



Environmental Education Studies: an Epistemological and Conceptual Perspective about Environment

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Abstract

This study focuses on the environment concepts in this complexity evident here. As objectives it proposes to raise concepts on the environment in ecological, economic and political aspects (1) categorize the main reasons listed in the perspective of the authors cataloged in this task (2), and analyze the concepts to understand the state of the art of the central approach (3). It is based on the Evolutionary Theory by Lamarck and Darwin, Economic Development Theory by Schumpeter and the Ecodevelopment Theory by Sachs. The focus is the natural and the artificial environment. It was adopted the method of content analysis, it was categorized the ecological and the economic discourse by comparing the conceptual elements obtained in authors and treaties in the face of possible patterns of regularity (a); risks and threat (b), and solutions to environmental dilemmas (c), and finally, we seek to clarify how the science will permeate the concepts to the mitigation required in order to satisfy the dynamic equilibrium in the ecological and economic dimensions of policy applicability. This work is a contribution to those interested in environmental issues.

1. Presentation, introduction and objectives

The coexistence of the man, society and environment imposes reflection. His interference in the search a collective subsistence has brought damaging environmental consequences. This task aims to conduct a survey on the concept of environment. It will have an epistemological characteristic on track to reach groundings for the interpretation of this concept. For this, it is proposed a general objective and three specific objectives. As a general goal, we aim to realize a theoretical and conceptual study of the environment; to achieve the expected results it is proposed as specific goals raise concepts about the environment in the ecological, economic and political aspects (1); categorize the main groundings listed according to authors cataloged in this study (2), and analyze the concepts to understand the state of the art on the topic environment (3).

2. Theoretical and conceptual review

This topic presents three fundamental theoretical sources for the proposed work. It will be addressed the Evolutionary Theory, the Schumpeterian Theory and the Ecodevelopment Theory.

2.1 Evolutionary Theory

The evolutionary theory in Pedro Filho [2] is questioned the dynamic and the changeable process of adaptation of man to the environment, considering the ages, cycles and epochs, bringing pollution, rural depopulation and an uncontrolled growth in cities. The participatory society yearns for the individual and institutional responsibility and for the sustainable development.



2.2 Schumpeterian Theory

The neoclassical Joseph A. Schumpeter sought to explain the variation and the economic development of the capitalist system. According to Moricochi & Gonçalves [1], the Economic Theory of Schumpeter deals with the process of material and immaterial production as a combination of forces. They state that exist the process economic progress fueled by the creative destruction. It is questioned that the progress and performance of the Circular Flow in this theory will be able to reinstate the factors that result in a dynamic balance of the socio-environmental relationship.

2.3 Ecodevelopment Theory

According to Tayra, quoted in Pedro Filho [2], the concept of eco-development conceives a symbiotic relationship between the development and the nature, and should be designed based on three criteria: economic efficiency, social equity and ecological perspective. Sachs [3] states that the development is a style of development, and it has to be practical, constituting a form of action, respecting the particularities of each ecoregion, taking into account the ecological and the cultural.

3. Methodological treatment

In this study will be applied the comparative procedure proposed by Medeiros [5]. To establish the categorization the method of content analysis will be used, following the recommendations in Bardin, treated in Oliveira [6]. The methodological preparation also involved previous procedures of virtual visits to the SCIELO database.

4- Results

From the moment that the environment entered in the global agenda for discussion it became necessary that the various sciences with an emphasis on Ecology, Politics and Economic, passing to the internal dialogue as if in pursuit of its paradigms, and externally, on the epistemological basis in transformation. This survey results in the cognitive interpretation of the state of the art against the object now addressed that is the environment.

4.1 Survey of concepts about the environment in ecological, economic and political aspects.

Appeal Silva Junior & Ferreira [4] made it possible to find the sustainability strategies presented in the scientific production of the ecology and economy in a well updated view. There they established the predominance of conceptual elements. This approach allowed the elaboration of the categorization of conceptual elements in ecological and economic perspective, to be treated in the methodological format proposed in this task.

4.1.1 Consideration of the scientific aspects in the face of the political character of the environment.

In Milaré [7], the definition of the environment, is the set of conditions , laws , influences and physical, chemical and biological interactions, which lets, houses and governs life in all its forms. This author sees the doctrine focusing on legal aspects of the environment, useful not only in the logical interpretation in the causal relationship, but also enhances the understanding on the shaft of the decision-making, because it characterizes the being.

