HIGUCHI; FARIA, 2002) and, later, in a conversation recorded in the logbook with the monitors and employees of the Science Grove Park, we learned that, after the semiannual recruiting process, in the first week of internship, they participate in a training event with lectures, activities to recognize visiting stations and laboratories, and integration with employees and other monitors. Among the information, the highlights are the lectures given by each laboratory with space in the Park, such as the Aquatic Mammals Laboratory (LMA), the Bee Research Group (GPA), the Amazon Chelon Research Center (CEQUA).), the Laboratory of Psychology and Environmental Education (LAPSEA), the Herbarium and a research group that studies the Poraque (electric fish). There was

participation in the activity of recognition of Amazonian plant species with an agronomist and/or forestry engineer, and in the recognition of visiting stations with the CAAV coordinator. It was also highlighted the receiving of a reading material addressing the front desk and also customer service activities

In this research, it is possible to list a training program for monitors and teachers who use the Grove Park[11] for the development of positive educational experiences. However, for more factors to be considered as a training program for monitors, it can be consulted in Hooper-Greenhill (1999), Falk and Storksdieck (2005), Rodari and Merzagora (2007), Marandino (2008), National Research Council (2009), Queiroz et al. (2011), Bizerra and Marandino (2014), and Carvalho and Pacca (2015), among others.

We understand that some problems already found in other researches about the monitoring project in non-formal spaces, here in the theme park, are repeated, meaning, the reduced number of monitors due to the large number of visits (see the next section); Voluntary internship without transportation, lunch and reading material costs; Formation and maturation of the short-term monitoring experience (six months); change monitor frequently; At the end of the monitoring internship, there is a dismissal without any incentive to the intern to remain in and integrate with other sectors of the institution.

These circumstances can be balanced with possible measures, for example:

- Enter into an agreement with higher education institutions and agencies linked to professionalization at the municipal or state level. Training program with guided visit to basic education teachers and in specific themes (KATZ et al., 2011), and elaboration of didactic sequences (PASCUAL; ARANZABAL, 2014). Thus, create a database with volunteer teachers of the Grove Park;
- Agreement with professionalization agencies at the state, municipal and federal levels with availability for scholarships, or establish a foundation for fundraising[12];
- Monitor training program in which it integrates with laboratories to enable other internships in the research area, and maintain a few days a month contributing to the training of new monitors (LUEHMANN, 2009);
- Memory of the Grove Park activity log, training meetings and decisions and thematic essays/dissertations on the reality of Grove Park for a database of experiences and good practices (BASSOLI, 2013);
- Implement an annual meeting of the monitors of the Science Grove Park to share experiences, projects and build a network with the Grove Park administration (HIGUCHI; FARIAS, 2002).

Visit Request

Regarding requests for visits, one thousand nine hundred and fifty-eight requests for scheduling visits (n=1,958) were identified between June/2016 and December/2018. Of these, nine hundred and fourteen (n=914 groups of schools; 46.6%) were from public schools, six hundred and eleven (n=611 groups of schools; 31.2%) were from private schools, and four hundred and thirty-three (n=433 groups; 22.1%) from other institutions. Of the latter, there were churches (n=53 groups), scouts (n=46 groups) and social or philanthropic care centers (n=20 groups), among others.

During this period, an average of 63.1 groups/month, 3,700 visitors/month and 58.1 visitors/group/month were registered, which is equivalent to an average of 142 people per day (considering the six-day visiting week).

We can highlight that the educational levels of the groups of visiting students were: kindergarten (n=272 groups; 13.9%), elementary school (n=440 groups; 22.5%), secondary school (n=121 groups; 6 .2%), superior (n=125 groups; 6.4%). The other institutions had mixed groups with visitors at the levels

[11] Azevedo, Higuchi and Barcelos (2009) report that LAPSEA/INPA has a continuing education project for basic school teachers on scientific and daily knowledge and the Amazon forest from a socio-environmental perspective.

