

MENDIVE

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Popular environmental education, methodological conception in favor of a sustainable pedagogy

La educación popular ambiental, concepción metodológica a favor de una pedagogía sustentable


Educação ambiental popular, uma concepção metodológica em favor de uma pedagogia sustentável

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ABSTRACT

Environmental training focused on a participatory educational proposal constitutes the basis for a sustainable pedagogy. The objective of this article is to establish the theoretical-methodological contribution of Popular Environmental Education to environmental training at the Center for

Environmental Research and Services, ECOVIDA. From the empirical methods: documentary analysis, systematization and research-action-participation and as part of this, the techniques: participant observation and discussion groups, the state of training is diagnosed and the need to act on the existing problem: how to improve environmental training in the Environmental Research and Services Center, ECOVIDA for the development of an inclusive environmental worldview in social actors and their management practices? From the pedagogical accumulation of specialists from the center and their contributions to a sustainable pedagogy that advocates for the defense of life, it is possible to systematize and collectively build a participatory methodological conception of Popular Environmental Education, with pedagogical principles and methodological criteria oriented to the transforming act of social actors and their practices. This result contributes to the improvement of ECOVIDA's environmental training and facilitates the incidence of social actors in environmental policy with participatory environmental management practices. It promotes the articulation of community actors and experiences, and intends a dialogue of knowledge and learning, which reinforce a counter hegemonic and integrative environmental worldview to neoliberal paradigm, and shows the innovative character of this educational conception that contributes to a sustainable pedagogy.

Keywords: theoretical-methodological conception; environmental popular education; sustainable pedagogy.

RESUMEN

La formación ambiental enfocada en una propuesta educativa participativa constituye base para una pedagogía sustentable. El presente artículo tiene por objetivo, fundamentar la contribución teórico-metodológica de la Educación Popular Ambiental a la

formación ambiental en el Centro de Investigaciones y Servicios Ambientales, ECOVIDA. A partir de los métodos empíricos: análisis documental, sistematización e investigación-acción-participación y, como parte de este las técnicas observación participante y grupos de discusión, se diagnostica el estado de la formación y se constata la necesidad de actuar sobre la problemática existente: ¿cómo perfeccionar la formación ambiental en el Centro de Investigaciones y Servicios Ambientales, ECOVIDA para el desarrollo de una cosmovisión ambiental integradora en los actores sociales y sus prácticas de gestión? Desde el acumulado pedagógico de especialistas del centro y sus contribuciones a una pedagogía sustentable que aboga por la defensa de la vida, se logra sistematizar y construir, de forma colectiva, una concepción metodológica participativa de Educación Popular Ambiental, con principios pedagógicos y criterios metodológicos orientados al accionar transformador de actores sociales y sus prácticas. Este resultado contribuye al perfeccionamiento de la formación ambiental de ECOVIDA y facilita la incidencia de actores sociales en la política ambiental, con prácticas de gestión ambiental participativas. Promueve articulación de actores y experiencias comunitarias, e intenciona un diálogo de saberes y aprendizajes, que refuerzan una cosmovisión ambiental integradora y contrahegemónica al paradigma neoliberal, y evidencia el carácter innovador de esta concepción educativa que tributa a una pedagogía sustentable.

Palabras clave: concepción teórico-metodológica; educación popular ambiental; pedagogía sustentable.

