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CURRICULAR ENVIRONMENTALIZATION IN HIGHER EDUCATION: THE BRAZILIAN INTERPRETATION OF SCENARIOS UNDER THE LIGHT OF COMPLEX THINKING

RESUMO

The curricular environmentalization presents itself as a viability for the formation of critical and co-responsible subjects with the (re)construction of a better world. The methodological procedures used in this article were the qualitative approach and the Complex Hermeneutic-Phenomenological Approach (AHFC) and made it possible to understand that, in Brazil, the experiences related to curricular environmentalization point to a scenario in which attempts are made to evidence the environmental education in Higher Education, however, despite the successful attempts, there is still much to be considered. This interpretation is due to the analysis of the state of knowledge of the scientific productions about the theme in question and the possibilities for its implementation are focused in actions based on the environmental dimension of the curriculum, or on thematic and punctual actions.

Palavras-chave: Curricular Environmentalization. Higher Education. Complex Thinking.

AMBIENTALIZAÇÃO CURRICULAR NO ENSINO SUPERIOR: INTERPRETAÇÕES DO CENÁRIO BRASILEIRO À LUZ DO PENSAMENTO COMPLEXO

ABSTRACT

A ambientalização curricular apresenta-se como uma viabilidade para a formação de sujeitos críticos e corresponsáveis pela (re)construção de um mundo melhor. Os procedimentos metodológicos utilizados neste artigo foram a abordagem qualitativa e a Abordagem Hermenêutica-Fenomenológica Complexa (AHFC) e possibilitaram entender que, no Brasil, as experiências relacionadas à ambientalização curricular apontam para um cenário em que tentativas são feitas para evidenciar a educação ambiental no Ensino Superior; no entanto, apesar das tentativas bem-sucedidas, ainda há muito a ser refletido. Essa interpretação se deve à análise do estado de conhecimento das produções científicas sobre o tema em questão e às possibilidades de sua implementação, que se baseiam em ações baseadas na dimensão ambiental do currículo ou em ações temáticas e pontuais.

Keywords: Ambientalização Curricular. Ensino Superior. Pensamento Complexo.

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I WRITING SCRIPTURE

Amidst the scenery which relates itself to the social environmental issue which has affected the environment and its interrelations in a worldwide dimension, it is relevant to understand how the environmental discussions are being inserted in Higher Education, as the way people will understand the world and will relate themselves with it in their professional actions is a preponderant step in this formative phase that may corroborate or promote new interpretations on the information, experiences and knowledge about the environment which preceded this phase.

According to Araujo (2004), the university, as a professional transforming space, cannot be silent to the need of bringing the social environmental issue to the core of discussions about the administrative, relational and curricular areas which compose the functions of Higher Education, encompassing, also, the triad teaching-research-extension, because, beyond being laid down by the National Policy on Environmental Education (Política Nacional de Educação Ambiental - Law nº 9795/99), in all levels of education, the environmental dimension of education, as states Trein (2012), entails “expressing the political, social and historical character which sets the relationship human beings establish with nature mediated by the work” (p. 307, our translation).

In the middle of all this, the university is an institution responsible to promote the professional formation of the individuals and, in this condition, to foster thinking and worldviews related to the way the individuals will understand or comprehend the environment they live in, through the *modus vivendi* and *modus operandi* around the professional relationships. Then, if the formative process could be oriented by the environmental scope of education, the relationship between human beings and nature after the university could be developed prioritizing sustainability, not just on the working relationships, but in the problematization on reality, values, attitude and behavior - the way we behave ourselves in these world (LOUREIRO, 2012).

In this direction, it is fundamental to think the university and the formation promoted by this institution – which is a *locus* of (re)structuring of the relationships between individuals and environment mediated by the work, which started in an unsustainable way at the elementary education – in an environmental perspective beyond curricular proposals, but, especially, from understanding that the insertion of a formative dimension, which, among other competencies, brings the capacity to promote new attitudinal significations in the subjects and in the communities which directly influence the component relationships that balance the functioning and existence of the environment, which can be dubbed as curricular environmentalization (GUERRA, et al., 2017).

Keeping this in mind, the present writing has the aim of ponder on the curricular environmentalization, explaining the situation in which it finds itself in the current Brazilian scenery of Higher

Education, through the diagnosis and interpretation of the knowledge state of scientific productions on the curricular environmentalization in Brazil and on reflections about the possibilities for its implementation in higher education. Consonant to that purpose, this paper is substantiated on the following theoretical approaches: Complex Thinking, of Edgar Morin (1990, 1999, 2000); Critical Theory of Curricula and Critical Perspective of Environmental Education.

