

## Greening higher education institutions: a polyphonic analysis of academic production in environmental education

*Ambientalização nas instituições de ensino superior: uma análise polifônica da produção acadêmica em educação ambiental*

*Ambientalización en las instituciones de educación superior: un análisis polifónico de la producción académica en educación ambiental*

Dayane Santos Silva<sup>I</sup>

Rosa Maria Feiteiro Cavalari<sup>II</sup>

### ABSTRACT

Over the last few decades, the production and dissemination of studies that discuss the theme of greening higher education in the field of environmental education (EE) research has intensified. This study aimed to understand the different perspectives that structure the discourses about greening higher education mobilized by the authors of a thesis and a dissertation in EE that problematize this theme, defended in the period from 1981 to 2018. A state-of-art research study was carried out with an analytical-comprehensive perspective of a thesis and a dissertation in EE. For the analysis, we made approximations with notions of the polyphonic theory of enunciation. With the analysis, we observed the need to transform knowledge and the approach to environmental issues based on interdisciplinary perspectives, as well as to promote and implement practices for the insertion of environmental issues that may involve the university community and be present in the central axis of the curriculum of the courses.

**Keywords:** Greening Higher Education. Theses and Dissertations in Environmental Education. State-of-the-Art. Polyphonic Theory of Enunciation.

### RESUMO

Ao longo das últimas décadas tem se intensificado a produção e divulgação de estudos que discutem a temática da ambientalização nas instituições de ensino superior (IES) no campo da pesquisa em educação ambiental (EA). Com isso, objetivou-se compreender as diferentes perspectivas que estruturam os discursos sobre ambientalização mobilizados pelos autores de uma tese e de uma dissertação em EA que problematizam essa temática nas IES, defendidas no período de 1981 a 2018. Realizou-se uma pesquisa do tipo estado da arte em uma perspectiva analítico-compreensiva de uma tese e de uma dissertação em EA. Para a análise, realizamos aproximações com as noções da

<sup>I</sup>Universidade Regional do Cariri, Missão Velha, CE, Brazil. Email: dayane.silva@urca.br  <https://orcid.org/0000-0002-1073-5495>

<sup>II</sup>Universidade Estadual Paulista Júlio de Mesquita Filho, Rio Claro, SP, Brazil. Email: r.cavalari@unesp.br  <https://orcid.org/0000-0002-3782-2396>

teoria polifônica da enunciação. Com a análise, observou-se a necessidade de transformação do conhecimento e da abordagem da temática ambiental com base em perspectivas interdisciplinares, bem como a promoção e efetivação de práticas de inserção da temática ambiental que possam envolver a comunidade universitária e estar presentes nos eixos centrais do currículo dos cursos.

**Palavras-chave:** Ambientalização nas Instituições de Ensino Superior. Teses e Dissertações em Educação Ambiental. Estado da Arte. Teoria Polifônica da Enunciação.

## RESUMEN

En las últimas décadas, se ha intensificado la producción y difusión de estudios que discuten la temática de la Ambientalización en las IES en el campo de la investigación en EA. Con esto, el objetivo fue comprender las diferentes perspectivas que estructuran los discursos sobre Ambientalización movilizados por los autores de las tesis de maestría y de doctorado en EA que problematizan la temática de la Ambientalización en las IES, defendidas en el período de 1981 a 2018. Se realizó una investigación del estado del arte en una perspectiva analítico-comprensiva de una tesis de maestría y una de doctorado en EA. Para el análisis, realizamos aproximaciones con las nociones de la Teoría Polifónica de la Enunciación. Con el análisis, se observó la necesidad de transformar el conocimiento y el abordaje de la problemática ambiental desde perspectivas interdisciplinarias, así como la promoción e implementación de prácticas para la inserción de las problemáticas ambientales que puedan involucrar a la comunidad universitaria y estar presente en los ejes centrales de la cuadrícula curricular de los cursos.

**Palabras clave:** Ambientalización en Instituciones de Educación Superior. Tesis de Maestría y de Doctorado en Educación Ambiental. Estado del Arte. Teoría Polifónica de la Enunciación.

## INTRODUCTION

The term *greening* has been used to designate the integration of environmental education (EE) and/or sustainability discussions within higher education institutions (HEIs), encompassing both campus or institutional greening and curriculum greening. However, incorporating these themes requires prior reflection and critical engagement with conceptual tensions and ambiguities (González-Gaudio, Meira-Carrea and Martínez-Fernández, 2015).

This can be understood as a “continuous process of cultural production aimed at training professionals committed to the ongoing pursuit of the best possible relationships between society and nature aligned with values of justice, solidarity, and equity [...]” (Junyent i Pubill, Geli de Ciurana and Arbat Bau, 2003, p. 21).

In Latin America, different strategies have been implemented to integrate these themes into higher education, such as scientific events, creating programs or projects, and developing diagnostic perspectives on how they are incorporated into universities. Examples include the Curriculum Greening of Higher Education (Aces — acronym in Spanish) international project, developed from 2001 to 2004; the *Alianza de Redes Iberoamericanas de Universidades por la Sostenibilidad y el Ambiente* (Ariusa) in 2007; and the cooperation project between the University of São Paulo (USP) and the Autonomous University of Madrid (UAM), which began under the *Programa de Cooperación Interuniversitaria e Investigación Científica entre España e Iberoamérica* in 2009.

According to Leff (2010b, p. 166-167), integrating socio-environmental themes into HEIs implies, among other issues, an “interdisciplinary reorientation of knowledge and professional

training, and its openness to dialogue with various political, economic, and social actors, in the collective construction of a sustainable society.”

It is worth mentioning that the researchers from some of these projects developed proposals to analyze greening processes in HEIs, such as the ten characteristics of curriculum greening according to the researchers from Aces, and the sustainability test from the Information, Awareness, and Sustainability Assessment in Universities platform, resulting from the project between USP and UAM.

Discussions about this theme in higher education “are a promising field of research, as they provide visibility to the environmental theme within universities, opening pathways for discussions, informed decision-making, and fostering a commitment to implementing socio-environmental responsibility initiatives” (Guerra *et al.*, 2015, p. 13).

Given the wide range of texts in academia that contribute to disseminating studies aiming to discuss the theme of greening HEIs, we are particularly interested in the theses and dissertations defended in postgraduate programs in Brazil. According to Megid Neto and Carvalho (2018, p. 102), “master’s dissertations and doctoral theses are primary research documents, from which scientific articles, conference presentations, and other forms of public dissemination of academic research emerge.” The authors also consider that these texts “are much more complete research reports” (Megid Neto and Carvalho, 2018, p. 102).

We start from the understanding that theses and dissertations are considered speech genres<sup>1</sup> originating from academic-scientific discourse, and we believe that they constitute a space in which the speakers, as the main authors of the texts, organize the discourse through different voices, which, to some extent, respond to other discourses produced on greening HEIs. According to Ducrot (1987, p. 193), in this space of different discourses “the speaker, responsible for the utterance, gives existence, through it, to enunciators whose points of view and attitudes he organizes.” The discourses produced within the relationships that contribute to the constitution of the theme of greening are situated within a “chain of verbal communication” (Bakhtin, 1997, p. 320). From a Bakhtinian perspective, “it is associated not only with the links that precede it but also with those that follow it” (Bakhtin, 1997, p. 320). According to Bakhtin (1997, p. 291), “the speaker himself, as such, is, to some extent, a respondent, for he is not the first speaker, who breaks the eternal silence of a mute world for the first time.”

It is assumed that EE theses and dissertations that address the theme of greening HEIs produce, respond to, and echo different voices and perspectives related to this theme, and that, to some extent, they can represent discourses and perspectives in the field of EE research, as well as those of researchers discussing this theme.