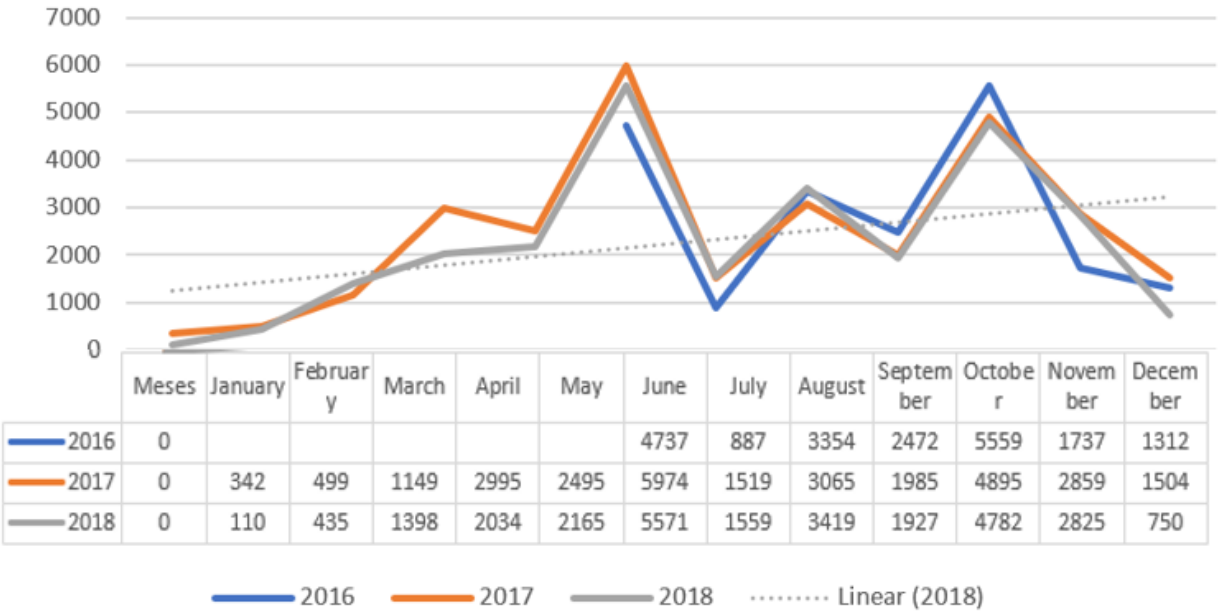
[12] The Manaus City Hall, in 2019, entered into an agreement with COEXT/INPA to maintain monitors with municipal grants after the notice of the closing of monitored visits, and the reduction of public employees working in this sector. Thus, the operation of the Science Grove Park has been maintained until the present.

of kindergarten, elementary, secondary and higher education (n=458 groups; 23.4%). The majority of scheduled visits were kindergarten children and elementary school students, accounting for 36.4% of requests.

Morning shift visits were more requested (n=1,298; 66.3%) than afternoon visits (n=658; 33.6%). We associate morning visits with those of kindergarten and early elementary schools, considering that this is the time when these schools normally operate. In annual terms, these requests for visits were distributed as follows: 2016 (n=481 groups; 24.6%), 2017 (n=775 groups; 39.6%) and 2018 (n=697 groups; 35.6%) . Of these requests, only 8.58% (n=168) declared the presence of people with special needs.

In these interstices, the most visited months are: June, due to the Environment Week, and October, due to the Science and Technology Week, the children's commemorative period and INPA's anniversary, in October (Figure 6). School commemorative dates have a strong influence on visits to the Grove Park. The months of December, January and July are less visited, in association with school break, and in February and March visits begin, with school return.

Figure 6: Distribution of the number of visitors to the Science Grove Park based on formal requests for visits (2016 to 2018).