2 CONVERGENCES BETWEEN COMPLEX THINKING AND CURRICULAR ENVIRONMENTALIZATION

According to Morin (1990), complex thinking is a world comprehension viability which seeks to break with the traditional newtonian-cartesian paradigm of knowledge production which is linear, fragmented, reductionist and hyper specialized, which fundamentals itself in the polarization of results which by their turn are derived from variables that lies in the scope of control and measurement of the researched events.

To the author, who consider this paradigm as a simpler one, this way to understand the world is just a face, a meaning of thinking which is taken as the truth in a logic structure seeking to own reality, but which is multi faced and polysemic, because, as in a prism possessing many edges, thinking cannot be seen just from the researcher's angle and conceived as an absolute truth. It needs to be understood under all the angles that are permeating the object/event/phenomenon, including the external angles, this is, the elements around and relating with what is being researched, influencing in the meanings of the results (MORIN, 1990).

Consonant to the premises of Complex Thinking, the world might be understood as a system constituted by phenomena in which the elements are intermingled in an inextricable way into the environment (MORIN, 1990, 1999). In this way, the reality that is understood in the newtonian-cartesian paradigm, is disjunctively and mechanically understood as it is observed, analyzed and synthesized, is comprehended as a representation or a metaphor on the perspective of Complexity, as the phenomena experienced translates the reality from subject to subject parting from the view they have about the world.

In this sense, there is a link between Edgar Morin's thoughts and the postulate of Deleuze and Guatarri (1995) which asseverate that the world, understood as a system, is perceived in a rhizomatic way, presenting itself to the subject as an open space, an entanglement of free and nomadic thoughts that surpasses the structures (fragmentations) imposed by the systems (institutions) of which we are part of, allowing the emergency of multiple significances and senses of the phenomena which are intrinsic and inseparable.

Reported to the educational universe, the Complex Thinking and the rhizomatic conception contribute to a way of thinking the educational system and building the knowledge which goes beyond the compartmentalization and hyper specialization, proposing connections and reconnections of the cognitive schemes in a cyclical movement that allows the subject to understand the world as an immense interrelated system that is, by own essence, transversal and composed by decompartmentalized perceptions that involves, beyond the knowledge, the representations of each individual, allowing the formation of participants, interpreters, and world transformers (SOUZA, 2012).

In the educational curriculum, this proposition may be translated by means of the curricular environmentalization, a proposition born in 2000, in the first meeting of Rede de Ambientalização Curricular do Ensino Superior (Rede ACES) [the network for curricular environmentalization in higher education – network ACES], composed by six European universities and five from Latin America, having as scope the reorientation of Higher Education towards the sustainability started on the realization of diagnosis about the universities' current situation and the projection of curricular intervention methodologies.

In this occasion, the following principles were defined to the referred reorientation: 1) Commitment to the transformation of society-nature relations; 2) Complexity; 3) Flexibility and curricular permeability; 4) Contextualization local↔global↔local; 5) Participation of the subject in knowledge building; 6) Consideration to people's cognitive and affective specificities; 7) Coherence between theory and practice; 8) Orientation of alternative formative scenarios; 9) Methodological adequacy; and 10) Proposition of spaces for reflection and democratic participation during the formative years (JUNYENT; GELI; ARBAT, 2013).

We highlight that the educational curriculum, in the context, is understood as territory of struggle and power, as there is a fight for the reproduction of an ideology, be it hegemonic or anti-hegemonic, considering that it is a potential instrument to persuade about the naturalization of an ideological hegemony in particular, which asserts itself as the only possible way of survival and development of the consumption-driven society (APPLE, 2019). Therefore, the curriculum uses, tacitly, as a method, the social, political and cultural correlation of forces that directly focus on the representation about the environment pertaining to the subjects and about the subjects' relations with the same environment.

In the Brazilian scenario, the prelude of curricular environmentalization was instituted in Brazil's southern and southeastern regions before the comprehension that the universities are sustainable educational spaces from the management till the subjects formation, circumscribing since the curricular organization to the didactic material, defining as maxim for the process the fostering of citizenship to be incorporated into and by the community (GUERRA, et al., 2017). To this purpose, there is the necessity to insert in the curriculum, beyond the explained principles, also the values, attitudes and practices relative

to sustainability, as well as to transform the environmentalization into an institutional policy, which might include the establishment of partnerships.