This study aimed to understand the different perspectives that structure greening discourses mobilized by the authors of a thesis and a dissertation in EE which problematize the theme of greening HEIs and were defended from 1981 to 2018.

## RESEARCH PROCEDURES

The research is state-of-the-art, which “can be understood as ‘metaresearch’ (research about research) as it provides new understandings or interpretations of a given set of works and points to the need for complementary investigations” (Megid Neto and Carvalho, 2018, p. 108). According to the authors, this type of study can be considered from two perspectives: one “more panoramic in analysis and understanding” and the other “analytical and comprehensive” (Megid Neto and Carvalho, 2018, p. 109).

1 It is understood that the “speech genres” refer to the use of language and the various modes and spheres of this use, which “elaborates its relatively stable types of utterances” (Bakhtin, 1997, p. 279).

For the second perspective, the authors explain that “there is a need for in-depth reading and interpretation of the works, for multivariate data cross-referencing, and for comparing these cross-references and results with appropriate theoretical frameworks.” Furthermore, “an important aspect is to define works that allow for the exploration of the proposed research questions, while also analyzing texts with the depth expected for research of this nature” (Megid Neto and Carvalho, 2018, p. 109).

Our research aligns with an analytical and comprehensive perspective, as we aim to understand certain aspects related to the theme of greening HEIs in a thesis and a dissertation in EE, adopting approaches based on the polyphonic theory of enunciation developed by Oswald Ducrot (1987).

## DOCUMENTARY CORPUS CONSTITUTION

To select the documentary corpus, we used the Fracalanza Platform from the “*Estado da Arte da Pesquisa em Educação Ambiental no Brasil*” (Earte)<sup>2</sup> Project, for studies defended between 1981 and 2016. In addition, we used the Thesis and Dissertation Catalog from the Coordination for the Improvement of Higher Education Personnel (Capes) for 2017 and 2018.

On the Fracalanza Platform, we used the term “greening” in “any field,” and a search and an advanced search were performed using filters to classify the education context>regular educational modality>higher education, for 1981 to 2012. By carrying out this procedure, we identified 11 studies. It should be mentioned that the classification filters for education levels on this platform are available only for studies up to 2012. Thus, for the research corresponding to the period from 2013 to 2016, we conducted an advanced search only using the education context filters and defense year, resulting in 24 studies.

In the Capes Catalog, we selected works in which the term “greening” was mentioned, based on previously established criteria. These criteria included the following: the studies must encompass the educational process and environmental issues, being characterized as EE studies according to the criteria<sup>3</sup> developed by the Earte Project’s researchers, and must focus on an investigation within a higher education institution. Using this procedure, we identified 24 works from 2017 to 2018.

In total, 59 theses and dissertations were identified, and, after reading them, we aimed to select the research that addressed the theme of greening HEIs, engaging with texts by authors who discuss these issues; we thus obtained 40 selected studies.

From this broader set of studies, we selected one thesis and one dissertation to conduct an in-depth analysis from an analytical and comprehensive perspective (Megid Neto and Carvalho, 2018). As an analytical tool, we sought to draw connections with some concepts developed by Oswald Ducrot (1987).

For this final selection, the following steps were carried out:

- Grouping the 40 selected studies into two groups: one with studies discussing curriculum greening and the other with studies analyzing campus greening in a specific university.
- Selecting studies by discourse genre, thesis and dissertation, for each group previously defined.
- Identifying and selecting studies within curriculum greening that utilize the characteristics that should be included in an environmental study as outlined by the Aces Network (Environmental Study Characteristics), quantified by speech genre, and the campus greening that used the sustainability test.

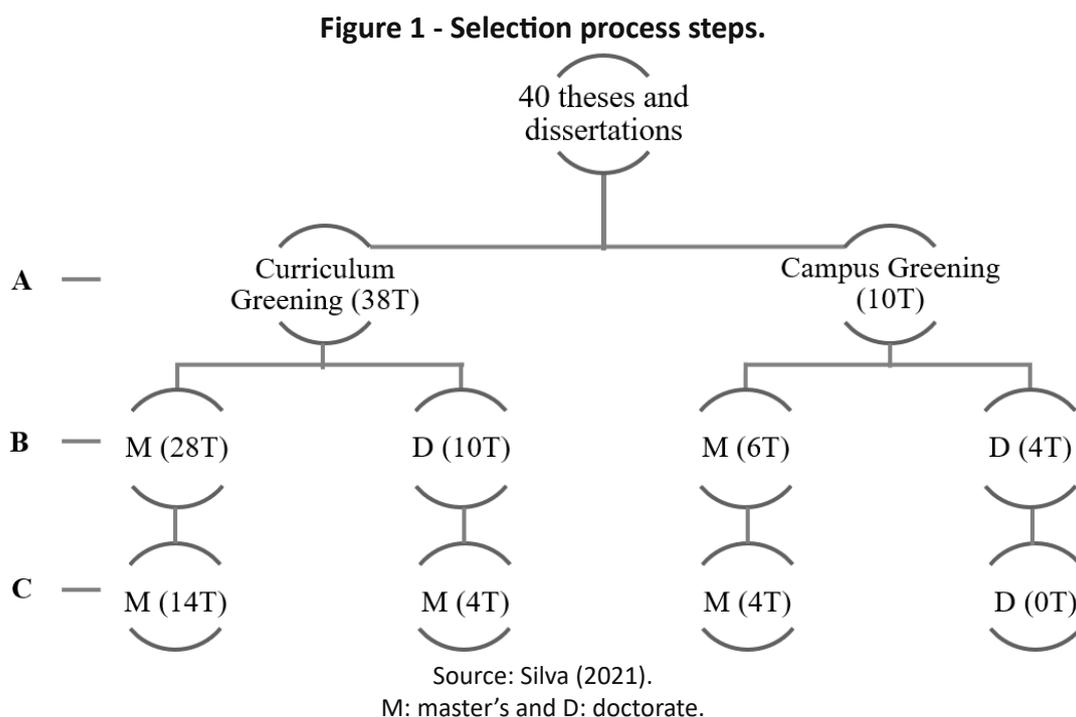
2 See: <http://www.earte.net>.

3 For more information, see: <http://www.earte.net/?page=criterios-selecao>.

Finally, we selected two studies based on speech genre — one thesis and one dissertation — each belonging to one of the initially defined groups of studies.

It is worth highlighting that our choice of the characteristics developed by the Aces Network and the sustainability test is due to the influence of these analytical proposals on the academic production selected for this study. Furthermore, the first stage of selection is not exclusive, as a study may analyze both the inclusion of environmental issues in the curriculum and campus spaces. This also applies to analytical proposals in these studies, meaning the characteristics developed by the Aces Network and the sustainability test.

For a better understanding of this selection, Figure 1 shows the systematization of the selection process steps of one study focusing on curriculum greening and another focusing on campus greening, considering the set of 40 theses and dissertations in EE completed in Brazil from 1981 to 2018 that address these topics.



Based on this selection process, we chose:

- A thesis that adopts the thesis discourse genre, analyzing curriculum greening, entitled “*A inserção das questões ambientais no curso de licenciatura em Química da Universidade Federal de Sergipe*” [Including environmental issues in a Chemistry Teacher Education Program at the Federal University of Sergipe] (Pitanga, 2015).
- A dissertation that adopts the dissertation discourse genre, focusing on campus greening, entitled *Ambientalização universitária: o olhar dos estudantes da UFSCar para as questões ambientais* [University Greening: UFSCar Students’ Perspectives on Environmental Issues] (Vieira, 2015).

## DATA ANALYSIS

To discuss the relationships established in greening, based on the analysis of the selected thesis and dissertation, we draw on the polyphonic theory of enunciation developed by Oswald Ducrot (1987), as previously mentioned.