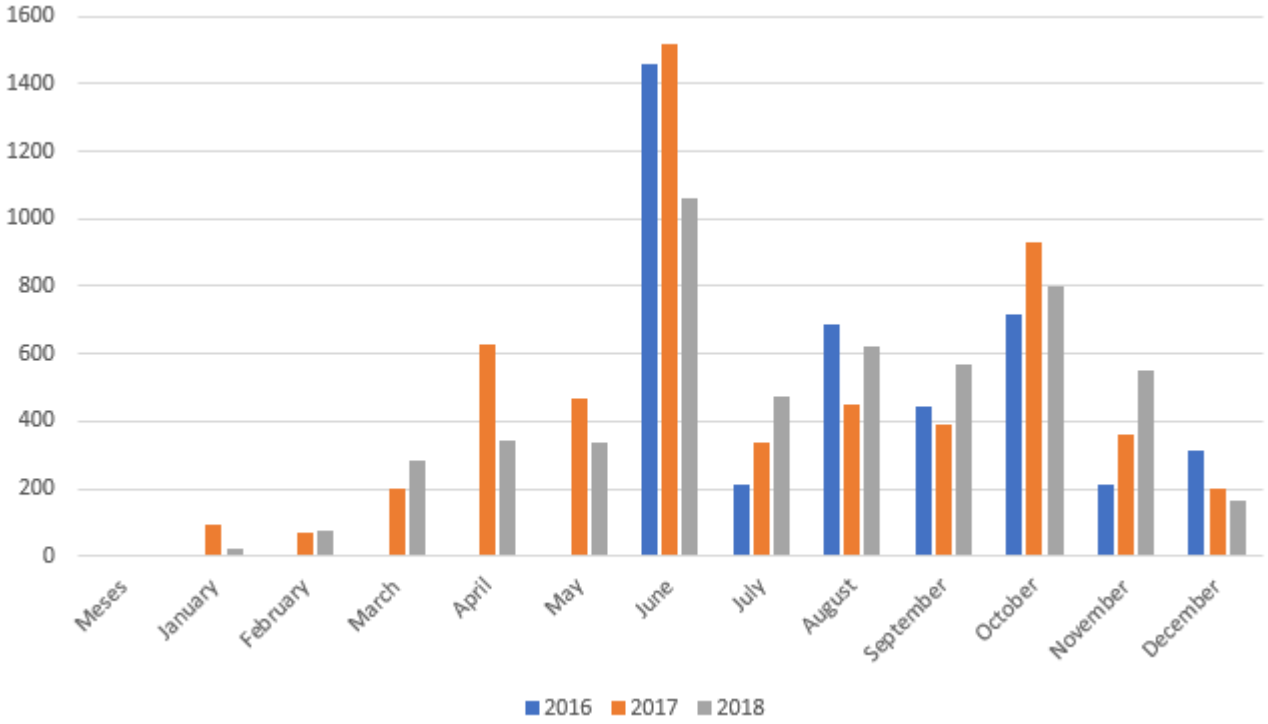
Meses	January	February	March	April	May	June	July	August	September	October	November	December
2016	0						4737	887	3354	2472	5559	1737	1312
2017	0	342	499	1149	2995	2495	5974	1519	3065	1985	4895	2859	1504
2018	0	110	435	1398	2034	2165	5571	1559	3419	1927	4782	2825	750

Source: Data reconstructed by the researcher.

In this three-year period, the Grove Park received ninety-five thousand three hundred and fifty-six visitors (n=95,356), an average of 48.7 visitors per request. However, it should be noted that formal requests are a part of the demand that the Park receives, not including free entries for visitors under the age of 10 or over 60, payers of spontaneous visits (individuals, groups and families) and also unscheduled groups (these data have a physical record book). This also does not include visitors on days when admission is free, where there is no ticket count, such as the anniversary week of the Science Grove Park (first week April), INPA birthday week, Environment Week and Science and Technology Week.

The frequency of visitors illustrated in the previous Figure is proportional to the frequency of accompanying persons responsible for the groups of visitors (Figure 7).

Figure 7: Distribution of the number of companions to visit groups in the Science Grove Park based on formal requests for visits (2016 to 2018).



Source: Data reconstructed by the researcher.

