

Nurturing the Seeds of Sustainability Education: Information Regime in Brazilian Public HEI

Cultivando as Sementes da Educação para Sustentabilidade: Regime de Informação na IES Pública Brasileira

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ABSTRACT

We are currently living the Anthropocene, a period in which humans have generated impacts on nature that corresponds to a geological force capable of modifying the planet's biophysical parameters, affecting its sustainability. Knowledge is a condition for emancipation, and citizens endowed with sustainability knowledge will be able to influence political decisions and the society. Currently, the universities are expected to provide tools for understanding environmental issues from a more holistic perspective, rather than relying on traditional reductionist approaches. Thus, the objective of this study was to investigate the Brazilian Federal Technological Scientific Professional Education Network's (RFEPCT) commitment to relevant environmental issues raised by the Anthropocene. Additionally, the 'information regime' approach was selected to identify factors that may contribute or influence its composition and the information-power relationships. The results show that the RFEPCT members' actions are carried out in isolation, needing an element that integrates information and effectively articulates their social networks. The managerial priority was mostly motivated by economic issues or by public regulation and requirements. This study presents an original and unique Mapping on RFEPCT Information Regime elements and offers a HEI Environmental Agenda as a contribution.

Keywords: Anthropocene. Information Regime. Education. Brazilian Public HEI. RFEPCT.

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RESUMO

Vivemos atualmente sob o Antropoceno, período em que os seres humanos têm gerado impactos na natureza correspondentes a uma força geológica capaz de modificar os parâmetros biofísicos do planeta, afetando sua sustentabilidade. O conhecimento é condição para a emancipação, e os cidadãos com conhecimento sobre sustentabilidade poderão influenciar as decisões políticas e a sociedade a esse respeito.

RESUMO

Espera-se que as universidades forneçam ferramentas para compreender as questões ambientais sob uma perspectiva mais holística, em vez de depender de abordagens tradicionais reducionistas. Assim, o objetivo deste estudo foi investigar o compromisso da Rede Federal de Educação Profissional Científica Tecnológica (RFEPCT) com as questões ambientais relevantes levantadas pelo Antropoceno. Além disso, a abordagem do 'Regime de Informação' foi selecionada para identificar fatores que podem contribuir ou influenciar sua composição e as relações de poder de informação. Os resultados mostram que as ações dos membros do RFEPCT são realizadas de forma isolada, necessitando de um elemento que integre as informações e articule efetivamente suas redes sociais. A prioridade dos gestores foi motivada principalmente por questões econômicas ou por regulamentações da Administração Pública. Este estudo apresenta um mapeamento original e exclusivo dos elementos do regime de informação RFEPCT e apresenta uma perspectiva sobre a Agenda Ambiental da IES como contribuição.

Palavras-chave: Educação no Antropoceno. Regime de Informação. Educação Tecnológica. IES Pública Brasileira. RFEPCT.

Introduction

In the Anthropocene, it is necessary to recognize both the integrating problem dimension - the aggregated impact of human action has become a geological force - and the differentiated dimension of real human life (PADUA, 2017). According to Waters et al (2016), carbon, nitrogen, and phosphorus cycles have been substantially modified over the last century. Thus, rates of sea-level rise, and the extent of human perturbation of the climate system, exceed Late Holocene changes: biotic changes include species invasions worldwide and accelerating rates of extinction. These combined signals render the Anthropocene stratigraphically distinct from the Holocene and earlier epochs.

The proposal for the Anthropocene epoch as a formal unit of the geologic time scale has received extensive attention in scientific and public media. The utility of the Anthropocene concept requires careful consideration by its various potential users. In this matter, Finney and Edwards (2017) start the debate in their paper 'The "Anthropocene" epoch: Scientific decision or political statement?' (FINNEY & EDWARDS, 2017).

Indeed, the Anthropocene, as an emerging concept in stratigraphy, has attracted much debate and criticism. Most of the criticism requires careful consideration as part of any process of potential formalization. Accordingly, the major criticism received by the concept of Anthropocene are analyzed by Zalasiewicz et al (2017). Once “certain misunderstandings are clarified, we show that none of the criticisms as proffered provides significant geological basis for denying its incorporation into the Geological Time Scale” (ZALASIEWICZ et al, 2017, p.221).

For Léna and Issberner (2018) the use of the term “Anthropocene” best represents the description of a historic period in which human species (*Homo sapiens*) have generated impacts on nature that corresponds to a geological force capable of modifying the planet’s biophysical parameters, which diffuses rapidly, in addition to its original behavior. Until very recently, there was an implicit belief that the physical expansion of the economic system could be unlimited, as if the planet would have conditions and time enough to recover and continue to supply resources. This belief implies a confidence in an economic system that would provide whatever is necessary for a continuous growing production and consumption (MOTTA; ISSBERNER; PRADO, 2018).

Climate scientists overwhelmingly agree that humans are causing recent global warming. An accurate understanding of scientific consensus, and the ability to recognize attempts to undermine it, are important for public climate literacy. Cook et al (2016) present a synthesis of consensus estimates on human-caused global warming, which confirms the need to ‘ecologize’ thought. Our culture and civilization are based on values and worldviews dissociated from the laws of Nature (an anthropocentric view), which results in increasing environmental degradation, waste accumulation, loss of sustainability and species extinction (SACHS, 2008).

Knowledge is a condition for emancipation, and citizens endowed with knowledge will be able to influence political decisions and the society. Thus, the development of cultural, critical and active citizenship also depends on having knowledge about science. When ethical and cultural debates are contemplated and different knowledge is included on the agenda, the conception of the world and citizenship is positively affected (MARKO; PATACA, 2019).

People interact with nature in several ways; our environmental interactions are socially organized and the result of political processes. Dominant approaches in ed-

educational research literature pay scant attention to the political-ecological aspects of producing knowledge about the environment, although recent work has begun to challenge such a-political and a-cultural research paradigms (HENDERSON & ZARGER, 2017).

Currently, the universities are expected to provide tools for understanding environmental issues from a more holistic perspective, rather than relying on traditional approaches to pragmatism and reductionism (FAGNANI & GUIMARAES, 2017, p.117).

The objective of this work was to investigate and analyze the Brazilian Federal Technological Scientific Professional Education Network's (RFEPCT) commitment to relevant environmental issues raised by the Anthropocene. Additionally, the 'information regime' approach was selected to identify factors that may contribute or influence its composition and the information-power relationships. The theoretical approach of the information regime, present explanations for the phenomena that encompass political, institutional, and other actors, in the adoption of new teaching proposals (SERAFIM & FREIRE, 2013).

Information regime constitutes a more or less stable set of formal and informal social communicational networks in which information can be generated, organized and transferred from different producers, through many and diverse means, channels and organizations, to different recipients, whether they are specific users or broad audiences (GONZALEZ DE GOMEZ, 2012). This article proposes an analytical framework to understand how the relationships between actors, mediation processes and informational practices are established in the Federal Technological Scientific Professional Education Network (RFEPCT), contributing to a transition from a consumer to an environmentally friendly culture that preserves biodiversity.

RFEPCT former institutions date back to 1909, when the Nilo Peçanha, Brazil's President at the time, created 19 Apprentices and Craftsmen schools, destined to provide free education to low-income groups, which later gave rise to Professional and Technological Education Federal Centers (Cefets). Currently, RFEPCT, created by Law No. 11,892/2008, is responsible for approximately 82,000 (~ 22%) of active employees linked to the Ministry of Education and accountable for R\$17.6 billion (~US\$ 3,25 billion) in total annual expenses (2019 base year).

Within the scope of Brazilian federal education system, RFEPCT, consists

of the following institutions: (i) Federal Institutes of Education, Science and Technology; (ii) Federal Technological Education Centers; (iii) Technical Schools linked to Federal Universities; (iv) Federal Technological University of Paraná; (v) Pedro II School. Covering the entire national territory, the Federal Network provides a service to the nation, by continuing its mission of qualifying professionals for different sectors of Brazilian economy, conducting research and developing new processes, products and services in collaboration with the productive sector, by its 1,023,303 enrollments (2019 base year) in 653 units throughout national territory.