RESUMO

A educação ambiental focalizada em uma proposta educativa participativa constitui a base para uma pedagogia sustentável. O objetivo deste artigo é apoiar a contribuição teórico-metodológica da Educação Ambiental Popular para a educação ambiental no Centro de Pesquisa e Serviços Ambientais, ECOVIDA. A partir dos métodos empíricos: análise documental, sistematização e pesquisa-ação-participação e como parte disso, as técnicas: grupos de observação e discussão dos participantes, o estado do treinamento é diagnosticado e a necessidade de agir sobre o problema existente é verificada: como melhorar o treinamento ambiental no Centro de Pesquisa e Serviços Ambientais, ECOVIDA para o desenvolvimento de uma visão integrada do mundo ambiental nos atores sociais e suas práticas de gestão? A partir do acúmulo pedagógico de especialistas do centro e suas contribuições para uma pedagogia sustentável que advoga pela defesa da vida, é possível sistematizar e construir coletivamente, uma concepção metodológica participativa da Educação Ambiental Popular, com princípios pedagógicos e critérios metodológicos orientados à ação transformadora dos atores sociais e suas práticas. Este resultado contribui para a melhoria da educação ambiental da ECOVIDA e facilita a incidência de atores sociais na política ambiental com práticas participativas de gestão ambiental. Ela promove a articulação de atores e experiências comunitárias e pretende um diálogo de conhecimento e aprendizagem, que reforça uma visão de mundo ambiental integradora e contra hegemônica ao paradigma neoliberal, e demonstra o caráter inovador deste conceito educacional que contribui para uma pedagogia sustentável.

Palavras-chave: Concepção teórico-metodológica; educação popular ambiental; pedagogia sustentável.

INTRODUCTION

Current environmental training requires pedagogy based on principles that favor equity, dialogue from diversity and respect for all species. This involves the challenge of questioning the paradigms that have guided action and beginning to see the Earth as a single community (Gadotti, 2017). A pedagogy that rescues the sense of coexistence from harmonious conditions for nature and society, a critical emergency in the face of reason that commercializes the knowledge of the earth, reducing it to useful knowledge for the development, domination, exploitation and devastation of the earth-nature-life. This current environmental thought in Latin America nourishes the articulation, bond, unhide of the implicit natural, poetic of life, to the processes of environmental formation, demystifying in the social imaginary that "truth is not the only heritage of modern sciences" (Noguera, 2017, p. 70).

Toro (2017) recognizes the intellectual field that, from the Latin American Political Ecology and the environmental philosophy, theoretically support the Popular Environmental Education (EPA) and Garcia (2020) recognizes the EPA as a dialogic practice for the formation of critical subjects and committed with eco social transitions.

In the investigation it is assumed that environmental thinking that generates critical reflection and political commitment, both in theory and in environmental practice, with prospective look towards socio ecological justice.

"The formation of alternative thought and subjectivities are only possible from the dialogue between those who, with their singularities and differences, share wills and interest in social transformation with an emancipator vision" (Torres,

2018, p.140); To achieve these political purposes in the training processes, it is necessary to activate the capacity for wonder, use educational codes that generate empathy and enjoyment, from the timely questioning of the groups and intellectual inquiry.

How to improve environmental training at the Center for Research and Environmental Services, ECOVIDA, from the popular environmental education for the development of an environmental worldview integrating the actors and their management practices? It is the fundamental problem of the research conducted, which socializes this article, which proposes to address the objective of: establish the theoretical and methodological conception EPA and its contribution to a sustainable educational approach that counter hegemony to educational fees that reproduce domination and disconnection between social actors, their practices and knowledge.

Given the above, the research contributes to form, from the dynamiting principles of the EPA, theoretical-methodological criteria and a system of values that harmonize the socio-natural relationships, capacities and abilities in the social actors for the development of participatory practices of environmental management. It intends a critical, integrative and interdisciplinary understanding of environmental problems, their genesis and effects on current societies. From emancipator paradigms that converge with a sustainable pedagogy as required by environmental training, it encourages dialogue of knowledge, collective construction of knowledge, development strategies and articulation of self-managed practices in students for the impact on the environmental policy of their territories. The scenario of environmental training ECOVIDA is strategic in this regard and requires

further development to achieve a systemic and inclusive training, an environmental conception that has a participatory methodology that favors dialogue, respect and harmony in socio natural relations.

MATERIALS AND METHODS

The documentary analysis method allowed:

- Study of governing documents of Cuban environmental policy, such as: Law 81 of the Environment (Chapter VIII); environmental strategy of Cuba. (2007 to 2010); the Cuban national strategy for environmental education (2010-2015); web of Cuban environmental training (associated documents) Sustainable Development Agenda (2030); National Environmental Education Program (2016-2020), to analyze the convergence of environmental training with what it is proposed in them.
- Consultation documents supporting training policy and scientific ECOVIDA, such as: strategy training (2015-2017); The training strategy developed by the Center for Education and Promotion for Sustainable Development (CEPRODESO), which coordinates the environmental training actions at ECOVIDA, in order to verify the behavior of the identified problem and the behavior of environmental training in the center, objectives to which it responds, correspondence with the learning demands of internal specialists and external social actors to the center, themes that have

prevailed, type of training that predominates.