Visits are carried out in groups, limited to 100 people per group and 300 people per shift. Thus, we counted requests in groups of multiples of 50, that is, 50 visitors (Box 1).

Box 1: Distribution in multiple groups of 50 visitors (2016 to 2018).

Groups	50	100	150	200	250	300	Over 300	Not informed
Visitors	1,389	440	75	27	8	2	11	6
Percentage	70.94%	22.47%	3.83%	1.38%	0.41%	0.10%	0.56%	0.31%

Source: Data reconstructed by the researcher

More than 70% of requests involved groups of up to 50 people in the period informed. A similar percentage was observed in relation to the number of companions and guardians; groups with up to five adults represented 47.75% (n=935). See Box 2.

Box 2: Distribution of companions/guardians by groups of visitors (2016 to 2018).

Companions by Groups	5	10	15	20	Over 20	Not informed
Responsible Companions	935	557	209	110	125	22
Percentage	47.75%	28.45%	10.67%	5.62%	6.38%	1.12%

Source: Data reconstructed by the researcher

We emphasize that, in the period of analysis, most visitors indicated that they were visiting the Science Grove Park for the first time (n=1,196; 61%), and, therefore, only 37.8% (n=740) had already visited it.

Although it is normal for requests to be authorized, there is a record of requests denied by the moderator (n=281; 14.3%) due to rescheduling visits and other causes.

An interesting information refers to the source that suggested the activity in the Science Grove Park to the visitor, meaning, how the visitor learned about the possibility of visiting groups. It is common for "word of mouth" to be the main form of dissemination of it (COSTA; IMHOFF; BORGES, 2015), but, in relation to the Park, the sources were websites with 33.25% (n=651), social networks (10.9%, n=213), broadcast media (6.8%, n=133) and others (0.4%, n=9). Most visitors reported having knowledge of Park visiting from different sources, what we call mixed source, with 39.6% (n=775), this option covers the indications of family, friends and co-workers.

The objectives and/or motivations for visits from elementary, secondary and higher education levels are divided into four groups: a) school knowledge, in other words, activities that generate technical reports, or some type of activity analogous to school evaluation; b) enrichment experience on the Science Grove Park, related to biodiversity and the environment; c) event activity, school awards or projects; d) others, such as rescheduling of activity, or recognition by INPA. See Box 3[13] (22.1% of requests: n=433).

Quadro 3: Motivações para as visitas (2016 a 2018).

Box 3: Reason for visits (2016 to 2018).

Reason	Elementary	Secondary	Post-Secondary
Enrichment experience	175 (58.5%)	44 (61.1%)	15 (24.2%)
Event activity	76 (25.4%)	4 (5.5%)	14 (22.6%)
School knowledge	37 (12.4%)	21 (29.1%)	31 (50%)
Others	11 (3.7%)	3 (4.1%)	2 (3.2%)
Sum per level	299	72	62

Source: Data reconstructed by the researcher.

We observe, in Box 3, that the main reason for elementary and secondary levels are similar. There is an emphasis on the enrichment experience in most requests, exceeding 50%. However, event activities occur in a significant percentage at the elementary level, especially as a result of awards and some projects at the school level, or in celebration of special dates. In turn, the emphasis on secondary education refers to school knowledge activities, especially in technical visits to technical courses and classes related to Biology and Environmental Education. At the higher level (post-secondary and university), the emphasis of the visits is on school knowledge, that is, activities of practical classes of disciplines and other similar activities, for enrichment experiences, in addition to activities of scheduled events. We can relate these results with those obtained by Seiffert-Santos and Cunha (2019) in a study involving research on science education in non-formal spaces, in the works presented at the National Meeting of Research in Science Education (ENPEC) between 2011 and 2017, related to three categories of this research, namely: cultural enrichment (similar to the enrichment experience) and school complementation (similar to school knowledge) and non-formal alternatives. In the cited work, the more frequency of works was found in the cultural enrichment category, similar to our study.

The goals and reason of activities at the child level are more homogeneous. The visits are for the tour class, socialization, award for visiting the Grove Park, experience with the fauna and flora, celebration of Children's Day and Environment Day.