Even with millions of people without access to essential products and services, and a dignified life, we already consume 50% more than the planet can replace. We need to reduce greenhouse gas emissions by up to 40% so that the planet's temperature does not rise by more than 2°C, a limit indicated by scientists to avoid major climatic catastrophes (IPCC, 2014). However, as Lima (1997, 2011) warns, the “sustainability debate has already been established in an unsustainable society”. From this and other studies (JACOBI, 2003; JACOBI et al., 2016; RODRIGUES; LOUREIRO, 2017), it has become clear that Higher Education Institutions (HEIs) have great potential for disseminating knowledge about social and environmental sustainability while educating students to turn into agents of change.

Information Regime

The understanding of relationships between causes, procedures and consequences requires an understanding of the interrelationship between information and value (SILVA, 2017). These interrelationships are a concept of social construction that permeates the different fields of practices of a causal and consequential nature. Information occurs precisely in the condition of “movement of the senses, contents, forms, forces and interactions of a diachronic or synchronic character that stimulate the subjects to make decisions and act according to their evaluative meanings of a causal and consequential nature” (SILVA, 2017, p. 277).

For González de Gómez (2012), the Information Regime would be the dominant informational mode in a social formation, which defines who the subjects, organizations, rules and informational authorities are. Besides, it would represent

the preferred means and resources of information, standards of excellence and organization, interaction, and distribution models. In addition, another characteristic emphasized by the author is the association with information-power relationships.

Information Regime is constituted by the relationship of its elements (actors, devices, technologies) through information actions related to the production of information policies from different social spaces, whether public or private. In recent years, the IR concept has been developed by several researchers in Information Science (BEZERRA; PINHO, 2016, p.157).

From Bezerra, Capurro and Schneider (2017) interpretation on the Foucauldian perception of 'truth regimes': ordered sets of propositions, institutions and disciplines that organize and control discourses, imposing strategies for maintaining power, through a universal truth policy submitted to normalizing disciplines and sanctions - it is possible to apprehend the meaning that circumscribes the foundations of the Information Regime.

According to Unger and Freire (2008), Information Regime approach presents differences in Frohmann and González de Gómez: while the latter approaches Information Regime from a political point of view, Frohmann focuses on technological artifacts, on the viability of informational transit through physical environment. The present work adopted the political and social perspectives of González de Gómez. Thus, within the scope of an Information Regime, information actions strata are articulated and manifested through three modalities (GONZÁLEZ DE GÓMEZ, 2003, p.36-37):

- a. **mediation** - when information is developed within the scope of another social action, whose actors are seen as functional subjects;
- b. **formative** - when oriented towards finalizing information, whose actors are seen as experimenting subjects;
- c. **relational** - when it seeks to intervene in another action to obtain direction and purpose, expanding its space of achievement, whose actors are articulating social subjects.

According to Caixeta and Rodrigues (2008), an analysis of decision-making process, must take into account the social context and history of its actors and

the understanding of processes by which their social practices are institutionalized. Freire (2018) states that the mechanisms discussed by researchers on organizational culture can be also analyzed from the perspective of the information regime.

Rabello (2018) documents materiality in synergy with social practices. Institutional interpretations reveal not only the need for alternative epistemologies with an interest in fundamental or basic research, but even the possibility of questioning epistemology as a meta discursive or place of public interpretation in knowledge fields. This finds a complementary and strategic alternative in the political component.

The perception of value is eminently related to the appropriation of objective reality, referring to the appropriation of concepts and based on the subjects' beliefs (SILVA, 2017). In this sense, the institutional context in Brazilian higher education forms a distinctive web, a fabric of institutions, organizations, establishments, agents, and practices in which social, economic, political, religious, and other processes hinge on one another simultaneously (SILVA JUNIOR et al, 2018).

Society, in general, has difficulty in obtaining reliable information about environmental protection policies and how they are organized and controlled. Besides, it has been difficult for different societies to understand and measure the impacts of consumer behavior to the planet's biodiversity. These concepts are expected to shed light to the discussions on how to use the presented perspectives for environmental sustainability culture implementation in RFEPECT.

Education in the Anthropocene

The magnitude, variety, and longevity of human-induced changes, including land surface transformation and changing the composition of the atmosphere, has led to the suggestion that we should refer to the present, not as within the Holocene Epoch (as it is currently formally referred to), but instead as within the Anthropocene Epoch. According to Lewis and Maslin (2015), adopting the Anthropocene as the current age may reverse the trend by asserting that humans are not passive observers of Earth's functioning. To a large extent the future of the only place where life is known to exist is being determined by the actions of humans.

Education has been recognized as the key to changing human behavior. Presenting the content in a contextualized way allows a more coherent, comprehensive and, therefore, significant teaching-learning process for students. It favors the conception that science is changeable, unstable, contains transitory hypotheses and reveals transformations in scientific thought, according to the historical, social, cultural and political contexts in which scientists are inserted, in view of the objective of their work (MATTHEWS, 1995). In this sense, considering analyzing this Education approach one should recognize that:

Freire is one of the great thinkers not only for critical environmental dialogue based on the interdisciplinary premise, but also for intercultural dialogue in the light of the reality of exclusion experienced by the peoples of Latin America. Knowledge is the result of a planetary and ecological human interaction: (i) *Planetary* as creation and heritage of all; (ii) *Ecological* as a science of the house destined to rebuild the planet not as a stock exchange, but as the human house where at the table that is set nobody is excluded when serving food (COSTA & LOUREIRO, 2017, p.119).

The relationship between environment and education takes on an increasingly challenging role, demanding “emergence of new knowledge to apprehend increasingly complex social processes and intensifying environmental risks” (JACOBI, 2005, p.247). The challenge is presented to build ‘sustainable development’, which, as a basic premise, should have the following characteristics: (i) economically feasible; (ii) ecologically appropriate; (iii) socially fair; (iv) culturally equitable, respectful and without gender discrimination.

Agamuthu and Hansen (2007) studied higher education and research capacity building experiences gained during the period 1998-2006 by Danish and Malaysian universities. As a result, the authors suggest that the area of solid waste management offers opportunities for much needed capacity building in both theory and practice and that universities should be more actively involved in research, education, and training to make the necessary progress in all countries.

Within and from the University we feel responsible for raising awareness about the interdependence between environmental problems and personal behavior. Fernández et al (2016) demonstrates in an indirect way, using Ecological Footprint as an attitude indicator, that transversal training in sustainability can change the consumption routines of students. On the other hand, Annan-Diab and Molinari

(2017) demonstrated the importance of adopting an interdisciplinary approach to education for sustainable development and deployed how to advance interdisciplinarity, acknowledging different perspectives of sustainability and corporate social responsibility in the context of diversity.

Lo-lacono-Ferreira et al (2017) analyze the suitability of organizational life cycle assessments (O-LCAs) for higher education institutions (HEIs) with special attention to the benefits and particularities of those adopting environmental management systems (EMSs) verified according to Environmental Management and Audit Scheme (EMAS).

Ifbegsan et al (2017) investigate prevalent waste management practices and the disposition of 840 undergraduate students in a Nigerian University. Although the problems (indiscriminate littering, open dumping of waste, weedy and overgrown lawns, proliferation of power generating sets, uncollected refuse sites and defaced walls with postings were the major observed environmental challenges) were widespread, only 40.5 per cent of the students expressed serious concern for the solid waste practices. After some activities and educational interventions, while the students were positively disposed to innovative ways of addressing the challenge of waste management in the university, there were significant differences in students' awareness.

Considering that Education research has acknowledged the value of transformation, which offers an opportunity for researching and rethinking how appropriate and successful educational practices may be, Leal Filho et al (2018) studied from a set of universities, across the seven countries (Brazil, Serbia, Latvia, South Africa, Spain, Syria, UK) aiming to comprehend how sustainable development is being incorporated as part of university programmes. As a result of their work, a whole university approach for embedding sustainability in HEI is recommended.

Vargas et al (2019) provide a critical assessment of the potential of living lab projects initiated in Belgium (Brussels) and Chile (Santiago de Chile) to anchor sustainability firmly both in the functioning of the university and in the interactions with the neighborhood. Their findings indicate that sustainability processes often begin as ad hoc processes which grow and mature over time as a range of different actors join in. However, sustainability in universities is increasingly connected with sustainability in the private sector and with other public actors.