4.1.2 Consideration of the scientific aspects in relation to the ecological character of the environment

A bibliographical survey on Silva Junior & Ferreira [4] indicates that publications with ecological themes incorporate the human element in its context, which leads to the discourse on the concept of



landscape. They clarify that the concept of landscape means a change in the ecological discourse, which incorporates the social dimension, and economic-ecological discourse, from which emerge other interests, including those of contingent nature. The perception of the quoted authors about the social environment has set a trend in understanding that the risks and threats are inherent to the processes related to the human and non-human relationship and therefore become chargeable to establish technical procedures combined with economical analysis.

4.1.3 Consideration of Scientific aspects in relation to the economic character

In the analysis of an economic treaty in Silva Junior & Ferreira [4] it is identified that the discourse converges in establishing parameters on sustainability, equalizing consistency, theory and political viability. It is understood that the economic analysis considers this as a construction of scenery; it is the similarity of the understanding of landscape, highlighted in ecological character. It would be a trend to establish techniques for finding solutions to the established paradigms.

4.2 Categorization of the grounds listed according to the authors cataloged in this study.

The discussion about sustainability in academia has gone through several processes of argument about the relationship between the society and the nature. This categorization provides the epistemological debate process, which initially is perceived the discussion centered on specific variables of the paradigms of each academic school. According to Silva Junior & Ferreira [4] ecology comes from the ontological division of the natural and social systems. The first refer to non-human systems such as Planet Earth and all weather changes, weather systems, ecosystems, among others; the social system is that created by humans. Therefore, each system is treated ontologically, that is, in its essence as systems without correlation; and the integration between human and nonhuman is addressed by the ecology. In the second moment it is identified the approach of these systems, and in the third moment, it will be made the prospect insertion of landscape as a convergence of the human factor to the nonhuman; here it will be identified the comparable systemic factors of the components parts and the whole set, including the factor of dynamic equilibrium. In economics, the Catastrophe Theory presented by the ecological science points out the environmental contradictions originated from the industrial society. It seemed plausible that the thinkers explain about the interdependence of systems, aiming to consider, for example, the escalation of the sustainability facing the marketing issues according to Silva Junior & Ferreira [4]. The linear and monocausal processes does not contain elements which involve these variables, they seek, so, explanations that address the multiplicity and complexity of the systems. The categorizations established were based on the studies of Silva Junior & Ferreira [4] and point out three common conceptual elements in the speeches analyzed, namely, the patterns between humanities and nature (1), risk characteristics and situations of vulnerability (2), and search for solutions (3).

4.2.1 Characterization of the patterns of (ir) regularity between humanities and natures

In this process we sought to identify patterns of seizure of the economic and ecological science to environmental issues, how the nature has meaning, relationship and correlation of analyzes of these sciences.

According to the studies of Silva Junior & Ferreira [4], it is possible to state that the kind of discourse conducted between ecological and economic sciences have always been structured according to the social expectations. What can be considered in this study is that, currently, the discourses of the ecological and economics sciences position the human factor. It is as if the postmodern discourses conclude by the association of human to non-human, in a symbiotic necessity between the co-existence of sustainability and integrated development.



4.2.2 Characterization of risks and vulnerability

For redeem the balance of the action in the ecosystem the economic science seeks the theoretical basis for assessing the long-term prospects, mentioning in this task three proposals:

- A) Admit the prospective costs stimulating values on the conditions of efficiency in environmental services, if develop its activities based on the available knowledge (1);
- B) Agrees that the irreversibility that has as a premise the impossibility of returning to the initial state in both economic and ecological aspect (2);
- C) Equate the sustainability of deficits considered in light of the success of the strategy. Overall, the valuation of this deficit stems from the analysis on the sustainability; if this leads to crisis, then it is unsustainable, and in this situation it would be recommended to identify the related problems and build determinants indexes with a minimal resource portion admission to be used for the payment of costs of the environmental liabilities (3).

The risks come from the human activity on the ecosystem. The ecosystem is the set of biotic and abiotic elements and its relationship, interaction and reaction. The human activity such as hunting, deforestation, introduction of non-native species is part of that relationship. However, the indiscipline on the labor activity on the ecosystem has caused pollution, extinction of species of flora and fauna and resource exhaustion. Consider, moreover, the human overpopulation subject to coexist with the elements of the ecosystem which they will seek to meet their needs for food, water, medicine, housing, leisure and others.

An emerging concern is the rebound effect, or the return of an unexpected action in opposition to the stimulus perchance given to the environment. For example, the gains obtained from the energetic efficiency of a hydroelectric become null if the consumption capacity of a society does not absorb the effects of the availability of environmental services offered. Therefore, in modern society the individual is faced at the necessity of a dynamic innovation caused by the incremental technologies. That requires an integrated technological integration that delivers significant changes in the social structure under the discourse of progress.