In the way of this concept, Kitzmann and Asmus (2012) argue that the curricular environmentalization consists in the elaboration of innovative and sustainable improvements which are capable of resignifying the structures, the contents and the methodologies which encompass the higher education formation, aiming at inserting the environmental interdisciplinary dimension in the educational curricula recommended by the National Policy on Environmental Education – PNEA (BRASIL, 1999). In conformity with Araújo (2004), “The environmental dimension of education must approach the questions referring to the environment as a whole, in its ecological, political, economic, social and cultural aspects, etc.” (p. 37, our translation).

Under the light of Complex Thinking, the environment is conceived in a systemic vision in which all human beings, the society, the environment, the cosmos and all the elements which make part of this huge system are interrelated, interfere and suffer from the interferences of phenomena derived from factors like economy, politics, culture, among others (MORIN, 1990).

This thought leads to the principle that the “whole is more than the sum of the parts” (MORIN, 1990, p. 77, our translation) because, in a system, from the atom up to the star’s composition, from the tiniest of bacteria up to the human being composition, it is the organicity presented in the systemic rhizome the mainstay to the isolated parts and they cannot live apart from the system that is the known world represented by us.

Through this comprehension, methodologically, it is needed to pay attention not to fall into what Mauro Guimarães (2012) dubs as paradigmatic trap, which means the “world comprehension molded by the hegemonic rationality” (p. 125, our translation) that generates practices that maintain the *status quo* and the environmental conservatism in the political sense. Metaphorically, it means rowing against the river current, which flows into the consumption-driven society’s hegemonic thinking.

It is the perception that the paradigm which elevates the human being above the environment cannot be reproduced by the pedagogic routines perpetuating the logic of $1 + 1 = 2$ (the whole equals the sum of the parts), but getting over it, and noticing that $1 \text{ with } 1 > 2$ (the whole surpasses the sum of the parts), because, in the first adage we have a mathematical equation where there is only one irrefutable result, while the second one, there is a polysemic conjunctive expression from the subjects’ world representations.

That said, we have that, under the aegis of Complex Thinking, the curricular environmentalization is a proposition to bring about the formation of critical, conscious subjects in Higher Education, turning them into an acting and reacting element inserted in the environment, being capable of sustainable attitudes in their professional activities, these actions must also be extended to other areas of life by means of

attributing new significance to the curriculum and the very organicity of public policy guided universities which intend to insert the environmental dimension inside the educative process in Higher Education.

3 METHODOLOGICAL PROCEDURES

This paper is based on the precepts of qualitative research, which aims to investigate conditions to new views, perceptions, interpretations and comprehension about the challenges and possibilities that encircles the objects of study. According to Chizzotti (2003), the qualitative research allows the researcher to, through the paradigmatic and methodological complexity; find the senses for the research and for the object, as well as interpreting the senses they carry, surpassing, then, the pseudo neutrality and the hyper specialization that, for a long time, were postulated by the scientific researches.

In this perspective, analytical corpus construction was accomplished through the survey of productions enlisted in the Brazilian Digital Library (BDL) 'Biblioteca Digital Brasileira' (BDB) of Theses and Dissertations and papers published in national scientific journals, between 2014 – 2018, with the qualification for the quadrennium 2013-2016, related to the topic at hand. The data were obtained by performing a Boolean search on the referred platform considering the expression "curricular environmentalization" as a keyword to be searched for in the title of the productions deposited in this repository.

From this survey 22 scientific productions were identified which corresponded to the cited criteria and have brought in their title the expression 'curricular environmentalization', among them 11 scientific papers, 10 dissertations and 1 thesis were verified. Two of these papers were dissertation clippings, and, for this reason, were not computed, as the original works were the material considered for data interpretation, with a total of 20 texts.

Data interpretation emerging from such scientific productions was based in the complex hermeneutic phenomenological approach, a methodological proposal based in the principles of hermeneutics, phenomenology and complex thinking which consists in, textually, "phenomenologically describe and hermeneutically interpret, a phenomenon of human experience" (FREIRE, 2017, p. 178, emphasis in the original, our translation) under the light of Complex Thinking which is inseparable from the interpretive process because, data are one and multiple at the same time, "this indicates that the part is in the whole, as the whole is in the part" (idem, p. 182, our translation), touching, in this way, by the principle *unitas multiplex* which brings the idea that the whole is much more than the parts and that reality needs to be comprehended as this whole (unity), that is constituted in its multiplicity (MORIN, 1999).