Research on sustainability in higher education institutions (HEIs) is unequally distributed globally. Ulmer and Widra (2020) developed a Delphi study involving 32 experts from 16 African countries and a total of 29 HEIs was conducted between December 2017 and May 2018. The findings of this study provide valuable insights into the current state of sustainability activities and Africanisation of participating African HEIs, and the importance of language and culture in this process.

The analytical framework proposed by Bolmsten and Manuel (2020) contributes to a better understanding of the relationship between education for sustainability and sustainability of education, providing a reflection upon sustainable development processes in building educational capacity using E-Learning technologies.

The United Nations (UN) invests its efforts in the elaboration of the Sustainable Development Goals (SDGs) or Agenda 2030, considering a better integration of the various dimensions of sustainability. Guerra & Schmidt, (2016) emphasize that the SDGs ensure universal applicability that embraces diverse countries and social groups, which makes them more effective than the previous Millennium Goals, thus representing new forms of governance and public involvement.

According to Albareda-Tiana et al (2018) a few contributions to SDGs implementation on the basis of exploring the principles and practices of Education for Sustainable Development (ESD) can be summarized as follows (ALBAREDA-TIANA et al, 2018, p.488-489):

- The University, as an educational institution committed to respect people and to foster and defend human rights, should promote a culture of sustainability, which contributes to integral human development. To make this commitment more robust, it is necessary to incorporate ESD and the SDGs into the curriculum of the University degrees.
- After reviewing the University degree reports, a lack of consistency with the University's Mission was observed. Curriculum modifications and a new ministerial approval of the degree reports are required.
- To implement ESD/SDGs, considerable difficulties related to deficient human values and reductionist conceptual approaches need to be overcome. This is a great challenge for a University that wants to serve society and gives priority to the value of each person and human rights.

- Holistic methodological strategies seem especially suited to train those who will soon be entering the job market. Such strategies relate theory to practice and interrelate different elements of the same system. They clearly show the consequences of decisions made by human communities and therefore of interconnections between different dimensions of sustainability.
- ESD, and more particularly, implementing the SDGs in higher education, can be an opportunity for establishing synergies: synergies between University departments, between degrees and between society and the University.

Establishing a cause and consequence relationship between educational practice and ecological impact is a difficult intellectual task given the complexity of variables at stake. What is usually considered pro-environmental behavior by one group may be considered anti-environmental by others. Environmental education can more fully account for the political nature of education and learning in order to reflect the ways that ecological dynamics are influenced by political ideology and related governance processes (HENDERSON & ZARGER, 2017).

Jacobi and Maia (2016) see social learning as a process in which the involved agents in different contexts and situations need to demarcate the corresponding issues and produce relating contents and capacities to deal with common problems. This also represents a cultural learning, as long as the learning is emphasized as aspect of the shared management of natural resources.

In this dialogical movement, the educational environment is built so that, in scientific field, opportunities are used for new ways of rethinking survival on the planet since ocean waters level rise and other problems related of coastal cities; global warming and cereal crops transformation that will be impossible in the tropics; drinking water scarcity; biodiversity decrease in the oceans due to water temperature increase are increasingly threatening species. Therefore, informational devices and practices combined with informational policy are considered as drivers for a transformation of culture in professional education in the Anthropocene.

For instance, Extension activities (HEI activities/interactions with local community) can, in fact, contribute to the integral training of students as critical and

responsible citizens. In this way, a Federal Institution of Higher Education (IFES) is only complete when it enables and offers conditions so that teaching, research and extension activities are contemplated and are fully practiced (SARAIVA & ANJOS, 2020). For example, Brandy et al (2019) presented how the promotion of ecological fairs on a Southern Brazilian university campus plays an important role in the implementation and practice of sustainability.

Current approaches to sustainability science and education focus on the external world of ecosystems, wider socio-economic structures, technology and governance dynamics. A major shortcoming of such approaches is the neglect of inner dimensions and capacities (which constrains education for sustainability as an end), and a limited capacity to facilitate reflection on the cognitive and socio-emotional processes underpinning people's learning, everyday life choices and decision-taking (which constrains education for sustainability as a means). Wamsler (2020) shows that inner dimensions and transformation can be a vehicle for critical, improved education for sustainability and how this can be achieved in practice. Henceforth, more integral approaches and pedagogies are urgently needed.

This article intends not to seek the answers, but to problematize the question of how HEIs deal with the Anthropocene. For this, it is intended here not only to carry out an analysis of scenarios based on historical studies, but also to identify actors and their informational mediation process, in order to analyze scenarios bringing contributions to a paradigm shift in HEI management at facing Anthropocene issues.

BRAZILIAN FEDERAL NETWORK OF PROFESSIONAL, SCIENTIFIC AND TECHNOLOGICAL EDUCATION

The organization of professional education in Brazil, during its consolidation, acquired a contradictory dynamic represented, on the one hand, by the propositions that defend young people and adults training for immediate insertion in the labor market and, on the other hand, by guidelines that seek to guarantee citizen integral formation.

The implementation of Brazilian Federal Institutes is related to the set of policies aimed at professional and technological education. The underpinning belief was that citizen training precedes qualification for work and is based on the commitment to ensure that trained professionals are able to keep up with development.

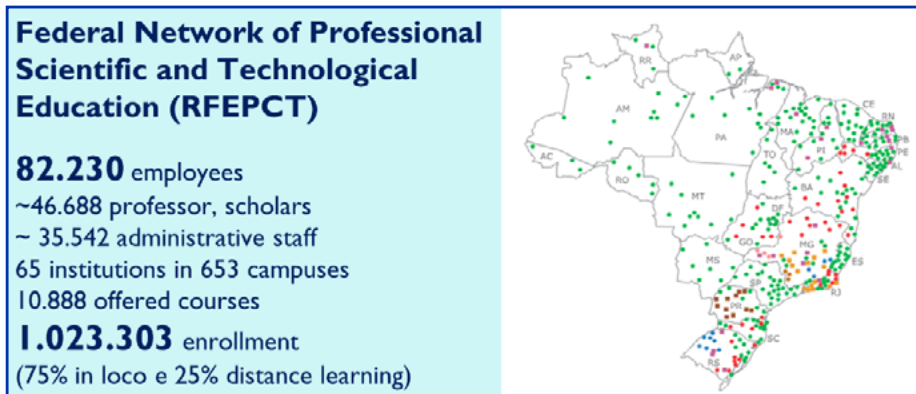
In this educational project, the contribution to local and regional socioeconomic progress is essential, and, for this, an effective dialogue with other sectoral policies is necessary.

Therefore, in the same way that the concept of professional education was consolidated in the Law of Guidelines and Basis, the process of integration of schools in the federal network is consolidated through Law No. 11,892/2008, establishing the Federal Network for Professional Scientific and Technological Education and created the Federal Institutes of Education, Science and Technology. From its institution, a reflection is opened about the expression 'Federal Education System' that originates in the Federal Constitution of 1988, in which it is stated that 'the Union, the states and the municipalities will organize in collaboration with their systems education'.

According to Brazilian Law 11,892/2008, the Federal Network of Professional Scientific and Technological Education (RFEPCT) is constituted by the Federal Institutes of Education, Science and Technology (IFs), by the Federal Technological University of Paraná (UTFPR), by the Federal Center of Technological Education Celso Suckow da Fonseca (CEFET-RJ), Federal Center of Technological Education of Minas Gerais (CEFET-MG) and by the technical schools linked to Federal Universities.

RFEPCT has approximately 82,000 employees (almost 47,000 teachers and more than 35,000 administrative staff); 65 institutions, 10,888 courses, 1,023,303 students' enrollments, approximately 25% distance learning education (PNP, 2019). There are currently 38 Federal Institutes present in all states offering qualification courses, integrated high school, higher technology courses and degrees (Figure 1).

Figure 1 Federal Technological Scientific Professional Education Network's briefing.



Source: Own elaboration based on PNP (2019).

Thus, the Institutes are a unique arrangement in the Brazilian educational organization, which assume the function of offering, in a single institution, from initial and continuing education to technological and postgraduate courses, *lato* and *stricto sensu*, through technical education, which may be offered in full or concurrent with high school.

Methodology

The bibliographic and documentary research that gave rise to the previous sessions of this work, provided key elements for the survey elaboration with an interest group and data related to: (i) environmental management in the HEI; (ii) institutional documents; (iii) academic production by RFEPCT researchers; (iv) institutional projects that reflect the image of the HEI.