4.2.3 The search for solutions

Pedro Filho [2] when addressing on environmental management, he emphasizes that every action has an impact to the environment. Therefore, the individual's position should be that of responsible solution establishment through the understanding of the process. And if necessary, find walkways between the established model and sustainable model, as a measure to minimize the impact, inducing an efficient way to harmony in the relationship between the management and the socioenvironmental.

4.3 Analysis of the concepts and the understanding of the state of the art

The Ecology and Economics have performed actions in the search for effective solutions. Silva Junior & Ferreira [4] suggest solutions for the ecological science without excluding the socioenvironmental dilemmas presented by economic science. Thus, it is identified in the solutions the search for operationalization instruments for the effectuations of the practices, creating public policies that support and encourage the effectiveness of the proposals. The question is in the research and planning, integrated to the adaptive management. The realization of the projects is influenced by the market dynamics, environment and technology integrated to processes involving various spheres of political entities in vertical scale; and include a physical space of correlation in a horizontal scale. The range between these two conceptual horizons requires a method for the interventions, in order to harmonize not only the operational functioning but also allowing to evaluate the results reached. The appeal to the method of adaptive management may be an effective tool in achieving the goals, or an efficiency inducer in the application of the scarce resources, human and material involved in the process. This perspective leads proposals to cope with the environmental problems, articulated



through public policies. Predominates a similarity perceived on the characteristics of risks and threats, with low a management of the catastrophic processes originated from the changes incurred.

5. Final considerations

The search for a dynamic balance between the potential economic, ecological and political dimensions is a challenge in the current century. And insert the man in the environment without bringing with it a dichotomy of ecological and economical relationship has been a confrontation in the epistemological dialogue, especially if we consider that the economics seeks to explain the economic systems and the relations of these agents or organizations, and the ecology studies the dynamics of interaction between living things in an ecosystem. It is up to the science to points out how it will permeate the mitigation required. In politics it establishes the role of a government on social and economic issues of public interest, being that in this sphere is contained the space of articulation and implementation of these convergence proposals discussed, linked and desired. This work is a contribution to those who work with environmental relation and may be useful for the construction of public policies and for the development of creators in decision making processes on sustainability issues.

References

- [1] MORICOCI, Luiz; GONÇALVES, José Sidnei. Teoria do Desenvolvimento Econômico de Schumpeter: uma revisão crítica. Informações Econômicas, São Paulo, v. 24, n. 8. Agosto 1994. Available on: <http://pt.scribd.com/doc/55858362/1-Teoria-Schumpeter>
- [2] PEDRO FILHO, Flavio de São. Apostila de Gestão Socioambiental do Programa de Pós Graduação Mestrado em Administração da Universidade Federal de Rondônia. Porto Velho: UNIR, 2013.
- [3] SACHS, Ignacy. Ecodesenvolvimento: crescer sem destruir. São Paulo: Vértice, 1986.
- [4] SILVA JUNIOR, Roberto Donato; FERREIRA Leila da Costa. Sustentabilidade na Era das Conferências Sobre Meio Ambiente e Desenvolvimento – Um Olhar para Ecologia e Economia. Ambiente & Sociedade. São Paulo v. XVI, n. 1. p. 1 -18 jan-mar. 2013 Available on: http://www.scielo.br/scielo.php?script=sci_arttext&pid=s1414-753x20130001000028lang=pt Acesso em 06.8.2013 as 23h13
- [5] MEDEIROS, João Bosco. Redação Científica: a prática de fichamentos, resumos, resenhas. São Paulo: Atlas, 2003.
- [6] OLIVEIRA, Denize Cristina de. Análise de conteúdo temático-categorial: uma proposta de sistematização. Rev. enferm. UERJ, Rio de Janeiro, 2008 out/dez; 16(4):569-76.
- [7] MILARÉ, Édís. Tutela jurisdicional do ambiente (Doutrina). Justitia, São Paulo, 54 (157), jan./mar. 1992. Available on: http://bdjur.stj.gov.br/xmlui/bitstream/handle/2011/23429/tutela_jurisdicional_ambiente.pdf?sequence=1 Acesso: 07.08.2013 – 7h37
- [8] ANDRADE, Daniel Caixeta; ROMEIRO, Ademar Ribeiro. Serviços ecossistêmicos e sua importância para o sistema econômico e o bem-estar humano. Texto para discussão IE/Unicamp. N. 155, fev. 2009. Available on https://www.google.com.br/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CC0QFjAA&url=http%3A%2F%2Fwww.eco.unicamp.br%2Fdocprod%2Fdownarq.php%3Fid%3D1785%26tp%3Da&ei=gCF1UuT3NM_IkAfE1ICQBw&usq=AFQjCNGtYLjC4gxp0GcFdsoxw4GuKv0nbQ&bvm=bv.55819444,d.eW0 Acesso em 02.11.2013 as 12h14