Beyond that, it also consists in interpreting data from texts which translates experiences through validation cycles (reinterpretations of the same text) which allows the funneling of themes emerging from

them until it is possible to notice which of them bring about the interpretive experience essence that makes it possible to understand the interpretation, as asserts Freire (2017).

Based in this proposal, the themes which emerged from the scientific productions listed on date table I were the following: Dimension (11 occurrences), Theme (5 occurrences) and Discipline (4 occurrences). This thematization, by its turn, stems from nine documental researches, eight case studies, one descriptive research, one research action and one theoretical essay that make up the analytical and interpretive corpus of this work.

From Araújo (2004) and Guerra & Figueiredo (2014) studies and from the methodological proposal of Freire (2017), we cite as dimension, the observance of curricula that insert the environmental dimension of education in the course's curricular plans, seeking with this, to reorganize the whole institutional structure at the tripod teaching-research-extension, passing through managerial, curricular and attitudinal actions, taking Sustainability as reference point; as thematic, the observance of the insertion of environmental themes in syllabi and projects of research and extension projects, without observance of curricular and organizational restructuring of the institutions; and as disciplinarization, the observance of the insertion of disciplines in the curricula of the courses without observing other institutional changes.

4 BRAZILIAN SCENERY OF HIGHER EDUCATION CURRICULAR ENVIRONMENTALIZATION

According to a survey made by Guerra and Figueiredo (2014) and by Guerra et al. (2017), 14 Higher Education Institutions (Instituições de Ensino Superior – IES) present themselves as being curricular environmentalized in their Institutional Development Projects (Projeto de Desenvolvimento Institucional – PDI), nine of them being located at the Southern Region (Região Sul) (8 in the State of Santa Catarina and 1 in the State of Rio Grande do Sul); four in Southeastern Region (Região Sudeste) (3 in the State of São Paulo and 1 in the State of Minas Gerais) and one in Northern Region (Região Norte) (in the State of Rondônia).

Considerations taken by the cited survey emerge from the comprehension of curricular environmentalization as an education dimension under the view of principles proposed by Rede ACES and by critical environmental education, unveiling, then, that the Southern and Southeastern regions are the most advanced concerning to the proposition of an effective curricular environmentalization, delineated as an universities' priorities to the offered education programs which are based on the promotion of an education which can produce sustainability by means of elements that are beyond their own insertion into themes and disciplines offered by the courses.

The survey made by the present paper corroborates with the results pointed out by the studies of Guerra and Figueiredo (2014) and Guerra et al. (2017), at the same time it unveils data, which point to possibilities of new interpretations on the environmentalization of curricula in the current Brazilian scenery. The Date Table 01 lists the studies used as sources by the present study.