A literature review was carried out considering the following themes: Anthropocene, 'Education for Ecologization' and Information Regime, in order to support the HEI commitment to the environmental issue's empirical research. By documentary research and survey, it becomes the basis for further discussion. One of the assumptions adopted from Information Science perspective, considers that 'thinking

about document institutionality’ implies reflecting on the attribution of value whose authority is recognized by others (RABELLO, 2018).

This study is also configured as a descriptive character because it fulfills the stages of analysis, observation, registration and correlation of aspects, involving phenomena without manipulating them. It is when someone analyzes, observes, registers and correlates aspects that involve human or natural facts and/or phenomena, in order to “seeking to discover, with the possible precision, the frequency with which a phenomenon occurs, its relationship and connection with others, its nature and characteristics” (GLEERUP; HULGAARD; TEASDALE, 2020, p. 55).

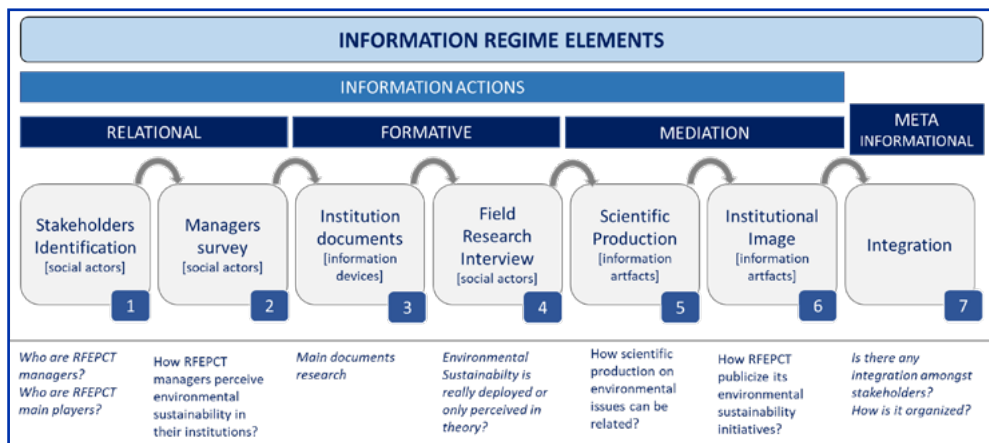
According to a structure based on Freire (2018) for Information Regime elements classification, categorized as ‘information actions’ (relational, mediation, formative) and ‘meta-informational’, from the stages of development of this research (Figure 2):

I) **Information actions:**

- a. Relational: (1) identification of the actors; (2) competence of managers;
- b. Mediation: (5) institutional image; (6) study of the RFEPC and reports;
- c. Formative: (3) scientific production; (4) institutional documents;

II) **Meta-informational:** (7) integration.

Figure 2 Anformation Regime Perspective Data Analysis



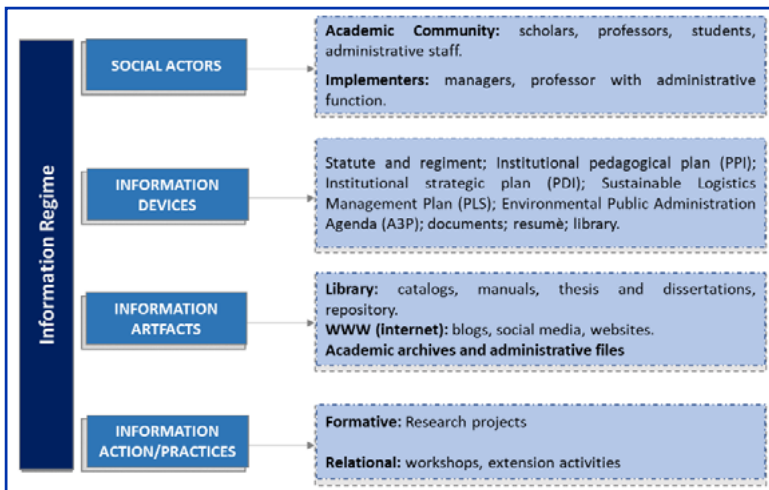
Source: Own elaboration.

Considering the informational universe among RFEPCT leaders, which is not well known by the community, the most adequate methodological choices for the study were (LUNA, 2007): (i) descriptive approach; (ii) qualitative research paradigm by symbolic interactionism; (iii) applied study, since it seeks to generate knowledge - through the understanding of interactions among social actors, inserted in RFEPCT Information System related to greening education - practical application, directed to problems specific; (iv) exploratory; (v) regarding the procedures: bibliographic, documentary research, survey (seeking information directly with an interest group), as well as reports of experience with a specific RFEPCT group.

From this perspective, six drivers were considered as the category of analysis: (i) *actors and information environment*; (ii) *informational devices and artifacts* [sources of information]; (iii) *informational practices/actions* [information mediation process]; (iv) *information usage behavior*; (v) *priorities assigned by HEI decision makers*; (vi) *changes resulting from decisions made*.

Considering the Information Regime context in which RFEPCT members are inserted, an attempt was made to identify the main elements of this structure (Figure 3) that represent: (i) social actors; (ii) information devices; (iii) information artifacts; (iv) institutional information actions /practices.

Figure 3 Information Regime elements.



Source: Own elaboration.

Based on this Information Regime scenario, some of the proposed questions to be answered throughout this work include:

- *What roles do the actors play and their interaction in the informational environment for sustainability in HEIs?* The objective of this question is to identify the main actors in the configuration of the Information Regime and in what ways interactions can be established in the informational environment for sustainability in education.
- *What informational devices does the RFEPCT academic community use?* The objective is to identify the types of informational devices that are used by the community in academic praxis.
- *What sustainability principles are used in your internal practices?* The objective is to identify which sustainability principles the HEI uses in its daily life and how they are reflected in its internal practices.
- *What issues are identified as relevant in the adoption of internal sustainability practices?* The objective is to identify what IES actually considers as its sustainability guidelines for the implementation of its internal practices.
- *What are the main ecological issues valued by the leaders of the HEIs?* The objective is to identify what is considered by managers (decision makers) in relation to ecological issues, in order to observe the direction of investment and support for the development of actions for environmental sustainability.
- *Which IES actions have practical effects on the issue of sustainability?* The objective is to identify how the HEI contributes to society and interacts with the local community through initiatives focused on ecological issues.

Furthermore, a procedure was established for data collection and analysis (carried out between July 2018 and February 2019), divided into seven stages, representing a specific combination of data collection (Figure 2):

- 1) *Identification of the actors:* It seeks to identify the main actors involved in the social networks and relationships that represent the configuration of the Information Regime in Education for the Anthropocene in the RFEPCT through

documentary analysis and informal conversations with the members of the RFEPCT. In addition, it seeks to analyze the best employee profiles for selection and contribution in the later stages of this research;

- 2) *Competencies of managers*: Among the actors observed in the previous step, the profile of manager was selected. First, the profile of top managers was analyzed. Then, the answers to the Questionnaire on Institutional Environmental Management are presented online, with the main purpose of collecting basic data about the main documents and activities related to environmental management. To the managers who did not respond voluntarily to the questionnaire within the proposed time, a summary version was also sent (with no questions about Agenda 2030 and related ones) just to verify the existence of a specific agency or position to send the questionnaire online through the platform -SIC (Citizen Information Service) based on LAI (Law on Access to Information);
- 3) *Institutional documents*: Collection of the main institutional documents (statutes, general regulations, institutional development plan) to identify how the sustainability concept (with an environmental focus) or related terms, were represented and their meanings within the context of the HEI;
- 4) *Study of RFEPCT and Reports*: Divided into three parts: (i) Response to requests via the e-SIC (Citizen Information Service) platform based on the LAI (Law on Access to Information) on Education and Extension; (ii) Selection of a group of 40 managers using as criteria - different stages of maturity, regional representativeness, management experience - to make reports based on their perception, as a public servant, of the behavior of the internal and external community, within the context of the environmental management proposed in the institution; (iii) RFEPCT's contributions to environmental sustainability;
- 5) *Scientific production*: In order to carry out a triangulation with the data previously collected, we sought to analyze the Scientific Production of the RFEPCT: (i) Analyze the Research Groups focused on environmental sustainability; (ii) identify in an academic research platform in a search tool open to the general public (Google Scholar), considering among the first 100 results, the elements related to the institution's scientific production (or about it), referring to environmental sustainability (or related themes), in order to verify

what is actually being produced (made available to society) as a contribution to education for greening.