This author draws on the polyphony introduced in the field of language by Mikhail Bakhtin in his work *Problems of Dostoevski's Poetics* (1963). According to Nascimento (2015, p. 343), Ducrot “introduces the term polyphony into linguistics to challenge the principle of the uniqueness of the speaking subject while asserting that the meaning of utterances is, by nature, polyphonic.”

It is important to highlight that both Bakhtin and Ducrot discuss the phenomenon of polyphony and are authors widely used in the field of linguistics. However, according to Carel (2011, p. 27), Bakhtin’s name is associated with “intertextual polyphony,” referring to “the allusion, by a single utterance, to multiple contents,” while Ducrot is linked to “semantic polyphony,” which concerns “the presence of multiple enunciating instances within the utterance.” Based on these distinctions, this research is interested in analyzing the genres of theses and dissertations through the lens of the polyphony developed by Ducrot.

Certain concepts need to be understood, such as the distinction between sentence and utterance. The first, a “theoretical object,” is not part of the observable domain for the linguist, but rather constitutes an invention of this particular science known as grammar. The second, “what the linguist can take as observable, is the utterance considered as the particular manifestation, as the *hic et nunc* occurrence of a sentence” (Ducrot, 1987, p. 163-164, emphasis added).

Another important concept refers to the definition of the roles that subjects play within the utterance. These roles are the speaker (S) and the enunciator (E). The first refers to “a being who, in the very sense of the utterance, is presented as its responsible party, that is, as someone to whom the responsibility of this utterance must be attributed. It is to this person that the pronoun ‘I’ and other first-person markers refer” (Ducrot, 1987, p. 182).

Regarding the notion of enunciator, according to Ducrot (1987, p. 192):

[...] these beings are considered as if they were expressing themselves through the enunciation, without attributing precise words to them; if they “speak,” it is only in the sense that the enunciation is seen as expressing their point of view, their position, their attitude, but not, in the material sense of the term, their words.

Ducrot proposes two types of polyphony in enunciations: “polyphony of speakers” and “polyphony of enunciators.” The first occurs when, in the same enunciation, there is the existence of two distinct speakers, possibly subordinated. The second occurs when, in the same enunciation, different points of view are identified, meaning that enunciators are presented by the speaker, and the speaker assumes different positions in relation to them: sometimes approving, sometimes assimilating them, or sometimes opposing them (Nascimento, 2015, p. 344).

Based on these notions, we selected the enunciations to be analyzed, derived from the readings of the selected research. To delimit these enunciations, we considered two main questions: a) the assumptions regarding knowledge linked to the theme of greening; and b) the different ways the environmental theme is integrated into teaching, research, outreach, and management in HEIs. After delimiting and selecting the enunciations, we aimed to analyze the polyphony that constitutes and pervades them, based on the following questions: “a) Does the enunciation contain the speaker function?; b) To whom is this function attributed?; c) What are the different points of view expressed by the enunciation?” (Azevedo, 2011, p. 67).

We adopted some conventions to analyze the enunciations, which are as follows: identifying the study, page number, and line numbering of the excerpt based on the page from which it was taken. We also used some abbreviations to indicate the speakers and enunciators, such as S1 to indicate the speaker’s discourse responsible for the enunciation presented, particularly in the analyzed thesis or dissertation; S2/S3/S4 to indicate the speaker’s discourse introduced in the enunciation by S1.

It is important to highlight that, for this analysis, we are not concerned with the researcher *per se*, but rather with the researcher's representation as an engaged agent, participating in the constitution of greening, situated within the field of EE research. The enunciators are presented based on the viewpoints found in the enunciation, and are represented by the following abbreviations: S1, S2, S3. However, they can also be described in full during the analysis.

## DISCOURSES RELATED TO GREENING HIGHER EDUCATION INSTITUTIONS IN THE THESIS AND DISSERTATION ANALYZED

### ASSUMPTIONS RELATED TO THE KNOWLEDGE CONCERNING GREENING HIGHER EDUCATION INSTITUTIONS

In this section, we analyze the different voices mobilized by the speakers regarding the assumptions related to the knowledge that underpins and guides reflections and actions developed that concern greening HEIs in the dissertation (Vieira, 2015) and the thesis (Pitanga, 2015) selected. This analysis is justified by the understanding that educational reflections and actions are influenced by assumptions that guide and shape the educational process.

Based on the analysis of the selected statements, we observe that the speakers (S1), as the primary authors of the text, position themselves both through verbs conjugated in the first- person plural, suggesting collectivity in text construction, and in the third-person singular, accompanied by the subject indetermination marker or the indefinite pronoun “*se*” in Portuguese, indicating that the subject performing the action is indeterminate. The indetermination of the subject and impersonality are characteristics of the dissertation and thesis genres, originating from academic and scientific discourse, and although they are common in these genres, they do not apply to all research produced on EE. In some statements, it can be observed that the speaker uses verbs that direct and indicate how the presented discourse should be read by the interlocutor, such as the use of the expression “need to be understood”.

We observe that different voices are activated by S1 through both direct and indirect speech, as is the case with the documents analyzed in the research, namely political pedagogical projects and course syllabi. We also observe research participants' discourse mobilization, including faculty and students from the institutions analyzed, as well as authors' studies who discuss greening or EE, with whom the speaker engages and contributes to the discussion. By mobilizing these speakers, legitimacy or authority is attributed to the discourse, as well as responsibility for it being assigned to a particular speaker, while also reaffirming or disagreeing with the idea presented in the statement.

These understandings can be observed in the excerpts and analyses presented, alongside the assumptions related to knowledge on greening HEIs, among which we highlight several aspects, such as:

- The need for a change or transformation of knowledge regarding concepts, methodologies, and the structure that organizes knowledge, or a change in the scientific paradigm.

This aspect can be observed from the excerpt in item 5, entitled “The Study of Curriculum Greening in the Political Pedagogical Project of a Chemistry Bachelor's Degree Program,” under Subitem 5.1, “Diagnosis Based on the Curriculum Structure Analysis” (Pitanga, 2015). In this statement, through indirect citation, S1 discusses the need to consider greening as a form of transforming hegemonic knowledge and emphasizes that it should not be limited to an instrumentalized approach. Then, through direct citation, S1 states that greening should permeate the realms of HEIs, including

research, curriculum, outreach, and management, as well as the relationship with the university and the broader community, as presented below (Pitanga, 2015, p. 105):

6 Leff (2010a) cautions against limiting the focus to merely creating a normative  
7 instrument for “curriculum greening.” According to him, the process arises from  
8 the need to transform traditional scientific paradigms and produce new  
9 knowledge, as well as from dialogue, hybridization, and knowledge integration,  
10 as well as collaboration among various specialists in the pursuit of an  
11 interdisciplinary organization of knowledge for sustainable development. This  
12 discourse is supported by Marcomin and Silva (2009, p. 114, authors’  
13 emphasis).  
14 The process that paves the way for the institution to become an environmentally  
15 sustainable university should be a “crutch” for these three traditional pillars of  
16 the university — teaching, research, and outreach. In addition to these,  
17 management is added, understood from a contemporary, systemic perspective,  
18 as an enabling and facilitating element (rather than an inhibitor and complicator,  
19 as in traditional public administration), as well as an integrator and unifier of  
20 the university’s mission, values, and future vision. It is from this set of  
21 institutional dimensions, with the participation of all possible actors within it,  
22 and their interaction with civil society stakeholders, that a series of actions will  
23 be implemented, leading to concrete results for sustainability.

The speaker (S1) begins the paragraph with the voice of a second speaker (S2), represented by Leff’s (2010a) discourse, also in line 7, using the pronoun “he,” both based on indirect citation. Following this, a third voice (L3) is introduced, presented through a direct discourse account from Marcomin and Silva (2009, p. 114).