Date Table 1 - State of the Art about Curricular Environmentalization in Brazil

Title in Portuguese and English	Year	Type
1. O Processo de Ambientação Curricular na Educação Superior: Uma proposta metodológica The Process of Curricular Environmentalization in Higher Education: a Methodological Proposition	2018	Paper
2. Um Estudo da Questão sobre Ambientação Curricular na Educação Superior brasileira: práticas, desafios e potencialidades A Study about the Question of Curricular Environmentalization in Brazilian Higher Education: practices, challenges and potential	2018	Paper
3. Concepções sobre Ambientação Curricular: O desafio do pensamento sistêmico Conceptions about Curricular Environmentalization: the Challenge of Systemic Thinking	2018	Paper
4. Ambientação do currículo no Brasil: Levantamento de teses e dissertações entre 2011 e 2014 Curricular Environmentalization in Brazil: Survey of Theses and Dissertations – 2011-2014	2017	Paper
5. Ambientação Curricular na formação inicial de professores de Ciência da Natureza Curricular Environmentalization in Nature Sciences teacher's initial training	2017	Dissertation
6. Ambientação Curricular na formação inicial em Educação Física Curricular Environmentalization in Physical Education initial training	2017	Dissertation
7. Educação para inteireza e Ambientação Curricular: Diálogos necessários sobre matrizes curriculares dos cursos de graduação Education for the wholeness and Curricular Environmentalization: Necessary dialogues about undergraduate courses' curricular matrices	2016	Paper
8. Ambientação Curricular em Cursos de Ciências Biológicas: O caso da Universidade Federal de Campina Grande, Paraíba Curricular Environmentalization in Biology Courses: the case of Federal University of Campina Grande, Paraíba	2016	Dissertation
9. Ambientação Curricular na Educação Infantil: Um diálogo possível a partir das relações com a natureza, o afeto e o cuidado Curricular Environmentalization at kindergarten education: a possible dialogue through the relationship with nature, affection and care.	2016	Dissertation
10. Ambientação e Sustentabilidade nas universidades em debate A debate about Environmentalization and Sustainability at the Universities	2015	Paper
11. Ambientação e Sustentabilidade no Centro Universitário de Brusque: Um processo em construção Environmentalization and sustainability at University Center of Brusque: a process under construction	2015	Paper
12. Ambientação Curricular na Educação Superior: Um estudo na Pontifícia Universidade Católica do Rio Grande do Sul Curricular Environmentalization in Higher Education: A study at the Pontifical Catholic University of Rio Grande do Sul	2015	Dissertation
13. Formação de professores e sustentabilidade: Um estudo de ambientação curricular nos cursos de licenciatura da Unioeste Teacher's formation and sustainability: a study on the Curricular Environmentalization in teaching courses at Unioeste	2015	Dissertation
14. Ambientação Curricular em cursos de Pedagogia de instituições privadas do município de São Paulo: Desafios e proposições	2015	Dissertation

Curricular Environmentalization in Pedagogy Courses of private institutions of São Paulo municipality: Challenges and propositions		
15. Ambientalização Curricular na Educação Superior: desafios e perspectivas Curricular Environmentalization in Higher Education: challenges and perspectives	2014	Paper
16. A temática ambiental e a sustentabilidade nos cursos de graduação da UNIVALI: Caminhos para a Ambientalização Curricular na Universidade The Environmental Thematic and the sustainability in undergraduate courses of UNIVALI: Paths towards the Curricular Environmentalization at University	2014	Paper
17. Ambientalização Curricular na educação superior: Tendências reveladas pela pesquisa acadêmica brasileira (1987-2009) Curricular Environmentalization in Higher Education: Trends revealed by Brazilian academic research (1987-2009)	2014	Thesis
18. A temática ambiental no curso de graduação de Ciências Contábeis: um enfoque à Ambientalização Curricular The Environmental thematic in the Accounting undergraduate course: a focus on Curricular Environmentalization	2014	Dissertation
19. A Ambientalização Curricular no curso de formação de professores de Ciências e Biologia na percepção dos licenciandos Curricular Environmentalization in the course of Sciences and Biology Teacher's formation by the undergraduate's view	2014	Dissertation
20. Tecendo reflexões sobre a Ambientalização Curricular na formação de professores de Ciências/Biologia Making reflections on the Curricular Environmentalization in Sciences/Biology Teacher's formation	2014	Dissertation

Source: Brazilian Digital Library - Biblioteca Digital Brasileira de Teses e Dissertações and Google Acadêmico. (BR)

From the Complex Hermeneutic-Phenomenological approach were identified inside the read texts in the excerpts related to the means about how the Curricular Environmentalization is signified inside those referred materials and that were listed to the thematization phase. The referred thematization derive from the methodological proposition of Freire (2017) in which, at the beginning, were identified as sense units present in the text (excerpts related to the researched phenomenon) which have passed through the phase of refinement (funneling of sense units) till reaching the theme (researcher resignifies data to the compilation of sense units).

So, after the thematization of the cited texts in Date Table 1, it was verified the occurrence of curricular environmentalization as an educational dimension in texts 1, 2, 3, 5, 6, 9, 10, 11, 15, 16 and 17; as thematic in texts 4, 13, 14, 19 and 20 and as discipline in texts 7, 8, 12, and 18. The considered Sense Units for the emergence of these three themes are related in date table 02.

Date Table 2 - Signification of curricular environmentalization in the analyzed sources

Sense Units	Emerging Theme
Systemic learning approach; Systemic formation; Critical-reflective training; Integral training; IES (Higher education institutions) concept changes	Curricular environmentalization as an educational dimension
Discipline; Curricular grid; Curricular structure; Curricular element insertion	Curricular environmentalization as disciplinarization
Theme; Environmental thematic; Theme insertion in curricula; Project development with the Environmental thematic	Curricular environmentalization as thematic

Source: self-elaboration according to texts in Date Table 01.