- 6) *Institutional image*: In order to relate scientific production to institutional environmental management, we sought, through the institutional image, to observe how the institution used its means of communication and interaction with society. Thus, two main sources were observed: (i) dissemination of inter-relational news on RFEPCT through Conif's digital platform; (ii) search for reports or videos published on YouTube about activities carried out by RFEPCT member institutions with society or their contributions through scientific research;
- 7) *Integration*: The objective of integrating the data obtained is to analyze them from the informational perspective inserted in the Information Regime and in this sense: (i) elaborate a strategic analysis, observing the weaknesses and strengths, opportunities and threats (ii) aggregate elements obtained in a structure that represents the main elements included in the Information Regime; (iii) to elaborate a proposal so that the RFEPCT is able to implement an environmental agenda in line with the Education process in the Anthropocene.

Therefore, based on data consolidation and their association with informational elements, it will be possible to consolidate the results for an Environmental Agenda proposal based on Education in the Anthropocene for RFEPCT.

Results

Among international, national, regional and local organizations, linked to governmental, non-governmental bodies, research institutes and research centers or development institutions, more than one hundred institutions were identified as relevant and possible actors (stakeholders) as influences for an Environmental Agenda establishment in RFEPCT.

How would these actors be related to the RFEPCT Environmental Agenda? How would these relationships be established and in which areas could each organism be linked to the development of the activities of this network? For a specific

presentation, by segmentation of the end areas: Teaching, Research and Extension, some national actors were selected.

In the area of Education, official government agencies linked to the Ministry of Education and related international non-governmental organizations (ie UNICEF, UNESCO) will be considered, for the Research perspective, institutions such as IBICT, EMBRAPII, EMBRAPA, REDEFITO (FIOCRUZ), were selected for their national relevance. While with a greater focus on direct contact with society, and therefore, from the perspective of the Extension, a government agency (ICM Bio - Instituto Chico Mendes, MMA) and a non-government organization (Rede ODS Brasil) were selected as examples.

Although they were not considered directly in this research, it was observed the possible connections that these examples could have in the integration and interaction of a network that represents the Information Regime for the elaboration of an Environmental Agenda for RFEPECT. The integration of these institutions makes it possible to observe Information Regime characteristics in which RFEPECT is inserted to consolidate its goals for implementing a shared Environmental Agenda, as shown in Figure 4.

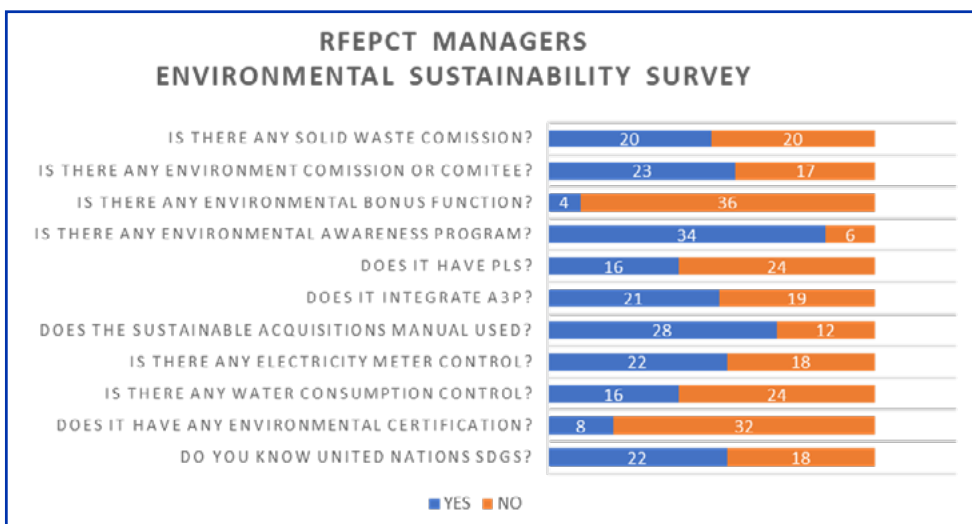
Figure 4 Information Regime Stakeholders to RFEPECT Environmental Agenda.



Source: Own elaboration.

Another result obtained by SurveyMonkey (SM) tool was sent to Institutional Development HEI managers - FDI members (Conif Institutional Development Forum): 35 out of 40 respondents (87.5%), considering 30 complete forms and 5 incomplete forms. The questions were based on legal environmental specifications, which are based on the holistic conception of information materiality based on: Institutionality, Information Regime, Informational Practices, Information Validation, Study of the documentary form, Bureaucracy, Information Materiality (Chart 1).

Chart 1 RFEPCT Managers Survey on Environmental Management.



Fonte: Elaboração própria.

From these institutional archives, the following documents were collected and analyzed: statute, general regulations and institutional development plan (current or more recent). A search tool was used to identify the terms “sustainability”, “environmental” and “environment” withing this documentation.

RFEPCT MANAGERS BEST PRACTICES REPORT

Waste management in higher education institutions is generally a complex and multidisciplinary activity, which demands experienced managers (FAGNANI & GUIMARÃES, 2017).

Federal Institute of Professional Scientific and Technological Education of Acre (IFAC)

- Implementation of Biodigestors on campuses;
- Planning of Rainwater Recovery actions;
- Solar Energy System Project for its largest campus.

Federal Institute of Professional Scientific and Technological Education of Amazonas (IFAM)

- Approval and implementation of its Environmental Policy in 2017;
- Approval and implementation of its PLS in 2018
- Energy Efficiency and Renewable Energy Policy (under implementation);
- Solidary Selective Waste Collection;
- Correct disposal of Technological Waste;
- Participation in A3P agenda, Sustainable Esplanade Program.

Federal Institute of Professional Scientific and Technological Education of Goiás (IFG)

- Agroecology on Cidade de Goiás campus

Federal Institute of Professional Scientific and Technological Education of Minas Gerais South (IFSULDEMINAS)

- Conservative Plan of Mantiqueira (PCM) Partnership whose main objective is to promote forest restoration of native species, in approximately 1,200,000 hectares in Serra da Mantiqueira (perpassing more than 280 municipalities in the States of Minas Gerais, São Paulo and Rio de Janeiro), based on Extrema city knowledge (Conservador das Águas Project, the first Brazilian experience of forest restoration project using PES Payment for Environmental Services), as well as support for Atlantic Forest Municipal Plan (PMMA) implementation. The specific objectives of this plan are to:
 - i. Formation of an ecological corridor in Serra da Mantiqueira coverage area and influence.
 - ii. Improve environmental services production capacity, such as water, soil conservation, biodiversity, carbon sequestration, and landscape maintenance.

- iii. Promote a municipal and regional plan for the Atlantic Forest with participation of many stakeholders and support from the SOS Mata Atlântica Foundation.
- iv. To improve municipalities resilience capacity to face damage caused by climate change.
- v. Strengthen environmental governance in municipalities

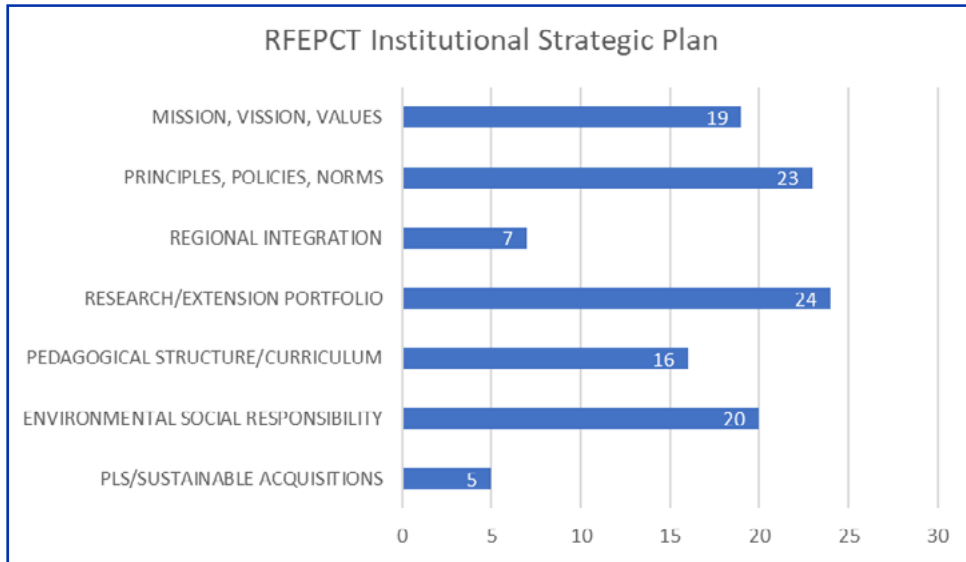
Federal Center for Technological Education Celso Suckow da Fonseca (CEFET/RJ)