We observed, from the data presented above, that most visits to the Science Grove Park take place in the morning, by public schools, by students at the kindergarten and elementary level, with groups of up to 50 people, and with the monitoring of groups of 5 responsible people with objectives/motivations to experience the environments, biodiversity and socialization, especially in the Environment Week and Science and Technology Week.

[13] This table presents different totals from those presented in Table 6, considering that we disregarded the requests that did not fill in this information and also those related to mixed groups, which are heterogeneous, non-school, whose visits do not necessarily have scientific or environmental educational intention.

The only research we found that presents data on visitation to the Science Grove Park was that by Maciel and Fachín-Terán (2014), covering the period from 2010 to 2012, presenting numbers that we consider high values compared to those obtained by us: more than 100,000 visitors per year, with an average of over 600 schools per year. However, we reinforce our observation that non-digitized logbooks were not included in our data.

Returning to the reason of school visits, we observe the frequent use of words such as experiences, sensitize and knowledge, among others with a similar meaning, in the category of enrichment experience, in which a belief is perceived that experience generates knowledge about environment, fauna and flora, without the burden of school obligations. On the other hand, we identified that the category of school knowledge has the meaning of an experimental class, the elaboration of reports and the establishment of relationships between theory and the experimental world in nature: an understanding that the concepts seen in class at school can be observed in non-formal space, as if a confirmation occurred. In this sense, it is possible to infer that some concepts involving ecological relationships, some morphological structures and the analysis of some environmental situation, especially associated with the destruction of anthropogenic origin to the environment, can be apprehended without much difficulty in the STS as a forest fragment. However, it is necessary to plan, make prior arrangements with the group and prepare the place in order to capture the concept in the observation. We emphasize that this is a constructed situation, a directed observation and not a pure or spontaneous natural observation. Epistemological reflection is important in order not to permeate a naive empiricism, and to visualize the forest fragment, in this case secondary forest, as a pure environment, despite being an area that provides activity with the Amazon forest environment, but modified, and with many planted vegetables in a forest management and landscaping regime.

Data from station visit request

Taking into account that there are twenty stations and estimating the minimum stay of ten minutes in each one of them, the visitation would last at least three hours, without taking into account the time of walking on the trails between one station and another. Thus, it is essential to plan the visitation itinerary well, selecting the stations and focusing on themes and possible observations, in order not to leave visitors exhausted by walking on the forest trails, allowing them to enjoy the rich experiences that a station has to offer and enabling dialogues and interactions with teachers and monitors.

In the Science Grove Park electronic booking form, the following options are available: Trails; Amazon Chelonian Center (CEQUA), Planetarium Session, Science Circuit, "None" [of these], and "All" [these].

Just below this item, it is requested to inform the purpose of the visit, so that the previous selection of stations can be given, to plan the reception of groups to the park and also control the number of monitors and possible combinations of stations so that there is no overcrowding of spaces.

By checking the option "Trails", it is possible to make combinations involving the following stations: Main entrance, Giant Otter and Amazonian Manatee Nurseries, Tanimbuca Island, Suspended Trail, Culture Store House (passage without entry), Lake Amazon (visit to CEQUA and alligator nurseries are optional) and return via the disabled station on the Inajás Island (due to access ramps with accessibility for wheelchair users), direct access trail to the outside environment of the Science House, or a trail that passes through the Glass House and Snack bar (reaching the external environment of the Science House, which is visited when the planned time has not run out). On this route, it is possible to visit seven to eleven stations.

CEQUA has two access possibilities. One of the possibilities is to take the traditional *Trail*, with a focus on visiting CEQUA and the alligator nurseries (part of CEQUA); the other is through the access trail to Inajás Island (graphed by Poraque(electric fish) in current visitation schemes), which is accessible to wheelchair users, whose return is by the same path.