Analysis of texts has allowed the comprehension that the experiences related to curricular environmentalization in Brazil are perceived and put in effect through distinct ways into each of the different institutions that had presented themselves as founded in this environmental proposition. In some, as evidenced in sources 11, 12, 14 and 16 of date table 01, it appears that there were curricular changes that, beyond the syllabi and disciplinary structure, touched also the way of managing which started to be taught about under the prism of sustainability.

However, are expressive the attempts to environmentalize the curricula that limit themselves to the insertion of disciplines focusing on the environment, sustainability, sustainable development and environmental education in the Pedagogical Projects of Courses (PPC), especially those from the undergraduate programs, and that present themselves to the educational regulatory organs and to the society as environmentalized institutions, as it is possible to identify in the sources 5, 6, 7, 8, 9, 13, 18, 19 and 20 that are displayed in date table 01. The evidence of this verification is presented in the analyzed texts, as it is possible to identify in the excerpt:

In this sense, in view of the preliminary study carried out on the subjects' menus, we can consider that Curricular Environmentalization still based on solutions imposed by laws is still not very significant in the curriculum documents of the HEIs. Of 33 undergraduate courses offered, 18 contain evidence of environmentalization. The diffusion of a new commitment to the environment depends on individual rules of conduct, it is only necessary for the formation of a specific field of environmental education, and with the reorganization of menus, subjects, courses and training of environmental educators (Source 7, 2016, p. 69, our translation).

Thus, it seems there has been a misunderstanding about curricular environmentalization and its assumptions on the part of Higher Education institutions analyzed by the authors, given the reductionist tendency present in the curricular proposals that are presented as environmentalized, but, in practice, they take place as disciplinarization of environmental education and / or reduction to the insertion of contents or themes in curricular components.

The texts 11, 12, 14 e 16 present signification to curricular environmentalization as a dimension to the time when point to educational perspectives which seek to reorient the conception of university under a humanizing prism of personal relationships, strengthener of cooperative work and that is able to resignify the social roles of the sectors that compose the institutions, attempting to face the fragmenting organizational form which structures the universities, as well as facing the simpler paradigm which archives contents and blocks the deep comprehension of the environment and the socio-environmental relationships which is systemic, according to Morin (1990). It is possible to verify this proposition in the excerpt:

In conclusion, the results of the research and the findings of interest in the discussion of the theme, indicate that Univali is experiencing a good time for dialogue between institutional and administrative managers, the Rectory, Pro-Rectories of Teaching (ProEn) and Research, Graduate Studies, Extension and Culture - ProPEEC coordination of courses and the teaching staff, in order to expand the spaces for discussion about the present diagnosis, and so that the environmentalization process can continue at UNIVALI, being able to transform itself into an institutional policy, that the dimensions of sustainability can be strengthened in the Institutional Development Plan - PDI of the university (Source 16, 2014, p. 132, our translation).

The excerpt reveals an example of a Higher Education institution in which curricular environmentalization is understood in accordance to the principles of the ACES Network, presenting itself as proposals and actions that go beyond the curricular components, passing through the management and administration of the institutions, contributing, thus, for the transgression of the simplifying paradigm for Complexity.

In the proposition about curricular environmentalization comprehended as a dimension available in date table 02, environmental education is figured out as a dimension of the educational process, as it “must approach the questions referring to the environment as a whole, in its ecologic, political, economic, social, cultural aspects and so forth” (ARAUJO, 2004, p. 37, our translation) and, as such, transversally runs through the curriculum, and it must be implicit and explicitly present in all the elements that composes the curriculum, at all educational levels. Therefore, it intends to search for principles and projections of learning which envisage citizens’ formation, not only for life in the society of knowledge, but also towards a planetary citizenship, which strives for the formation of integral individuals for a sustainable life in a balanced environment.

In this direction, the curriculum is understood as a struggle and power territory, as there is a fight for the reproduction of an ideology, be it hegemonic or anti-hegemonic, considering that it is a potential instrument for persuasion about the naturalization of an ideological hegemony in particular, which asserts itself as the only possible way of survival and development of the consumption-driven society (APPLE, 2019). The curriculum is, therefore, a territory of struggle for the reproduction of an ideology and social structures that uses, tacitly, as method, the correlation of social, political and cultural forces that directly

focuses the subjects' representation on the environment and the relations of the subjects with the environment.