- Research-Action-Participation (IAP). It is used in order to take advantage of the investigative process in a participatory way as group learning, in which it starts from the reflection of the practice to systematically dialogue among all with the theoretical-methodological bets of the EPA and make a participatory diagnosis of the state current problems associated with ECOVIDA's environmental training and project a training strategy that enables its improvement: participant observation techniques, which allows to verify the validity of the theoretical design methodology EPA in forming processes are applied, taking into account: dynamic used, relationship between learner and teacher, cognitive learning, methodological and associative modalities training; the discussion groups, applied to a random sample of 20 players, 10 to internal actors of ECOVIDA, specialists and researchers linked to processes of Research, Development and Technological Innovation (I + D + I) and 10 external stakeholders representatives of the areas: community (four), political decision-makers (three), business and productive (three). The objective was to identify problems faced by environmental training, their causes and effects, and their incidence in their fields of action. The instrument used was to tree problems, which allowed stratify the areas of incidence of actors, information on environmental training, useful for diagnosis and action planning as part of the

environmental education strategy proposal.

- The systematization. It is used to reconstruct methodological, cognitive and associative learning that, from the training practice developed by the CEPRODESO team, has been facilitated by the EPA. This method allows the ordering of information, the collective analysis and the ability to learn critically training experiences lived and contribute to the theoretical enrichment in the environmental formation of ECOVIDA, to perfect this methodological conception.

From the participatory systematization process, the theoretical-methodological elements of the EPA are identified; It is done with a sample of 30 intentional actors, including 6 from the educational team of CEPRODESO, 24 graduates of the training, in turn members of the web EPA, from the areas of practice: Community (five), makers politicians (five) and four ECOVIDA researchers and specialists associated with R + D + I processes.

It went through the following stages:

1. Identification of the object, objective and axis to be systematized, as well as the instrument to work on.

Object to systematize: The environmental training from CEPRODESO

Objective: identify epistemological, methodological and dynamic elements present in the formation of CEPRODESO, which influence the conformation of the theoretical-methodological conception of the EPA through a timeline.

2. Reconstruction of lived experience. The timeline includes those events and events that occurred since 1999, when the program began

to the present, which provided significant theoretical-methodological elements for the analysis. It is done from a group dialogue.

3. Analysis and critical interpretation of the information grouped into the categories: cognitive, methodological and associative learning linked to the pedagogical experience at each stage.
4. Information processing and synthesis. Foundation of the theoretical-methodological conception of the EPA from the formation of CEPRODESO.

RESULTS

The analysis of strategic documents that govern ECOVIDA's scientific and training policy yielded the following results:

Regarding to the Research integration process, Development and technological innovation (I + D + I), the training has not had an explicit intention of close cycles; it was designed for this purpose. However, in some cases it has been consistent with scientific results and has promoted the scientific logic of action in R & D & I projects.

The training demands identified from the strategy training ECOVIDA are designed in correspondence with the incidence of the center specialists in their processes ; in these demands those related to the field of natural sciences predominate, not so with the social sciences. However, most of the training actions offered have tended towards the profile of environmental education and management from an interdisciplinary approach.

Analysis of normative documents that apply to Cuban environmental policy

The National Program of Environmental Education 2017-2020, still holds the absence of the theoretical and methodological model so researchers like this help to fill this gap with its result: The theoretical and methodological proposal from a dialogic and participatory conception of the EPA.

All of them allude to the need to promote public awareness and social participation in environmental management; specific strategies recognize that Cuba has not been exempt from the errors originated from the so - called first world, so that the promotion of socio - economic development compatible with the will aim here Environment for sustainability and for this you need programs and environmental education experiences to form a favorable environmental culture harmonious to society -nature relationship and encourage local initiatives, which allow providing solutions to many of the social environment problematic that live in each ecosystem because of the prevailing anthropocentric paradigm.