Between lines 6 and 13, when starting the statement, S1 uses the word “cautions,” marking in the text how S2’s discourse should be read — attentively. L1 states that curriculum greening should not be limited to a “normative instrument” but must be developed aiming to transform “traditional scientific paradigms and producing new knowledge.” The speaker also indicates the need for an interdisciplinary perspective to address sustainable development, representing the point of view of the first enunciator (E1). For the second enunciator (E2), greening actions of the curriculum developed from the “focus to merely creating a normative instrument” may not aim to, or may not promote, actions that transform knowledge related to “traditional scientific paradigms and producing new knowledge” and interdisciplinarity. From the perspective of the third enunciator (E3), when associated with “traditional scientific paradigms,” the knowledge in the curriculum may not address aspects such as the “integration of knowledge” or dialogues between different specialists. By using the noun “need” in line 8, it suggests the sense of the quality of what is necessary, indicating that it may be absent (Pitanga, 2015, p. 105).

Next, between lines 14 and 23, the statement is presented to the interlocutor with the expression “This discourse is supported by,” suggesting a sense of ratification and confirmation of the previous discourse through the voice of S3. This expression also indicates a responsive positioning of the speaker in relation to the discourses that are produced and circulated regarding curriculum greening, research, outreach, and management (Pitanga, 2015, p. 105).

In this statement, through a direct discourse account and from E1’s perspective, for the institution to be considered “environmentally sustainable,” this process should be based on “teaching, research, and outreach,” as well as management. The latter must be addressed from a “contemporary, systemic perspective, as an enabling and facilitating element, as well as an integrator and unifier of the university’s mission, values, and vision for the future.”

The definition of the university spaces as a foundation can be observed in the statement by using the noun “crutch,” which refers to an object used to support a particular object, but in a figurative sense, it can be understood as a foundation — an idea reinforced by the expression “traditional pillars of the university,” both in line 16 (Pitanga, 2015, p. 105).

Implicitly, for E2, institutions that do not consider the dimensions of “teaching, research, and outreach” may not become an “environmentally sustainable university,” as this is a *sine qua non* condition. Furthermore, management may be an “inhibitor and complicator” resulting from a “traditional public administration”; therefore, it may not integrate or add to the “mission, values, and future vision of the university.” From E3’s perspective, for the university to become environmentalized, in addition to “teaching, research, and outreach,” a form of contemporary public administration should be considered that opposes “traditional public administration.” Finally, S1 states that by considering the different spaces of the university, as well as the university community and the dialogue with the civil community, it will be possible to develop actions and achieve “concrete results for sustainability” (Pitanga, 2015, p. 105).

In this statement, curriculum greening is associated with knowledge transformation through issues such as “dialogue, hybridization, and knowledge integration,” as well as the interdisciplinary perspective, in such a way that the need for transformation suggests that these issues are absent in the curriculum of the courses. Another aspect mentioned refers to the need to consider the dimensions of teaching, research, outreach, and management as a foundation for greening, whereby the latter adds responsibility as an “integrator and unifier of the university’s mission, values, and future vision” (Pitanga, 2015, p. 105).

Regarding the approach to environmental themes from an interdisciplinary perspective as a path for transformation or change, while we recognize its relevance, we question whether the proposed transformations of knowledge should not also be associated with transformations of the structures that organize them, that is, a possible overcoming of the disciplinary organization. We understand that there is not a complete absence of actions developed under an interdisciplinary perspective in HEIs, which partially addresses this condition. However, we can highlight the need to foster actions that would enhance this perspective in HEIs.

Another aspect observed relates to some attributes that should be part of the profile of professionals trained through curriculum greening. These attributes are characterized as assumptions related to the knowledge that underpins and guides the reflections and actions concerning greening HEIs. These ideas are present in the excerpt from item 2, “Environmental Education and Sustainability,” where the speaker presents their stance on the values and ideas that should be encompassed by EE and sustainability. Although the term “greening” is not explicitly mentioned, we understand that these themes are central to the analysis of this process as presented by the author (Vieira, 2015, p. 16):

21 In this research, we assume that Environmental Education (EE) should be  
 22 critical and emancipatory. We believe that the path toward building more  
 23 sustainable societies involves the formation of questioning and autonomous  
 24 individuals who deconstruct “dominant monocultures” or “social production  
 25 logics of exclusion,” which naturalize social differences/hierarchies, devalue  
 26 ancient traditional knowledge, and prioritize the acceleration of time,  
 27 consumption, productivity, and globalized culture (Santos, 2002). The desired  
 28 sustainability needs to be “strong,” acknowledging the finitude of natural  
 29 resources, the inequality in access to and use of these resources, and, therefore,  
 30 adopting a more just environmental project for the equitable redistribution of  
 31 resources on global and intergenerational terms (Carvalho, 2008).

In this statement, the speaker (S1) makes a standpoint using the first-person plural, indicating a shared responsibility for the text, as seen in the verbs “assume” and “we believe” in line 22. This plurality is also present in the indirect speech in the text, represented by the voices of S2 — Santos (2002) and S3 — Carvalho (2008), which create a polyphony. Although Ducrot (1987) does not consider indirect speech as a case of polyphony of speakers, we adopt Nascimento’s (2015, p. 346) understanding, where “in the very sense of the statement, the speaker responsible for the discourse (S1) attributes the responsibility of the reported discourse to another speaker, explicitly identified in the statement itself.”

Between lines 22 and 27, from E1’s perspective, it is suggested that the construction of “more sustainable societies” is directly related to the process of training professionals who, in turn, must have certain attributes, namely “questioning and autonomous,” and consequently, they will be able to break away from dominant logics. In E2’s understanding, the use of the adverb “more” in the sense of quantity/intensity, in line 22, suggests that current societies are not sufficiently sustainable. Therefore, they do not produce people capable of breaking away from the logics that devalue other forms of knowledge, are based on perspectives that prioritize global production and consumption, and remain predominant. According to E3, “critical” and “emancipatory” EE is synonymous with a perspective that aims to construct “sustainable societies” and training of people who deconstruct the “dominant monocultures.” Thus, for the fourth enunciator (E4), EE that does not commit to these values will be unable to build “sustainable societies” and, as a result, will remain within “dominant monocultures” or “social production logics of exclusion” (Vieira, 2015, p. 16).

Next, between lines 27 and 31, the speaker presents the understanding of “sustainability” adopted in the research, in which these statements are conveyed through the indirect speech of S2. In this passage, for the first enunciator (E1), “strong” sustainability recognizes that natural resources are limited and access to these resources is unequal, and thus it is necessary to “assume a more just environmental project.” In contrast, for E2, “weak” sustainability is linked to consumption patterns and unequal access to natural resources and, therefore, lacks the ability to take on a “more just environmental project.” From the perspective of a third speaker (E3), the environmental projects that have been developed are not associated with the idea of “equitable redistribution” of natural resources and are related to the concept of weak sustainability. It is worth noting the variation in the expression “natural resources” to “resources” between lines 28 and 29 (Vieira, 2015, p. 16).

In this statement, it seems that greening plays an important role regarding the profile of professionals in training, as well as their reflective capacity concerning the relationship between society and nature.

## INSERTING ENVIRONMENTAL THEMES INTO TEACHING, RESEARCH, OUTREACH, AND MANAGEMENT IN HIGHER EDUCATION INSTITUTIONS

In this section, we are interested in exploring the different forms of greening developed within institutions and analyzed in the selected thesis and dissertation. These, in turn, aimed to investigate or diagnose greening in research, curriculum, management, and/or outreach, among which we present specific analyses of the last three areas. We understand that these analyses are anchored in and engage with different voices that precede and follow the context of these research productions and are situated in the “chain of verbal communication” (Bakhtin, 1997, p. 320).

As in the previous section, we observe that the speakers and strategies mobilized by S1 in the texts are the same, both in terms of the speaker’s markers in the text using verbs conjugated in the third-person singular and plural, as well as the voices invoked.