- ‘Recicla Cefet’ Institutional Program for Solidary Selective Collection: collection of oil, recyclable and electronic waste - in addition to those common as cardboard, paper, plastic, metal and glass, donated to the cooperative;
- ‘Mutirão project’ of electronic waste: Batteries collection, treatment and proper destination;
- Chemical Waste Survey Project at CEFET/RJ;
- *Extension project*: Joint task force at CEFET/RJ (collection and recycling of used writing instruments);
- *Extension project*: Ecological roof in order to provide thermal comfort;
- *Extension project*: Environmental Sustainability Panel - Website creation to publicize the activities and projects developed;
- Sala Verde Project (MMA – Brazilian Ministry of Environment support) - creation of an integrating environment based on socio-environmental development activities;
- Conscious Water Consumption Project - Monitoring water consumption in bathrooms in order to identify waste or leakage;
- Conscious Energy Consumption Project - Monitoring of lights on and connected air conditioning equipment in the absence of students in block L;
- Beach Cleaning Task Force for the Collection of Recyclables (plastics, metals, etc.) linked to the “Less Plastic is More” Project;

The greatest variation in how to represent institutional perceptions about environmental sustainability was identified in documents representing the Institutional

Development Plan (PDI), in which all institutions made at least one mention of the theme (Chart 2).

Chart 2 RFEPCT PDI ‘environmental sustainability’ quotation.



Source: Own elaboration.

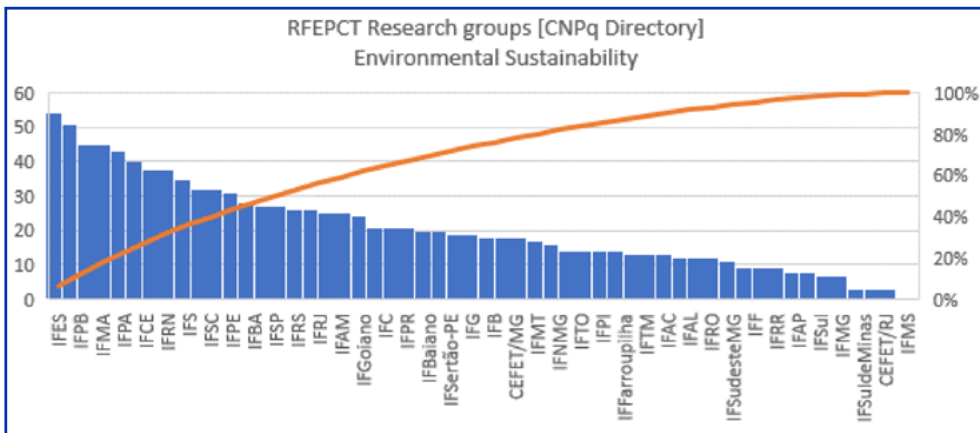
In consideration of RFEPCT members’ Statute, only CEFET/MG made no mention of the terms ‘sustainability’, ‘environmental’ or ‘environment’. While CEFET/RJ mentioned only the term ‘compliance with environmental legislation’. The remaining 38 federal institutes, mostly follow a similar model of statute, considering the concept of ‘environmental sustainability’ in their institutional mission. Regarding General Regulations documents, only 22 out of 40 have an indication of the terms: ‘socio-environmental responsibility’, ‘environmental legislation’, ‘environmental preservation’, ‘environmental sustainability’, ‘green marketing’, ‘sustainability actions’.

From the research in CNPq Directory, the ten institutions that most have Research Groups (IFES; IFPB; IFMA; IFPA; IFCE; IFRN; IFS; IFSC; IFPE; IFBA) were identified. However, it was observed that these institutions would not necessarily be the most productive (IFES, IFG, IFPB, IFCE, IFRS, IFMA, IFPE, IFPA, IFSP, IFSC)

in RFEPECT members, from selected thematic area (*environmental sustainability*), applying the same to HEIs with CNPq Productivity fellows.

During January 2019, CNPq Research Groups Directory was consulted, using as search criteria the following terms: ‘environmental sustainability’, ‘environment’, ‘natural resources’, ‘ecology’, ‘sustainable development’, for RFEPECT member institutions: total of 830 groups, stratified according to Chart 3.

Chart 3 CNPq Research Directory – RFEPECT on Environmental Sustainability.



Source: Own elaboration.

This can be explained by the fact that many research groups created by federal institutes are linked to Brazilian or international universities, with production geared to their leaders oversees or in other locations nationwide. In addition, news collected on Conif website on Environmental Sustainability theme published from February 17,2017 to June 2,2019 were analyzed. As a result, 68 out of 918 news published in this period, were dedicated exclusively to environmental sustainability.

Discussions

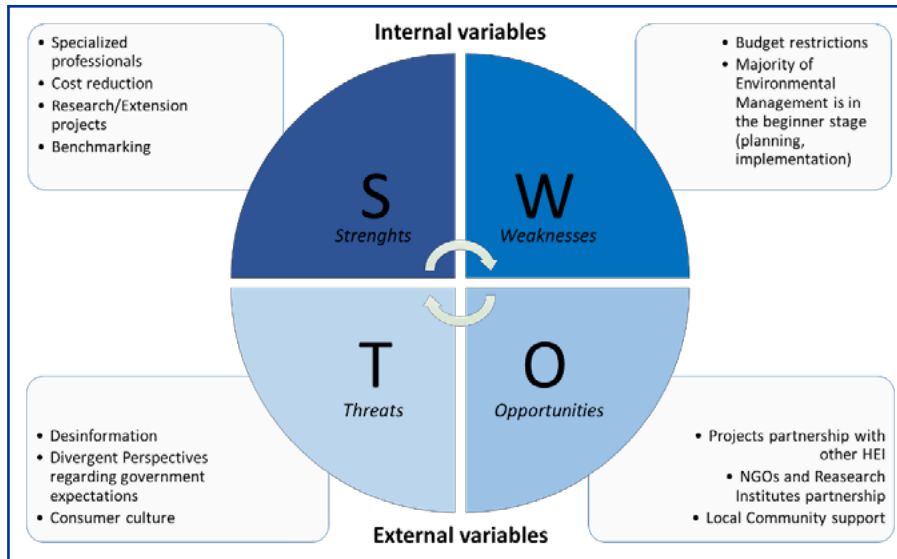
Questioning economic growth implies questioning capitalism. The current global crisis raises different responses in individuals, groups and governments, ranging from denial, incomprehension and indifference, to a yearning for engagement and activism. At first glance, it seems impossible to build ‘sustainable development’ without greening education.

Considering the Bourdieusian expression “cultural capital” in the perspective of power and domination, and the social space based on the relationships that occur between such positions – the theoretical approach of the Information Regime presents potential explanations for the phenomena. These involve distinct political and institutional actors, among others, who interact in a more or less stable set of formal and informal socio-communicational networks. Information can be generated, organized and transferred from different producers in these networks through several means, channels and organizations whether these are specific users or broad audiences.

Nevertheless, both the ecological normativity of economic rationality and the transition to an eminently environmental rationality imply the confrontation of axiological systems in power relations, and conflicts of interests rooted in institutions, knowledge paradigms, as well as in legitimation processes facing different social actors. We are no longer exclusively ruled by a mechanical-industrial principle of production organization, but also by an informational, flexible principle, with profound effects on human subjectivity.

While in the theoretical aspects of organizational culture, it is observed that ‘habits reside in the deepest layer’, in this case, HEI culture is characterized as underlying basic presuppositions. That is, habits deeply rooted in the minds of individuals and in group culture are simply accepted, no matter how appropriate or inadequate for society. Therefore, the observation of institutional culture behavior in the context of the Information Regime becomes an important vector for the promotion of environmental awareness (Figure 5).