The IAP method allowed the sharing of views and experiential learning of the actors who have participated in the training processes from the EPA. It facilitated the collective construction of the pedagogical concept with trained actors, specialists and researchers from ECOVIDA and members of the EPA network promoted by CEPRODESO. It facilitated the proper environment for the application of discussion groups by practice areas, which yielded the following results.

Discussion groups. Internal actors of ECOVIDA. Research scope

Problem: insufficient preparation of trained environmental specialists and researchers to develop R + D + I. Causes associated with the undergraduate curricular training deficit. They generally come from degrees in Forestry and Agronomy engineering, in which the predominant tendency is to form an economist conception of environmental management and vision. Another conditioning cause of internal order is the little interconnection of researchers and specialists with areas and spaces of environmental impact in the province, since there are not many projects that favor or enable field work. Effects of the existence of the problem: Little logical relationship between instructional dimension of formation that facilitates the assimilation of knowledge related disciplines biodiversity from the theoretical point of view, with the developer dimension of training that encourages the acquisition of skills, techniques and learning in the order of the instrumental for its application in practice.

Ambit. Environmental education

Problem identified: insufficient management of environmental education

Causes:

- The understanding that exists about environmental education is limited to activism and its effects rather than processes.
- Insufficient environmental education programs
- Insufficient pedagogical training of those who carry it out

Effects:

- The environmental education that predominates in ECOVIDA is empirical.

- Decontextualized from the needs of the communities in which said environmental education is carried out (conservation of species for participatory eco-management in protected areas, vulnerability and risk, among others)

Scope of direction of scientific processes

Problem: The environmental training is not updated with the results of process R & D.

Causes:

- Lack of integration between scientific activity and training.
- Many of the results obtained by these processes are from very specific fields linked to biodiversity.
- R & D & I processes do not consider their results as part of a cycle until they are introduced into training.
- The contracts for the R & D & I projects do not meet their end of the cycle and the visibility of the scientific impacts generated by ECOVIDA is lost

Effects:

- Insufficient introduction of the results in various social spheres such as the business and productive sector, political decision-makers and another group of strategic actors.
- The opportunity to influence the formation of actors and scenarios where the R + D + I processes are developed is lost

External actors to ECOVIDA. Community Scope

Problem: no correspondence of issues related to the needs of the communities according to their environmental problems to manage (agro ecology, food sovereignty, fair trade, solidarity economy,

Causes:

- Lack of a diagnosis that raises environmental problems in communities of environmental interest to make it correspond through educational programs that prepare communities for efficient environmental management.
- Few education and environmental management programs in protected areas.
- Little return of the information of the scientific results to the communities.

Effects:

- Up-to-date knowledge bias that limits efficiency in community environmental management practices.
- Political decision-making for community environmental management is not supported by up-to-date knowledge for such management.
- Insufficient community awareness of its environmental problems and the effects on the quality of life of ecosystems.
- Anthropocentric conception when doing actions or programs of community environmental management.

Á scope of policy makers

Problem: The ECOVIDA environmental training is not included in the training of cadres of the province.

Causes:

- The environmental is perceived as an externality of political management.
- ECOVIDA's emphasis on training has been centered on demanded environmental services.
- The environmental conception is perceived as very fragmented.
- management policies nor do not they know how to do it.
- Insufficient actions for environmental training for business and productive sector.
- Cadres, technicians and engineers have limited environmental training that prevents them from developing an integrated environmental management.

Effects:

- Political cadres are trained from the demands made by the business sector to specific environmental services.
 - Environmental training is biased in terms of the interests of organizations and companies.
 - Political cadres in decision-making relegate the environment to the background.
- A performing the participant observation in various modules of the graduate EPA and other actions, such as graduate courses, is found in the following elements:
- Group dynamics are much more effective for learning than conventional forms of group participation in the management of their learning.
 - Participatory techniques and teaching aids to visualize the problem from the contextual reality of the learners; from the use of demonstrative codes guarantee effectiveness in learning, productive and purposeful dialogue and critical thinking in them.
 - The logic of starting from the learning expectations, their conceptions and the questions or problem situations to be solved helps the student's motivation and self-management of knowledge.
 - When the educator alternates with his students from a horizontal relationship, it allows a fluid dialogue with acceptance and good communication; it greatly facilitates the assimilation of new knowledge and methodologies.