Under this vision, the curricular environmentalization contributes to the fostering of social environmental transformations, grounded in critical education's epistemological conceptions, which have as its main priority the subject's emancipation (LOUREIRO, 2012); in a holistic conception of the environment, which considers the infinite interactions among the diverse living and non-living components of a complex system, as is that in what we live in (LEFF, 2001) and in the principles of reflexivity in teaching and in the thought that the whole is greater than the sum of the parts (MORIN, 1990). According to it, the curricular environmentalization understood as a dimension goes in the way of Complex Thinking, since it understands that the curriculum of a course is not limited to its curricular organization, but is an element of the formation engendered to all the relations that coexist in the institutional space and in the reflections of these relationships in the community and the organicity of these relationships and the formative environment. In the light of Complex Thinking, there is the understanding that knowledge production and formation are not reduced to the reproduction of absolute truths, linear cause and effect relationships, fragmentation, disciplinarization, and hyper specialization in the attempt to simplify knowledge, but are based in the circular relations of phenomena that are infinite and in the inter- and trans- disciplinarity that articulate knowledge (MORIN, 1990).

For Morin (2011), the inter- and trans- disciplinarity provide the opportunity to articulate the dichotomies created by the simplistic paradigm and by the transcendence of binary and exclusionary logic that limit interrelationships, directing formation to the scope of contextualization, since the understanding of the world through Complex Thinking occurs in the relationship between physical, mental and spiritual aspects with the context in an interconnected way.

In this sense, the proposition of curricular environmentalization as a dimension "comprises the historical, social, cultural, economic, ecological aspects and the development of values and attitudes" (ARAUJO, 2004, p. 71, our translation) and provides "the construction of new mentalities through construction of environmental cognizance and knowledge that enable the active participation of members of society towards new paradigms of social justice and environmental quality" (same, p. 60, our translation), enabling the escape of the paradigmatic trap intended by Guimarães (2012).

As disciplinary and thematic condition, curricular environmentalization occurs in a reductionist way, as it is limited to the insertion of disciplines and / or contents and themes to the curricular structure, thus corroborating the perpetuation of the simplistic paradigm, in addition to distancing itself to the PNEA disposition and Complex Thinking propositions, a factor that points out that a considerable part of the HEIs that are proposed as environmentalized tend to fall into the paradigmatic trap, since there is the aim of

promoting awareness and attitudinal changes, however, the action is limited to the reduction of reality and environmental problems (GUIMARÃES, 2012).

Due to the fact that the PNEA allows, but not requires, the creation of subjects in higher education courses, it is noted that many institutions use this openness supported by the legislation to insert (mandatory or optional) subjects related to environment, sustainability, sustainable development and environmental education in teaching and bachelor degree curricula and compartmentalizing the discussions - hanging what Freire (2005) called bank education - and thus asserting themselves as environmentalized.

However, what actually occurs is undervaluation of environmental discussions that become to be seen as attributes or complements of education, thus denying the nature of the educational process that is eminently influenced and guided by the interrelations that constitute the environment. Therefore, the idea of inserting disciplines that envision environmental discussions in the curricula of higher education courses is not disapproved, but their reduction to only disciplinarization', because the disciplines do not prevent the environmental dimension from being present in the other elements that compose the program.

In addition, the understanding of curricular environmentalization as disciplinarization or thematic present in the texts presented in box 01 also implies preservationist and conservationist discussions that reinforce the anthropocentric conception of environment, occurs in a mistaken way, as it contradicts the principles of critical environmental education, which is the tendency that permeates the proposal defined by the ACES Network, and which is guided by the commitment to the formation of individuals able to act in society in order to face the environmental issues and with the perspective of prolonging the life of the planet in dignified and socially just conditions. This is also a commitment of education guided by Complex Thought, as stated by Morin (2011).

The presence of criticality in the curriculum represents the premise of Complex Thinking that is constituted by cosmic, physical, terrestrial and human conditions and understands the human condition as a position of attitudinal transformation involved in this complexity (MORIN, 2011) and this is one of the directions that can guide the implementation of curricular environmentalization in HEIs.