The Planetarium Session, which takes place in one of the rooms of the Science House, is not carried out by the Park team, but by undergraduates or graduated students from the Natural Sciences and Physics schools at the Federal University of Amazonas, many of them linked to projects of university extension (similar to research assistant) or teaching initiation (similar to teaching assistant). As it involves

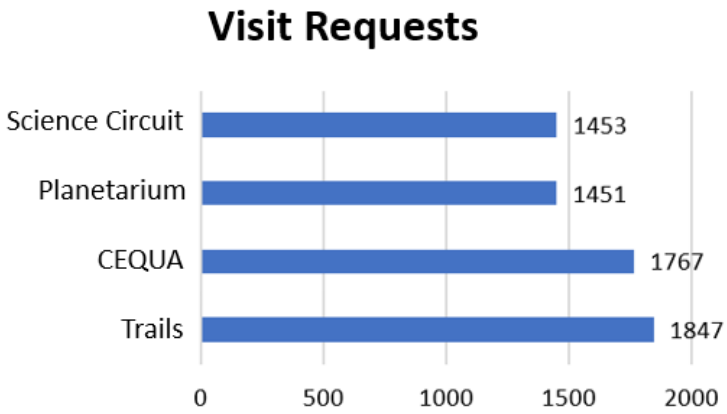
the use of INPA space by third parties, the scheduling of visits takes place according to the availability of the Park's schedules.

In the Science Circuit Project, schools are invited to register to be scheduled for one of the ten annual exhibitions.

All options are presented in the "All" option, making it possible to schedule according to the possibilities of activities, according to the objectives of the visit. And the "None" option is associated with events and activities specific to practical classes or technical visits, in which there is no need for a monitor, since it is an activity directed by an instructor or professor linked to the group of visitors.

In Figure 8 we present the relative frequency of selected options. The option "None" was little computed (n=66) and the option "All", the most selected (n=1.451). However, we decomposed the options and realized that the most selected option was "Trails", which, in a way, confirms the motivation of the visits. We present the data in Figure 8, in which motivations related to the enrichment experience and school knowledge are considered (Box 3).

Figure 8: Relative frequency of requests for visits based on the choice of visiting stations in the Science Grove Park (2016 to 2018).



Source: Data reconstructed by the researcher.

However, the difference between the most checked and least checked option is approximately 21.4% (n=396), confirming that all options are well requested. The NRC (2009) suggests visiting routes, as narratives that each season contributes to the construction of meaning for the visitor, individually or in groups, however, in normally closed environments. This is relatively more manageable in planned and closed environments. However, as already mentioned, public open spaces have the limitations of the collection being planted, fixed buildings and subject to weathering, the seasons and the time of day. It leads to a special effect by experiencing natural rhythms. Something that just experiencing it with all the senses leads to a knowledge of contact and is not reduced to just a cognitive knowledge by the exhibition's *design*.

CONCLUSION

Our considerations are presented in function of the research objective in a synthesis of the main results of the characterization of an Amazonian STS and in the reinforcement of the association of this non-formal space with the concept of Integral Heritage and with the teaching of Science. The Science Grove Park is a unique institution due to its characteristics. Initially, its framing as a Theme Park and, therefore, because it is analogous to the Science Museum for that reason. Then, on the one hand, the Science Grave Park leads to scientific and environmental leisure, which gives it its own identity as a Theme Park for playfulness and, on the other hand, it is less similar to the idea of a Science Center that excels at experiment and the application of scientific concepts.

The work team linked to the Extension Coordination manages the space together with INPA's research laboratories and performs the SD with different roles: (i) The CAAV manages with the monitors the reception visits and the execution of the Science Circuit Project ; (ii) The laboratories in

the park display informative material, such as a banner and interpretative signs of their research area, which they deem important to popularize

SD is developed on the scientific and environmental theme. It is scientific due to the presence of scientific breeding sites[14] with the presence of interpretive media with information related to these breeding sites, such as the case of the Amazonian manatee and the chelonians at CEQUA. It is environmental due to the fact that the open environment has the natural appeal of forest immersion and, in this way, associates the conservation of Amazonian specimens. The Grove Park documentation itself assumes this theme and is confirmed by the request for a visit motivated by an enrichment experience and the choices made when carrying out the trails.