Figure 5 Information Regime SWOT Analysis.



Source: Own elaboration.

From the analyzes on each Information System element on RFEPCT sustainability (SWOT analysis, Figure 5), compared to the literature, it is possible to consider that:

- I. **Actors and Informational Environment:** RFEPCT members have partnerships with several institutions, government agencies, NGOs and even with the surrounding community, generating a valuable network of relationships. However, RFEPCT still needs to strengthen partnership ties compared to universities. A positive aspect is its greater proximity to society (local community).
- II. **Informational Devices and Artifacts:** One of the main devices surveyed was digital platforms (institutional website) that still need to be standardized and adjusted by IT teams - some still do not meet e-Gov standards, Open Data Plan and other 'Access to Information Law' tools. As for the artifacts, a search was carried out in the main institutional documents. The terms and concepts related to environmental sustainability in HEIs - with some exceptions - still present themselves as 'formal compliance' with legislation or linking the institutional image, without necessarily representing concrete actions.

- III. **Informational Practices and Actions:** They were obtained through informal conversations, interviews, non-invasive analyzes (carried out during field research) and digital media (YouTube), in some cases produced by academic community and works of local digital media, television or traditional press. Representing informational dynamics elements in a given context - that implicitly or explicitly - shape the institutional informational game rules.
- IV. **There are some professionals and specialists with initiatives that could be replicated,** but in general, isolated activities observed both at institutional level and within RFEPCT itself. Information about the carry out activities most of the time is not formalized or is restricted to an area or department.
- VI. **Information use behavior:** Scientific productions (congresses, conferences and journals) selected from Lattes curriculum of Research Groups leaders linked to CNPq Directory, it was possible to observe that productions are random to institutional guidelines, being much more linked to external research groups and partnerships (especially international). There is a great variety in content provision and scientific dissemination about environmental sustainability in institutional communications and digital platforms. This behavior is also observed in scientific productions and publications in journals.
- VII. **Priorities assigned by decision makers in HEI:** The priority assigned by managers is much more related to budgetary and legal restrictions (as well as the attention given to energy efficiency projects). There is still no formal evidence on environmental sustainability influence on the initiatives and decision-making of most RFEPCT managers.
- VIII. **Changes resulting from the decisions taken:** From the analysis of the previous topics, it was possible to elaborate a proposal in order to enhance RFEPCT informational potential, using its capillarity associated to local, regional and national range - by its social networks, its 'strong ties' and 'weak ties' through an integrated digital platform. Thus, together with other initiatives, it would become an important articulator in the Information Regime for RFPECT Environmental Education Agenda.

When analyzing the concept of 'regimes of truth' – ordered sets of propositions, institutions and disciplines that organize and control discourses, imposing

strategies to maintain power, through a universal policy of truth subjected to normalizing disciplines and sanctions – it is possible to apprehend the conditions of the Information Regime.

The relationship between environment and education for citizenship assumes an increasingly challenging role, demanding the emergence of new knowledge to apprehend social processes that are becoming more complex in addition to the environmental risks that are aggravated every day. From this, an educational process emerges. This process is capable of taking a political stance and of discerning through criticism of the various socio-environmental projects disputing the same field of environmental sustainability and its respective social and political pedagogical objectives.

Regarding the negative aspects observed in RFEPCT internal environment, within Information Regime, the following stand out: (i) Budget restrictions; (ii) Majority of Environmental Management in the RFEPCT HEIs in the planning, initial or implementation stage.

On the other hand, elements that can be considered as positive perspectives collaborate continuously on RFEPCT performance in its Information Regime were also identified, externally to RFEPCT member institutions: (i) Integration of Projects with other HEIs; (ii) Partnerships with Research Centers and NGOs; (iii) Support and participation by society. Each of these elements used as an analysis category was organized in a structure that represents the minimum unit of informational representation of HEI within the Information Regime, as elaborated in the scheme of Figure 6.

Figure 6 Information Elements in HEI Informational Regime.

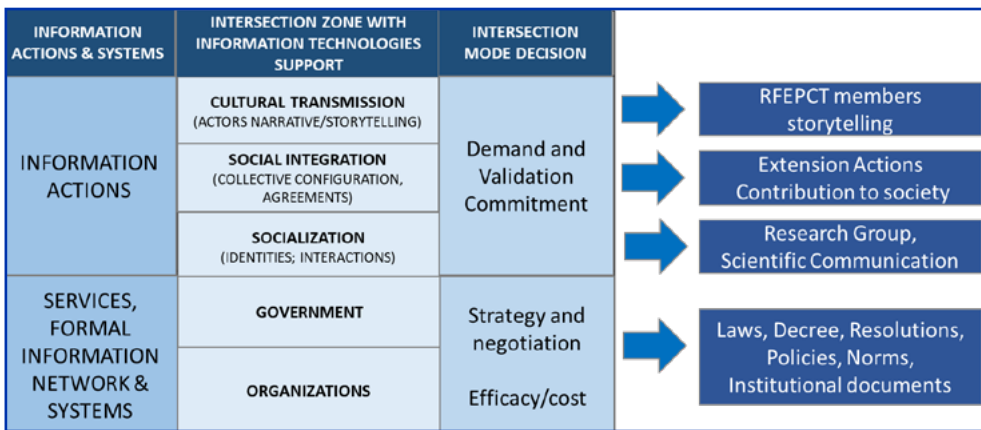
INSTITUCIONALITY
Situation or formal space where objetivation of values or attributes occurred
Rede Federal de Educação Profissional Científica e Tecnológica (RFEPCT)
MATERIAL CULTURE
Testimonials regarding man intervention in the environment under diferente social and cultural contexts
RFEPCT members report/storytelling
INFORMATION REGIME
Dominant mode in which defines information production in a given place, time and the related
2030 Agenda, social political & economical scenario
INFORMATIONAL ACTION
Operations modes in Information Regime
Education initiatives such as Teaching, Research, Extension (News, projects, publications)
INFORMATION VALIDATION
Creation or value appropriation in order to transform na object (data) into document (information)
Managers answers (budget approvers, decision making)
DOCUMENTAL SHAPE STUDY
Documentary contente which presente itself as a solution to a given Issue
Actors organization (informal and formal) structure and process
HISTORIOGRAPHY
History registration perspective over implemented actions
Archives analysis. History registration (documents)
BUROCRACY
Governmental means to act under the Law
Legal requirements, governance, transparency, effectiveness criteria
INFORMATION MATERIALITY
Material expression which allows to connect information to its social and public nature
Institutional documents (estatute, regiment, PLS, A3P, etc)
COLLECTION DEVELOPMENT
Selection procedure in documental and informative institutions
Information Repository simulation: Education in the Anthropocene website
KNOWLEDGE ORGANIZATION
Field investigation in Information Science organizing and supporting knowledge
Environmental Agenda in HEI

Source: Own elaboration.

Using Information Regime elements: (i) Information actions (ii) Services, systems and formal information networks adapted from Gonzalez de Gomez (2012), actions and information used throughout this research were associated, as shows in Figure 7.

However, there are also obstacles, issues arising from external environment that negatively affect activities developed by RFEPCT related to the promotion of a greening teaching culture: (i) *Disinformation*; (ii) *Divergent perspectives in the environmental area, taking into account the current government*; (iii) *Capitalist and consumerist culture*.