Á business and production scope

Problem: ECOVIDA formation has been focused on their strengths (conservation and management of biodiversity) and not in the context demands.

Causes:

- It is not taking into account the learning needs of the business and production sector for the training given in ECOVIDA.
- Insufficient capacities of ECOVIDA specialists and researchers to respond to the business- productive and service system of society.

Effects:

- The companies only remain in the identification and understanding of mechanisms for management and do not come to the implementation of environmental

Synthesis of the results obtained from the analysis of documents, discussion groups and participant observation

- The nature of ECOVIDA's environmental training is asymmetrical and does not fully respond to integrative and interdisciplinary scientific processes.
- There is a lack of an updated diagnosis on the learning needs of strategic social groups in society for their insertion in the training offers.
- Insufficient structure and operation of the existing training strategy in terms of processes and actions that diversify environmental training.
- Some training programs are decontextualized to the urgencies of the various sectors and areas of environmental management practices.
- Insufficient management of environmental training and its relationship with R + D + I processes.
- Lack of follow-up to training actions and their impact assessment.

The systematization process made possible the elaboration of the methodological conception of the EPA, which in structure and operation responds in an identity way to the development of training processes that encourages developer learning and offers a transformative orientation to educational practices. Dynamizers principles that constitute guidelines for action that have been implemented in areas of training developed by CEPRODESO to the accompaniment of the Centro Memorial Martin Luther King, Jr (CMMLK) are identified.

Transformation principle

It promotes the change of dominant and reproductive paradigms in human performance towards emancipator paradigms, criticizing anthropocentric positions, developmentalist and economist models that exacerbate predation and extractives. Proposal of sustainability criteria that guarantee the health of ecosystems and life on Earth. It implies self-transformation from the individual to the collective in our culture and performance.

Principle of innovation and contextualization of the educational proposal

This principle assumes the ability to innovate and pronounce the world in a suggestive way in congruence with the sociocultural characteristics of the contexts. Nuñez (2018) highlights the importance of educational technological innovation, both for natural and social processes. It should take into account the needs and expectations of learning of each social group and take as ingredient essential experiential knowledge; this knowledge is strengthened by the EPA by working on its teaching - learning processes in the dimensions: developer, educational and instructive with a pragmatic sense, and by offering a creative methodological conception of a playful nature. The designs, dynamics and methods are adjusted to group demands in a participatory way.

Principle of coherence and philosophy of life

To assume the concept of the EPA more than as a methodology, as a philosophy of life. This is an ethical aspect that rescues the necessary coherence between speech and practice, equivalent to seeking congruence between thinking, speaking and acting. Educators assume

the lessons learned as renovating proposals to unlearn the path they have traveled, if necessary, and guide their practices. We aspire to be consistent from critical understanding, both external and internal, through group reflection on the process and complex theorization of reality to the transformation of practices, which does not prevent the logical resistance to changes that in occasions it is experienced.

Principle of interdisciplinary

"The socio- environmental issue is clearly placed today in the field of complex systems and therefore demands a new interdisciplinary perspective. The process is already brewing from multiple hybrids approaches with different emphasis and looks renovated and routes converge on the coproduction of knowledge towards a reflective science and increasingly more participatory "(Delgado, 2017, p. 188). The EPA intends to train social subjects not only in universities, but also in areas of community development and with various social groups to nurture, from various disciplinary formations, the thematic axes identified in the training, dialogue is opened to popular knowledge and the experiences in synergy with scientific knowledge, which reinforce the universe of knowledge in environmental management practices. It enables interdisciplinary understanding, producing ecological knowledge mediated by disciplines for an integrative look at environmental issues, their systemic interconnection and the relationship between the micro and the macro.