When analyzing the initiatives for integrating environmental issues in the HEIs investigated by S1 in the thesis and dissertation, we observe that, in relation to management, some key issues can be highlighted, such as the importance of institutions developing institutional policies that incorporate environmental concerns into the spaces of the HEI, so that greening does not remain limited to isolated actions.

Linked to these institutional policies, the development of actions related to water, energy, and green spaces by HEIs stands out, as well as the need to disseminate these actions within the university community. Despite the institution implementing environmental management initiatives, students in initial training often fail to perceive them, and as a result these actions do not become part of their learning experience. This condition highlights the importance of spreading awareness of these initiatives, but, more importantly, it stresses the need for the university community's involvement in creating and developing these actions.

These ideas can be observed in the analysis of the section related to environmental management on campus, found in item 6.1.4, entitled "Approximations and Distances in Teacher Education Programs", as follows (Vieira, 2015, p. 66):

4 When analyzing the responses to the questions about Environmental  
 5 Management, we noticed that, despite the participants belonging to different  
 6 scientific groups (Education and Chemistry), they share many similarities. Most  
 7 of them (especially on the São Carlos campus) know little or nothing about the  
 8 management actions, as indicated by the high percentage of "I don't know"  
 9 responses in nearly all the tables. The topics that students had difficulty  
 10 commenting on include the existence of institutional policies, waste  
 11 management, water, energy, green spaces, technologies, and mobility.  
 12 It is certain that universities have a social responsibility to train professionals  
 13 prepared for active citizenship and address the environmental crisis. In addition  
 14 to teaching, Higher Education Institutions (HEIs) must invest in physical,  
 15 material, and human resources to actually be an environmentally educating  
 16 space (Brasil, 2007). In the technical and administrative aspect, the collected  
 17 information indicates that UFSCar has made progress, supported by an internal  
 18 policy that highlights the environmental theme through guidelines and  
 19 sustainability principles. As with any process, there is still much to improve;  
 20 however, the question remains: How can the lack of awareness among students  
 21 regarding the spaces they occupy throughout their undergraduate years be  
 22 explained?

In this passage, when presenting the analysis, the speaker (S1) uses the first-person plural, positioning themselves as part of a collective narrating the findings, as observed by the verb "noticed" in the present indicative (line 5). Next, S1 introduces the voice of a second speaker (S2) through indirect discourse, beginning the paragraph with the assertive "it is certain that", indicating to the interlocutor that what follows is an expression of truth. It is important to note that S2 represents the perspective of official bodies, specifically the Ministry of the Environment and the Ministry of Education (Vieira, 2015, p. 66).

In the passage related to environmental management, between lines 4 and 11, for the first enunciator (E1), students in the various courses analyzed do not perceive the environmental management practices developed by the institution on the campuses. Considering that these students are from different courses, there seems to be a contradiction in the speaker's

expectation regarding the similarity of responses, marked by the use of the adverb “despite” in line 5. For a second enunciator (E2), the students are unaware of the institutional policies related to environmental management and, therefore, do not perceive or comment on these practices. For a third enunciator (E3), the institution does not implement environmental management practices related to “waste management, water, energy, green spaces, technologies, and mobility,” according to most students’ perceptions, and, because of this, they find it difficult to offer an opinion (Vieira, 2015, p. 66).

In the second paragraph, line 12, the university’s expected actions as a social institution are outlined, revealing the presence of several enunciators. The first enunciator (E1) suggests that an “environmentally educated space” is linked to training that prepares individuals to be citizens and face the “environmental crisis,” as well as to investment in infrastructure and staff. From another perspective, the second enunciator (E2), using the adverbial phrase “in addition to”, in line 13, implies an addition and indicates that the construction of the educator space is also related to the promotion of “physical, material, and human resources” as an institutional duty connected to the university’s social role. The third enunciator (E3), through the phrase “to actually be” in line 15, implies that institutions fail to invest adequately in material conditions and staff, which prevents the realization of the “educating space” and greening of the university.

It is worth noting that, in this enunciation, based on S2’s indirect discourse, the construction of the “environmentally educating space” is portrayed as the sole responsibility of universities, excluding other spheres and discursive figures that influence this process, such as educational public policies, governmental sectors, international bodies, among others (Vieira, 2015, p. 66).

Finally, in the third paragraph, referring to the passage between lines 16 and 21, based on the analyzed information, the Federal University of São Carlos (UFSCar) is ahead of “technical and administrative” issues related to environmental topics, ensured by the presence of “sustainability principles” in the institution’s internal guidelines. However, it still needs improvement, a notion represented by E1. From the second enunciator’s (E2) perspective, the explicit mention of sustainability in the university’s internal guidelines and principles does not guarantee the advancement of practices related to this theme on campus.

In the ongoing discourse, the speaker revisits an idea previously constructed and presented while analyzing the research data, based on the following question: “How can the lack of awareness among students regarding the spaces they occupy throughout their undergraduate years be explained?” In this enunciation, multiple perspectives are in dialogue. For the first enunciator (E1), students are unaware of the environmental practices developed by UFSCar, despite occupying the university’s spaces during their studies. This statement can also align with E2’s perspective, where it is suggested that the way in which UFSCar’s spaces are being occupied does not contribute to students recognizing the activities carried out there (Vieira, 2015, p. 66).

From this excerpt, we understand that, in addition to the importance of having environmental practices reflected in official documents, it is also crucial to develop actions that encourage the university community to be involved in the institution’s spaces.

Another point addressed by the speaker refers to outreach projects, analyzed based on one of the characteristics of an environmentalized study according to the Aces researchers, which is “coherence and reconstruction between theory and practice” (Vieira, 2015, p. 91). This statement is included in item 6.2.4, entitled “The Presence of Environmental Education (EE) in the Curriculum across Different Scientific Fields”, as follows (Vieira, 2015, p. 91):

31 *d) Coherence between Theory and Practice*

32 Outreach projects are barely valued.

33 Coherence between theory and practice can be found in many aspects of each  
34 course, but for this analysis, it was relevant to focus on a curriculum gap that is  
35 still difficult to overcome: lack of recognition of outreach activities. It is  
36 understood that constant dialogue with the community is essential for building  
37 meaningful knowledge that contributes to transforming and tackling socio-  
38 environmental crises.39 Only two questions from the sustainability test mentioned outreach projects:  
40 one aimed at identifying where/in what spaces socio-environmental education  
41 is present (outreach projects are one of the options), and another asking whether  
42 students were familiar with the themes related to these projects. Just over 10%  
43 of students from each course across the three campuses identified outreach as  
44 one of the practices contributing to socio-environmental education. The themes  
45 were not widely known, except for the Chemistry students (Araras campus),  
46 who identified “waste” (41.2%) as the most recurring theme.

In this excerpt, the speaker presents themselves in the third-person singular impartially, which can be identified by the phrase “it is understood” in line 35. The third-person speaker, as a narrator, creates, “in terms of the statements and different genres, the idea that the discourse presents itself, and in this sense, it seems to become objective.” However, this positioning “does not mean a total distancing of the speaker responsible for the discourse (S1) from what is said, much less an erasure of their existence” (Nascimento, 2015, p. 350).

Regarding the first paragraph in the item “d) Coherence between Theory and Practice” (lines 31 to 38), some perspectives of speakers are in dialogue. For E1, outreach is considered a form of dialogue with the community that can contribute to “tackling socio-environmental crises,” but it still needs to be more valued. The use of the expression “curriculum gap” in line 34 indicates an absence or need that should be addressed in the curriculum of the analyzed courses. From the perspective of a second enunciator (E2), outreach is an undervalued activity, despite representing both a form of dialogue with the community and the relationship between “theory and practice,” presented as essential and emphasized by the adjective “essential” in line 36. For a third enunciator (E3), there is a direct relationship between the valuation of outreach activities and “contributes to transforming and tackling socio-environmental crises,” in which these relations are mediated through dialogue with the community (Vieira, 2015, p. 91).