The predominant visiting public is the school, especially the kindergarten and elementary school. But there are several groups present. In this way, the park assumes the role of not schooling the tour, but allowing it to be plural for different groups. This is evident due to the park's mission and its diversified activities, operated by the reception and landscaping monitors, and the Science Grove Park's agenda with varied activities, as shown, the Environment Week and the Science and Technology Week, which receive several audiences and the visit is encouraged on these dates with free entry.

An important point in the communication developed at the STS Science Grove Park is recognizing the object of observation, which is the reason for the experience and activity, and recognizing it as a ST heritage. In our understanding, the adapted concept of heritage should not be limited to the species to be preserved, but extended to the notion of identity and belonging to the Amazonian universe, considering that heritage is something that we feel is ours, to which we belong: it is Amazon, it is Brazilian, and it belongs to humanity, according to Ordinance No. 422/2017 MC/IBM, ICOM and the Federal Constitution of Brazil (BRASIL, 1988). Based on this concept, we consider that the Science Grove Park carries out the musealization process as a heritage of the Amazon richness, alive and present, in an innovative and different way in relation to the covered museums.

The institutional identity from theme park to living museum formally elevates the organizational concept and the dialogue with integration between the laboratories to a new step. According to the principles of museum education in Ordinance No. 422/2017 in Article 4, which level the museum to a non-formal educational institution and clarify the need for an organized educational process, with a plural theoretical-experimental orientation, in dialogue with society, taking into account a multidisciplinary teaching team, the construction of an educational and cultural plan, seeking to ensure the concept of Integral Heritage, and thus collaborate to promote citizenship and regional development.

The sensitivity of an institutional identity focused on Amazonian heritage requires an organization of projects that involves a team of professionals, with long-term fundraising for the adaptation of a museum, and not just a laboratory, a space that, often, executes its proposals with few resources.

About the contribution to education, we can explain about the interaction with the STS Science Grove Park: a) an environment for enrichment experience and potential for interdisciplinarity due to the characterization of the exhibitions; b) the school use of this space is less frequent in basic education (elementary and secondary education) than in higher education, due to the need to prepare the visit and possible excerpts for the analytical work, that is, visit to few exhibitions and more interaction dialogic and analytical about the learning object and school contents; c) the playful role of the space emphasizes the aesthetic aspect of the perception of the natural environment, the visualization of animals and plants and the impact of forest immersion on the consciences of visitors, doing what the monitors understand as "[...] trying to raise in the visitor a greater interest in the natural landscape of the place".

This understanding of the educational and cultural plan through a multidisciplinary team on educational action is not contradictory to the playful and aesthetic character. We believe that both in dialogism is possible for the construction of a cultural educational plan based on edutainment, since the local characteristics that so attract people must be observed, the need to make a scientific and

[14] IBAMA Normative Instruction No. 7/2015, of April 30, 2015, states in its Article 32: "Scientific breeding for conservation and maintenance purposes may only be the object of monitored visits of a technical, didactic nature or to serve education programs of the formal education network, and as long as they do not keep specimens from the groups listed in the previous article. Single paragraph. Monitored visits must be subject to approval by the competent environmental agency upon presentation of a visitation project, and fee charged from visitors is prohibited."

environmental message intelligible and in this in contribution between laboratories and CAAV in this effort for a version of the Amazon to be disseminated, a version that strives for science and technology with respect to the environment.

Finally, the Science Grove Park, as an example of STS of SD, allows us to understand how the place is associated with the regional in the presence of themes and objects of research and SD at the institutional level. In this case, INPA presents, through the park, elements and excerpts from the Amazon biome, to promote knowledge and self-knowledge that Amazonians can interact with in the urban context and in dialogue with scientific and environmental information.

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Author 1 – Project coordeninator, data collection, data analysis, writing.

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DECLARATION OF CONFLICT OF INTEREST

The authors declare that there is no conflict of interest with this article.

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