5 POSSIBILITIES FOR CURRICULAR ENVIRONMENTALIZATION IN HIGHER EDUCATION

Facing the discussions held here, the curriculum environmentalization thought for the Higher Education is guided by the principles of Complex Thinking. In this sense, before the reformulation of curriculum structures, institutions need to redefine themselves organizationally under the aegis of sustainability. Therefore, there is the need to break the fragmented way of thinking resulting from the simplistic paradigm that surrounds the individuals who are in charge of university management, because

there is no point in reformulating the documents if the ways of thinking remain the same. Proposals for improvement courses and the creation of projects and research development nuclei that foster discussions about the place of the environment at the University, which, in turn, need to reflect on its place in the environment, indicate the beginning of the process of curricular environmentalization.

As a result of these actions, the contestation of legitimizing elements of domination and power that make the departmental and disciplinary form established as the organizational model of the Brazilian HEIs prevail will manifest. In this way, there is the possibility of subjects perceiving themselves as active agents of the transformation of the *status quo*. As a result of this reflection, awareness and engagement with the confrontation of social reproduction will emerge, thus providing the liberation of the chains that imprison formation in the world-system from the opening of formative horizons that transcend the perpetuation of the system, The curriculum becomes a space for the (re) construction and (re) constitution of a new social symmetry oriented by ethics and the desire to meet the needs of the victims of the world system - the dominated and excluded.

Based on these considerations, the rigid departmentalization structure that hinders the dialogue between multiple areas of knowledge can be revised so that there is an interdisciplinary nucleus composed of members from all areas studying and discussing environmentalization from the perspective of interdisciplinarity. And only after that, would the (re) construction of the curriculum structure of the courses be considered that may even have disciplines related to the environment or environmental education as a way to define a space for deepening and maturing discussions, but without losing sight that environmental issues are a continuous and sine qua non component of that structure.

However, to become it possible, it is necessary that the individuals who materialize the curriculum be willing to understand the complexity of the world and to break the rigidity of compartmentalized formation, re-signifying the pedagogical actions that, besides practices, will translate themselves into in pedagogical praxis that allow the exit from the state of naive consciousness to the critical consciousness of the emancipating individual through the mediation of the relationship between the being and the world (FREIRE, 2005).

Moreover, in accordance with Morin (2011), it must be understood that training is not only mediated by scientific knowledge, because the knowledge and experiences lived by the individuals contribute to the formative construct of beings, passing through the uncertainties and reaching the metamorphoses of interrelationships that transform the earth and human-created systems that are, also, transformed.

6 CONSIDERATIONS

According to above, the proposition of curricular environmentalization is a way of thinking about the environmental dimension of the curriculum with the intention to qualify critical individuals based on the principles of sustainability that is consistent with all the institutional organization, based on interdisciplinarity and in the development of pedagogical actions that can be translated into praxis, having as its final objective the raising of society's commitment to balance, the improvement of the interrelationships that occur in the environment, in order to make it more just and understood in its unimultiplicity, by pedagogical praxis that transcend the paradigmatic pitfalls crystallized in the simplistic paradigm.

In this sense, the curricular environmentalization is a viability of curricular reorientation that brings methodological directions that put the subjects in the condition of agents and transformers of learning, formation and the world, endowed with co-responsibility and the ability to mediate actions that may come to fruition, making it a more ecologically balanced and socially just space, and also mediated by them.

Compliant with it, the curricular environmentalization, as a resignification of the conception of the organization of the university in all its dimensions, it's presented as capable of promoting training centered on criticality and desalination directed to the awakening of consciousness and sensitization for facing a formative paradigm and a construction of knowledge based on anthropocentric, oppressive and alienating conditions regarding the social and environmental problem.

However, the presented data in the researched sources for this study revealed that many propositions of curricular environmentalization have been listed in Brazilian higher education institutions, but, in fact, there are still few that fit the principles of ACES Network, seeking to redefine the university from the perspective of the environmental dimension throughout their organization.

It is still necessary to advance in the transcendence of the paradigmatic trap that pervades reductionist propositions that hang over the disciplinarization and thematization, because these attempts, although proposing reflections on the socio-environmental problematic during the formation process, contribute to the reproduction of the paradigm that is naturalizes inequalities and injustices at the time when it conforms the subjects in an individualistic and demobilizing logic of the confrontation of such a problematic.

Thus, we forward the thought not to a conclusion, but to the hope that curricular environmentalization is possible and, furthermore, it is a way for changes in the understanding of what the training offered by Higher Education means and, consequently, in the reverberation of this training in society.

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