In the second paragraph, between lines 39 and 46, the speaker presents a summary of the students’ responses regarding outreach activities. It is worth highlighting that these represent the voice of a second speaker (S2), introduced by S1 in the statement. From E1’s perspective, the adverb “only” is used at the beginning of the paragraph in the sense of something incipient, suggesting that references to outreach activities are minimal both in the students’ responses and in the test used (the test only contains two questions related to this topic). Thus, some students believe that outreach projects contribute to “socio-environmental education,” despite not knowing the topics covered in these projects. For E2, the presence of questions in the “test” related to outreach projects indicates that these are recognized as an important element for “socio-environmental education,” so that students also acknowledge outreach as a practice on campus that contributes to their education.

The idea in this statement suggests that the number of questions in the test used and the students’ responses regarding outreach projects may represent a “structural” gap. That is, the issue

is not only the recognition of the outreach activities developed by the HEI, but also the factors that influence their invisibility (Vieira, 2015, p. 91).

Considering that this area represents one of the pillars of the university and a means of dialogue between it and the external community, this leads us to question the factors that have contributed and continue to contribute to this condition of devaluation and possible invisibility within the university.

Finally, regarding the curriculum, some issues are observed, such as the relationship between the institutionalization of environmental issues in the curriculum of the courses and their approach in the context of the classes. It is necessary to understand this relationship in its complexity and ensure that this topic is not disconnected from the idiosyncrasies of certain professors. There needs to be environmental issues in the courses throughout the program. However, access should be guaranteed for these courses and address the marginalization of these topics when they are concentrated in elective subjects. Environmental issues in the curriculum are relevant, but they need to be critically addressed and should consider issues related to the local context and its connection to the global context.

These ideas can be observed in item 5, “The Study of Curriculum Greening in the Political Pedagogical Project of a Chemistry Bachelor’s Degree Program”, under Subitem 5.1, “Diagnosis Based on the Curriculum Structure Analysis” of Pitanga’s work (2015, p. 100), where the speaker (S1) takes an impartial stance with the use of the expression “can be observed” (line 3), presenting their observations based on EE analysis in the pedagogical political project, as follows (Pitanga, 2015, p. 100):

3 Regarding Environmental Education, there is an offered course  
4 entitled Education and Environmental Ethics, which, as previously presented in  
5 the methodology, was not listed among the courses offered in the last two years  
6 by the Department of Chemistry (2012–2013). This is due to the disconnection  
7 between university departments, as it is a course regularly offered by the  
8 Department of Education. Moreover, as the information management system  
9 for course registration is not universal, the students face difficulty accessing this  
10 information. Thus, this issue is seen as yet another obstacle resulting from the  
11 departmentalized, bureaucratic, and fragmented organizational structure of the  
12 institution, divided into areas and subareas of knowledge.

From E1’s perspective, although there is a course offering that covers EE in the chemistry program, its connection to the “Department of Education” and the “information management system” regarding course registration makes it difficult to access these courses. This fact represents an “obstacle” to incorporating EE into training these professionals, in which the main cause was “departmentalization” and “fragmentation” “into areas and subareas of knowledge.” Implicitly, for a second enunciator (E2), the institutionalization and availability of courses addressing EE become ineffective when the dissemination and access to information are not guaranteed. For a third enunciator (E3), the fragmentation of knowledge is also linked to how the institution organizes departments and assigns specific topics to certain courses (Pitanga, 2015, p. 100).

It is understood that the inclusion of EE in courses in the pedagogical political project (PPP) does not guarantee the students’ access to it and points to certain aspects that can hinder this access, such as the way the course is organized and distributed, as well as the system that facilitates access to it.

Thus, we consider that some aspects may limit curriculum greening, such as the limited access of students to certain courses and a possible marginalization of environmental issues when they are predominantly concentrated in elective courses (Pitanga, 2015, p. 101-102), resulting from a process of curriculum organization, as well as the prioritization of certain courses as mandatory.

It is important to highlight that, despite this condition of marginalization, from a historical perspective, there has been progress in incorporating environmental issues into higher education curricula. If we consider that, in the 1990s, this topic was primarily present through outreach activities, for example, we can observe this evolution. Thus, according to Carvalho (2001, p. 324-325), “in the 1990s, particularly after the second half, there was a trend towards increasing the presence of environmental issues in the form of outreach activities, courses, and/or environmental programs in higher education.”

According to this author, greening from the 1990s has occurred through several channels, such as “the offering of new postgraduate courses in the form of specialization and outreach in Environmental Management (EM) and Environmental Education (EE); and iii) the establishment of *stricto sensu* postgraduate programs, which, despite variations in emphasis, are defined as master’s and doctoral programs in environmental studies” (Carvalho, 2001, p. 327).

## MEANINGS MOBILIZED BY THE SPEAKERS IN THE ANALYZED STATEMENTS

By bringing the different voices of the speakers into play in the construction of the statements, we can infer that the training of professionals in HEIs whose teaching, research, outreach, and/or management are environmentally oriented represents a path toward concretizing greening in society. We understand that, although these institutions are not the only space for the greening process of these professionals, they serve as an intentional space for training. This idea can be justified by considering that HEIs provide privileged spaces for professional practice and the formation of citizens. Thus, professionals trained by environmentally-conscious institutions are potential agents of transformation in their contexts of action and as part of a collective.

Thus, the speakers present and propose certain aspects related to professional training, such as the contribution of interdisciplinarity, contextualization, decentralization of power, and/or a “holistic vision” to overcome perspectives of knowing and conceiving the world in a reductionist and fragmented manner, as Pitanga (2015, p. 64) points out. These discourses are not limited to the two studies analyzed but are also noted in the studies by Carvalho, Cavalari and Silva (2016, p. 59), who indicate that in the abstracts of the theses and dissertations analyzed, “the critique of the modern science paradigm is made, identifying some of its assumptions of a reductionist nature and the consequences associated with them.” Another characteristic highlighted by these authors refers to the “different emphasis activated to characterize ‘emerging paradigms’: dialogue of knowledge, complexity, inter/transdisciplinarity, or even the idea of sustainability” (Carvalho, Cavalari and Silva, 2016, p. 59).

Among the perspectives mentioned, we understand that interdisciplinarity is a relevant issue for greening, and it is interesting to consider some aspects, such as the assumption of the discipline for interdisciplinarity. According to Lenoir (2005), the interdisciplinary perspective does not oppose the disciplinary perspective; on the contrary, it cannot exist without it. Another aspect to highlight concerns the importance of reflecting on the condition of a discourse that has already been established and unquestioned, attributed to interdisciplinarity, as well as the approach to this theme from an innovative perspective, which is constantly presented in research. Thus, in addition to proposing a new understanding or action from an interdisciplinary perspective, we question the contribution of actions already developed and how much the research pointing to interdisciplinarity as a path for carrying out greening takes these initiatives into account for developing their discussions.

Another issue, observed in the discourses of the statements, concerns the construction and delineation of a professional profile based on greening HEIs. Therefore, we are interested in asking what the profile is of the professional that wants to be trained in these HEIs.

Regarding this issue, we observed that the speakers mobilized certain meanings that suggest and characterize the profile of the professional to be trained through curriculum greening, outreach, research, and/or management. These professionals should meet characteristics such as being “questioning and autonomous individuals” (Vieira, 2015, p. 16), “with a broad and systemic view of the environment, committed to quality of life” (Pitanga, 2015, p. 31), and “emancipated people” (Vieira, 2015, p. 28). Furthermore, these professionals must be capable of deconstructing relationships based on the dominant hegemonic logic and “experience real situations that provide them with reflective capacity on the affective, aesthetic, and ethical dimensions of interpersonal relationships and with nature” (Pitanga, 2015, p. 31). They should also be “prepared for the exercise of citizenship and facing the environmental crisis” (Vieira, 2015, p. 66), as well as “attend to the demands related to issues of Environmental Management and Sanitation” (Pitanga, 2015, p. 99-100), and “deal effectively with issues that are as troubling as they are urgent” (Pitanga, 2015, p. 111).