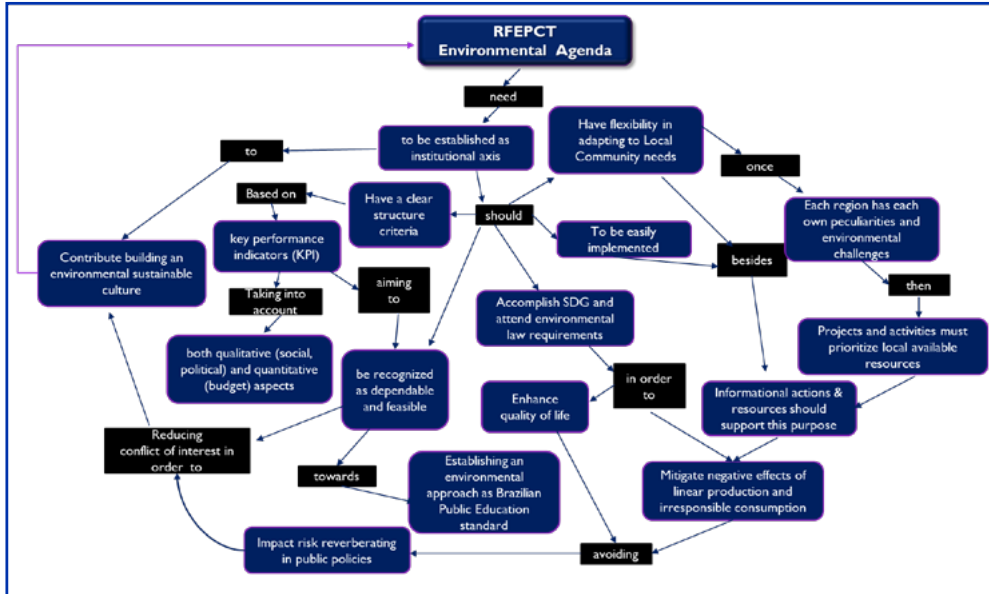
Figure 7 SRFEPC Information System and Actions.



Source: Own elaboration.

The combination of each of these elements favored a set of initiatives that can be considered in HEI integration based on greening education. In this sense, from data collection and analysis of the results obtained in the research on Information Regime and environmental sustainability in the RFEPCT and from the aforementioned premises, relevant elements were identified - both in its internal and external environment - for the construction of an Environmental Agenda (Figure 8).

Figure 8 RFEPECT Environmental Agenda.



Source: Own elaboration.

Building a proposal for an Environmental Agenda is not a trivial task, not only because of the complexities of its interactions in the Information Regime, but also because of the peculiarities which characterize HEIs.

Considering the Information Regime in which RFEPECT is inserted, the first step must be to establish the environmental sustainability management of each member institution as an institutional guideline. This would ensure each institution can lead their respective Environmental Agenda transformation, taking into account the following criteria (MARUYAMA, 2019): (i) Flexibility to adapt serving its Local Community; (ii) Respecting each region peculiarities, potentials and challenges regarding the environmental issue, so institutional activities and projects must prioritize resources available in the region; (iii) Be easy to implement, in the same way that informational actions and resources must support this purpose; (iv) Comply with the Sustainable Development Goals (SDGs) and environmental laws; (v) Clear structure criteria, using specific metrics for performance analysis (key performance indicators – KPIs), with both qualitative (i.e., political, social) and quantitative aspects (i.e., bud-

get); (vi) Compliance to the United Nations Sustainable Development Goals (SDGs) and environmental legislation, aiming to mitigate harmful effects of linear production and irresponsible consumption; (vii) Improving the quality of life; (viii) Avoiding the risk of impact for retroaction public policies in order to reduce conflict of interest; (ix) Environmental Sustainability establishment as an institutional guideline contributing to an environmentally sustainable culture.

Another contribution to the Federal Network of Professional Scientific and Technological Education, Education in the Anthropocene is the website organized as RFEPECT repository available at <<https://antropocenorfepct.wixsite.com/ppgci>> as shown in Figure 9.

Figure 9 Education in the Anthropocene website.



Source: Own elaboration.

One of the main functions of the State is to provide institutional spaces for dialogue and legitimacy with citizens and sectors of society, as a fundamental condition for the proper functioning of Public Administration in modern democratic regimes. The idea of using it as a pilot project aims to integrate a set of institutional initiatives, based on documents, practices, news and informational actions, which were consolidated in the construction of a digital platform (designed and implemented by the author herself between February and March 2019), consolidating the main data sources used throughout the development of this study and organized electronically.

In addition, a recommendation for pedagogical practice arising from this research is that the STS (Science-Technology-Society) approach should be used in Education for Ecologization. This recommendation can be applied in four areas: (i) *Practical/experiential activity*: training focused on community awareness of environmental impacts through practical exercises, dynamics and case discussions; (ii) *Experience Report*: developed through practical activities (voluntary work, internships, scientific initiation projects, extension); (iii) *Applicability of Concepts*: observation of the characteristics of concepts and analyzed similarities between the theory and its practical use in everyday life, understanding the challenges and opportunities to innovate; (iv) *Attitudes and Actions*: implementation of a new vision for greening, which represents reflecting on what we can do about it (energy efficiency, consciously acquiring environmentally sustainable products, responsibility to choose governors/directors concerned with acting in favor of the preservation of the environment and natural resources).

Therefore, the implementation of an 'environmentally sustainable culture' through an Environmental Agenda (MARUYAMA, 2019), provides a greater awareness about the interference of human beings in the environment, recognizing the importance in the elaboration of public policies, regulations and sanctions for its governance, considering the aspects of the Information Regime of which it is an integral part.

Final Considerations

A society based on an endless economic growth is not desirable, neither sustainable, nor viable. Besides, the world population is already consuming more than the planet can offer us after taking billions of years to develop its nature. This has led to the emergence of an environmental ethics which proposes a reevaluation of the human being perspective.

As a public policy regarding the educational, scientific and academic fields, this context requires commitment to the search for technical and political-economic solutions that meet the material and symbolic needs which structure contemporary society, without ignoring existing conflicts of interest and its contradictions.

The inclusion of the ecological issue in public education for citizenship assumes an increasingly essential role, requiring the emergence of new methods to apprehend social processes that are becoming more complex every day. At this point, there needs to be an educational process capable of taking a political stand and carrying out a critical analysis of the various socio-environmental projects that dispute social and political-pedagogical objectives.

In order to observe informational practices, analyzing the information mediation process in public HEIs, we identify their main informational devices, elements of institutionality, information validation, material culture, study of the documentary form and informational actions.

For the most part, actors in the informational environment still work informally in HEIs. Although there are institutions that already present institutional documents that comply with the legislation, the way in which environmental governance is organized in HEIs is still incipient in most cases or restricted to the service required by the Internal Control bodies of the Public Administration.

The actions of RFEPCT members are carried out in isolation by their own areas (teaching, research, extension, and management) disregarding the enormous potential for collaboration and mutual enhancement. There is a lack of an internal policy that favours the aggregation and integration of information and the sharing of experiences by means of social networks or other resources capable of articulating the common objectives more effectively and of creating synergy among the members of the HEI. The lack of this more integrated perspective becomes evident in light of the response obtained in the survey which indicated that managerial priority was mostly motivated by economic issues (budget restrictions, savings through studies focused on energy efficiency) or by regulatory requirements of the Public Administration.

One of the limitations observed throughout the research is related to the fact that, although the theme 'ecology' is offered in the curriculum of some HEIs, it is not possible to assess: (i) the nature of its content, (ii) the frequency with which it is offered, and (iii) how many students attend the programs. That is, the offer of subjects linked to ecology does not guarantee that students are, in fact, receiving informational competence in the topic and that they are mainly linked to critical ecological issues included in the Information Regime.

Possible fragilities of this proposal lies in: (i) the profile inherent to the actions carried out in the Public Administration – such as, for example, Management policies vs. State policies – which can affect the dissemination and even the maintenance of programs; (ii) the disarticulation of internal communication amongst RFEPCT member institutions; (iii) the conflict of interest in decision-making by managers themselves in prioritizing other institutional projects that are detrimental of environmental issues.

From this perspective, some future avenues for continuing this research are related to: (i) deepening the investigation of the relationship between actors included in the Education Information Regime; (ii) analyzing the curriculum and bibliographic base of related courses to compare their institutional practices; (iii) seeking international correlated experiences for a comparative analysis. There is still a long way to go within environmental management in HEIs: in the case of RFEPCT, although there are educational initiatives aimed at environmental concern, its practice related to investments made to promote a greening agenda is still incipient in most institutions.

Finally, this research presents a contribution to the debate on sustainability in HEIs by presenting an original and innovative Mapping on RFEPCT Information Regime elements associated with Education for Ecologization. The research does not intend to be exhaustive on the subject, but it can indeed make a significant contribution to the development of a broad Ecological Agenda for HEIs. Furthermore, it is hoped that this will be a decisive step in promoting interaction among the various HEI instances with the aim of building an institutional culture committed to environmental sustainability in a socially just and transparent manner.

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