In these propositions, it seems that there is an intention to train professionals who can position themselves critically in relation to the dominant logic, highlighting the university’s educational responsibility regarding environmental issues. By indicating these characteristics as necessary for the professional to be trained, the speakers may also suggest that, currently, the university partially meets this profile in its initial or continuing education programs. This implicit condition, which points to the fact that the university partially meets this profile, could indicate that the speakers view the university as a relevant and necessary space for the training of professionals committed to environmental issues.

We also note the presence of normative and prescriptive discourses in the description of the characteristics that professionals trained in environmentalized HEIs should possess. These discourses suggest a proposal that outlines rules and norms to be followed, which we consider necessary to problematize. This can be observed in some excerpts, such as “the need for training professionals who have a holistic view of current problems” (Pitanga, 2015, p. 64, our emphasis), “training of questioning and autonomous individuals, who deconstruct ‘dominant monocultures’ or ‘social production logics of exclusion’” (Vieira, 2015, p. 16, our emphasis). These characteristics are sometimes enunciated by the speakers who are responsible for the research and sometimes are discourses of others invoked by the speaker.

It is important to note that this normative and prescriptive aspect has already been pointed out by other research, such as Carvalho *et al.* (1998, p. 79), when analyzing “printed materials considered as being related to ‘environmental education.’” Among the aspects observed by the authors is a normative nature, with which “most of the material aims to dictate norms or action rules for the intended audience. In this specific case, rules about how to behave in relation to nature.” According to the authors, the material “assumes an imperative tone, that is, it announces what should and should not be done with respect to nature, in a categorical way” (Carvalho *et al.*, 1998, p. 103).

This condition can also be observed in some statements related to the assumptions regarding knowledge and practices associated with greening, as seen in the following excerpts: “We assume that EE should be critical and emancipatory” (Vieira, 2015, p. 16), “HEIs should invest in physical, material, and human resources to truly be an environmentalized educational space” (Brasil, 2007) (Vieira, 2015, p. 66), and “Thus, curriculum structures should include content, methodologies, and practices that go beyond technical competencies, and address social, economic, cultural, political, and other aspects, so that actual EE occurs” (Pitanga, 2015, p. 31).

We understand that the presence of a normative aspect in the analyzed research could be considered a contradiction when proposing the formation of professionals who contribute to transforming society-nature relations based on a set of rules that dictate how individuals should or should not understand and act in the world. However, we are not suggesting that perspectives that guide and support the assumptions and practices in the formative process of an environmentalized HEI are unnecessary; rather, we aim to problematize the prescriptive nature and argue that these perspectives could be framed as formative possibilities.

Furthermore, it is important to consider that these normative discourses observed in the analyzed research are also discourses from others, placed into the scene by the speaker, and circulating among researchers in EE, which the topic of greening HEIs is part of.

## FINAL CONSIDERATIONS

When analyzing the different perspectives that structure greening discourses, mobilized by the authors of a thesis and a dissertation in EE that problematize the theme of greening HEIs and were defended between 1981 and 2018, we observe some aspects, such as: the presence of the speaker in the text through markers of impersonality or collectivity when developing the research, where voices from other speakers are mobilized to suggest discourses of legitimacy, authority, and/or to assign responsibility to a specific speaker.

In addition to mobilizing these voices to construct the discourse, distinct viewpoints and speakers are activated and brought into play, contributing to the construction of discourses that may or may not be explicitly stated by the speaker, analyzed through two axes.

Regarding the first axis, the assumptions related to knowledge, it seems to us that the voices mobilized in the statements suggest both aspects related to identifying some challenges faced for implementing greening HEIs and possible ways to overcome these challenges.

Regarding the second axis, which refers to the different ways of integrating environmental themes into management, outreach, and curricula, we observe that the speakers indicate some possibilities that may contribute to greening practices. These include promoting dissemination actions, as well as involving the university community in the construction and strengthening of the initiatives developed within the institution, among others.

From these analyses, we understand that both axes presented provide clues for discussing what we consider to be one of the main objectives of greening HEIs, that is, training that can encompass certain characteristics through the approach to environmental issues and suggest a profile for the professional to be trained. Which characteristics should make up this professional profile, according to the speakers in these studies?

In addressing this question, we observe that the speakers mobilize different perspectives in their discourse, which are also conflicting and controversial. For example, they highlight the need for a transformation of knowledge and/or a critical perspective in addressing environmental issues, all of which are shaped by normative discourses.

At the end of this journey and based on the analyses conducted, without the intention of pointing out all the issues that may arise, we consider it important to continue this discussion through further research, as well as to problematize certain questions, such as:

What analyses would be possible if we were to place the different speakers in a dialogue, considering the different voices invoked by the speakers in the construction of the statements, as the main responsible parties for the texts? This could involve the voices of the speakers, as an official discourse present in the documents that guide curriculum construction in programs, as well as the discourse of faculty members in the investigated institutions or students.

We also observe that, in some statements, the speaker considers greening as a path for transforming knowledge within HEIs. Thus, aside from the aspects already described, what other elements could be considered to characterize this new knowledge?

We also emphasize that, both in the research conducted by some researchers discussing the theme of greening and in the thesis and dissertation selected, there is an analysis of initiatives within the management scope, which we consider relevant. However, we question the role played by management in HEIs. Stemming from the premise that management is a support activity through which the main functions of the university (teaching, research, and outreach) are developed, we should ask: in greening HEIs, is management taking precedence over the core activities, contributing to the formation of a university that is more administratively or operationally focused, as suggested by Chauí (2001)?

## ACKNOWLEDGEMENTS

We acknowledge the support of the Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES), Funding Code 001.

We would like to thank Fundação de Amparo à Pesquisa do Estado de Minas Gerais — FAPEMIG (Process No. APQ-00914-23) for the financial support of the research project entitled “*Academic Production in Environmental Education in Brazil: The State-of-the-Art of Theses and Dissertations Produced from 1981 to 2023.*” Length of study: 08/30/2023 to 08/29/2026.

## REFERENCES

AZEVEDO, Tânia Maris de. Outras vozes na argumentação: atualização da polifonia e reformulação da descrição semântico-argumentativa do discurso. **Letras de Hoje**, Porto Alegre, v. 46, n.1, p. 342-351, jan./mar. 2011.

BAKHTIN, Mikhail Mikhailovich. **Problemas da poética de Dostoiévski**. [S.l.]: [s.n.], 1963.

BAKHTIN, Mikhail Mikhailovich. **Estética da criação verbal**. Tradução: Paulo Bezerra. 6. ed. São Paulo: WMF Martins Fontes, 1997.

CAREL, Marion. A polifonia linguística. **Letras de hoje**. Porto Alegre, v. 46, n. 1, p. 27-36, jan./mar. 2011. Available at: <https://revistaseletronicas.pucrs.br/ojs/index.php/fale/article/view/9218>. Accessed on: June 7, 2023.

CARVALHO, Isabel Cristina de Moura. **A invenção do sujeito ecológico: sentidos e trajetórias em educação ambiental**. 2001. 349 f. Thesis (Doctorate in Education) – Universidade Federal do Rio Grande do Sul, Porto Alegre, 2001.

CARVALHO, Isabel Cristina de Moura. Educação para sociedades sustentáveis e ambientalmente justas. **Revista Eletrônica do Mestrado em Educação Ambiental**. v.1, p.46-55, 2008. Available at: <https://periodicos.furg.br/remea/article/view/3387>. Access on: June 7, 2015.

CARVALHO, Luiz Marcelo; CAMPOS, Maria José de Oliveira; CAVALARI, Rosa Maria Feiteiro; MARQUES, Andréia; MATHIAS, Arlete; BONOTTO, Dalva. Enfoque pedagógico: conceitos, valores e participação política. In: TRAJBER, Raquel; MANZOCHI, Lúcia Helena (org.). **Avaliando a Educação Ambiental no Brasil: materiais impressos**. São Paulo: Gaia, 1998. p. 77-119.

CARVALHO, Luiz Marcelo; CAVALARI, Rosa Maria Feiteiro; SILVA, Dayane dos Santos. Ambientalização nas instituições de ensino superior: as teses e dissertações em Educação Ambiental desenvolvidas

no Brasil. In: GUERRA, Antônio Fernando Silveira (org.). **Ambientalização e sustentabilidade nas universidades**: subsídios, reflexões e aprendizagens. Itajaí: Editora da Univali, 2015. p. 47-63.

CHAUÍ, Marilena. **Escritos sobre a universidade**. São Paulo: Editora UNESP, 2001.

DUCROT, Oswald. **O dizer e o dito**. Campinas: Pontes, 1987.

GONZÁLEZ-GAUDIANO, Edgar J.; MEIRA-CARTEA, Pablo Á.; MARTÍNEZ-FERNÁNDEZ, Cynthia N. Sustentabilidad y Universidad: retos, ritos y posibles rutas. **Revista de la Educación Superior**, Ciudad de México, v. 44, n.175, p. 69-93, 2015. ISSN: 0185-2760

GUERRA, Antonio Fernando Silveira; FIGUEIREDO, Mara Lúcia; ORSI, Raquel Fabiane Mafra; STEUCK, Eliane Renata; CARLETTO, Denise Lemke; DA SILVA, Marcia Pereira; LUNA, José Marcelo Freitas de. A ambientalização na Educação Superior: trajetória e perspectivas. In: GUERRA, Antonio Fernando Silveira (org.). **Ambientalização e sustentabilidade nas universidades**: subsídios, reflexões e aprendizagens. Itajaí: Editora da Univali, 2015. p. 11-33. Available at: [https://www.researchgate.net/publication/282505133\\_Ambientizacao\\_e\\_sustentabilidade\\_nas\\_universidades\\_subsidios\\_reflexoes\\_e\\_aprendizagens](https://www.researchgate.net/publication/282505133_Ambientizacao_e_sustentabilidade_nas_universidades_subsidios_reflexoes_e_aprendizagens). Access on: June 09, 2023.

JUNYENT I PUBILL, Mercè; GELI DE CIURANA, Anna Maria; ARBAT BAU, Eva. Características de la ambientalización curricular: modelo CES. In: JUNYENT I PUBILL, Mercè; GELI DE CIURANA, Anna Maria; ARBAT BAU, Eva (orgs.). **Ambientalización Curricular de los Estudios Superiores**: Proceso de caracterización de la Ambientalización Curricular de los Estudios Superiores. v. 2. Girona: Red Aces, 2003. p. 15-32.

LEFF, Enrique. **Epistemologia Ambiental**. 5. ed. São Paulo: Cortez, 2010a.

LEFF, Enrique. **Discursos sustentáveis**. São Paulo: Cortez, 2010b.

LENOIR, Yves. Três interpretações da perspectiva interdisciplinar em educação em função de três tradições culturais distintas. **Revista E-Curriculum**, São Paulo, v. 1, n. 1, p. 1-25, 2005. Available at: <https://revistas.pucsp.br/index.php/curriculum/article/view/3109/2049>. Accessed on: June 7, 2023.

MARCOMIN, Fátima Elizabeti; SILVA, Adriano Dias Vieira da. A sustentabilidade no Ensino Superior brasileiro: Alguns elementos a partir da prática de Educação Ambiental na Universidade. **CONTRAPONTO**, v. 9, n. 2, p. 104-117, maio/ago. 2009.

MEGID NETO, Jorge; CARVALHO, Luiz Marcelo. Pesquisas de estado da arte: fundamentos, características e percursos metodológicos. In: GUERRERO PINO, Germán; ESCHENHAGEN, María Luisa; VÉLEZ CUARTAS, Gabriel; MALDONADO, Carlos (eds.). **Construcción de problemas de investigación**: diálogos entre el interior y el exterior. Bogotá: Universidad Pontificia Bolivariana; Medellín: Universidad de Antioquia, 2018. p. 97-113.

NASCIMENTO, Erivaldo Pereira do. A polifonia nos gêneros acadêmicos e formulaicos: a construção de sentidos a partir da evocação da palavra alheia. **Letras de Hoje**, Porto Alegre, v. 50, n. 3, p. 342-351, jul/set. 2015. Available at: <https://revistaseletronicas.pucrs.br/ojs/index.php/fale/article/view/19385/13804>. Accessed on: June 7, 2023.

PITANGA, Angelo Francklin. **A Inserção das Questões Ambientais no curso de Licenciatura em Química da Universidade Federal de Sergipe**. 2015. 200 f. Thesis (Doctorate in Education) – Universidade Federal de Sergipe, São Cristóvão, 2015.

SANTOS, Boaventura de Sousa. Para uma sociologia das ausências e uma sociologia das emergências. **Revista Crítica de Ciências Sociais**, n. 63, Universidade de Coimbra, 2002.

SILVA, Dayane dos Santos. *Ambientalização nas Instituições de Ensino Superior: um estudo sobre teses e dissertações em Educação Ambiental no Brasil (1981-2018)*. 2021. 146 f. Thesis (Doctorate in Education) – Universidade Estadual Paulista “Júlio de Mesquita Filho”, Rio Claro, 2021.

VIEIRA, Marisa Sartori. **Ambientalização universitária: o olhar dos estudantes da UFSCar para as questões ambientais**. 2015. 136 f. Dissertation (Master’s Degree in Education) – Universidade Federal de São Carlos, São Carlos, 2015.

**How to cite this article:** SILVA, Dayane Santos; CAVALARI, Rosa Maria Feiteiro. Greening higher education institutions: a polyphonic analysis of academic production in environmental education. **Revista Brasileira de Educação**, v. 30, e300054, 2025. <https://doi.org/10.1590/S1413-24782025300055>

**Conflicts of interest:** The authors declare they don’t have any commercial or associative interest that represents conflict of interests in relation to the manuscript.

**Funding:** This specific research was not directly funded; however, one of the authors was a scholarship holder of the graduate program, and the project to which the research was linked received financial support from the Coordination for the Improvement of Higher Education Personnel (CAPES), Funding Code 001.

**Authors’ contributions:** Conceptualization, Investigation, Methodology, Writing- Original Draft, Writing – Review & Editing: Silva, D.S. Conceptualization, Methodology, Supervision, Writing – Original Draft, Writing – Review & Editing: Cavalari, R.M.F.

**Data availability statement:** Research data are available on the Fracalanza Platform (State-of-Art Project for Environmental Education Research in Brazil-EArte) (<https://www.earte.net/teses/>).

## ABOUT THE AUTHORS

DAYANE DOS SANTOS SILVA holds a PhD in education from the Universidade Estadual Paulista Júlio de Mesquita Filho (UNESP/Rio Claro). She is an assistant professor at the Universidade Regional do Cariri (URCA).

ROSA MARIA FEITEIRO CAVALARI holds a PhD in education from Universidade de São Paulo (USP). She is a professor in the Department of Education at the Universidade Estadual Paulista Júlio de Mesquita Filho (UNESP/Rio Claro).

Received on July 3, 2023

Revised on April 10, 2024

Approved on May 29, 2024

Editor/a responsável: Salomão Antônio Mufarrej Hage  <http://orcid.org/0000-0001-7801-0696>