Principle of methodological flexibility

The learner as a knowing subject is in constant self-management of his learning. The methodological designs in the EPA are prepared in accordance with the characteristics of learning

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groups and has as intention an apprehension of its methodological utility; For this reason, as the educational process progresses, the group is not only a co-participant in the coordination, but also in the script or methodological design itself. Through group dynamics, coordination roles are shared and they participate according to self-management demands for their own associative, cognitive and methodological learning, enabling the necessary methodological deconstruction and reconstruction to guarantee the achievement of objectives and expectations.

Principle of emotional and developer learning

In these processes, learning involves knowledge, awareness, thought, strategic actions and at the same time feelings, emotions, wills, since coexistence, group work, shared coordination and horizontality in the relationships between educator and learner, as well as intentional design of the didactic activity based on the motivations, expectations and cognitive interests of the participants, the dynamics and participatory techniques integrated into the educational purposes, allow a favorable psychological conditioning to learn and unlearn , coupled with the affects. The heart and the mind are not divorced in the human organism and they are present in the educational communication that is established, both individually and in groups. The climate of trust and acceptance that is conditioned to make each process an unrepeatable experience in space, time and action causes a liberating emotional formation.

Principle of the articulation of actors and practices

The creation of community environmental groups as alternative management units for the management of common natural assets is a

contribution of the training and support spaces that allow a critical understanding that individual action is not enough; it is in the collective action where it is found the driving force of environmental management. This wealth of collective thought and the dynamics that are established within the collective subject as a managing unit allow us to decode reality and understand its problems, the possible causes that originate it, the effects and consequences of management policies for ecosystems, impacts that livelihoods have for all species and how it can be produced collectively, knowledge and strategies for adaptation to climate change, responsible use and sustainability of life.

Principle of the dialogue of knowledge and the collective construction of knowledge. The work in groups

The transformations generated by the processes from popular education and the EPA are not purely cognitive, but cultural. Paulo Freire, in an interview, expressed: "... my voice is nothing without the voice of the group" (Orozco, 2000), it is in the group that the individual voice makes sense, in it there are multiple interactions, it constitutes an organism with own identity, with its own rhythm in learning. The analysis, the challenges proposed to deal, the discussions produced, questions and group management the coordinator makes, among other psychosocial and dynamic elements allow powering the group for human development. The EPA is based on the promotion of collaborative, meaningful and dialogical learning, which builds knowledge collectively and through essential dialogue (García, 2020).

Principle of integration and systemic conception (knowledge, disciplines, worldview)

The EPA intends to overcome the division characteristic of modern society, both between the natural and the social, as well as between the being, object and subject, the scientific and the popular, among other relationships by promoting integration, and links for a critical thought. "The ontological existence of the split is one of the structural keys of modern society" (Nogueras, 2017, p.70), so operating in this sense means appealing to a pedagogical model that forms systemic thinking, critical understanding skills and projective construction of the world and a socio-natural relationship system from equity and respect, that rescue complementarily and sense of community life (Boff, 2019).

Principle of critical and self-developing participation

The EPA trains and promotes a conscious participation of the subjects in the face of environmental problems. This participation is educated in the process itself, it is learned to participate from the roles and functions assigned and/or assumed in the process, the author facilitates the recognition of potentialities, roles and the assimilation of skills for self-management and self-development. The groups participate in environmental management and incorporate new learning, clarify the political meanings of why and why to participate, the how, which guide the strategies to be followed collectively. Way of being, living and remain are significant elements of the process of community participation, entrench ownership and generate finding solutions to problems and making collective decisions and the execution and the control of them are patterns of popular power to achieve a certain level of community development and

sustainability to the proposed transformations.

The theoretical-methodological conception of the EPA responds to a logic process that goes through several stages. These are followed by CEPRODESO in its training program, which at the same time makes reference to the training of the CMMLK in its popular education spaces, with some modifications. They have been the result of the experiences of members of the CMMLK educational team in Latin American spaces of popular education influenced by the methodological school of the 1990s in Nicaragua, other Central American spaces and in the Mexican Institute for Community Development. The Cubanization of this proposal is the result of a joint systematization of the CMMLK with Cuban psychologists who contribute creativity to its didactic and methodological components. From an empirical nature, it is intended to satisfy the learning expectations of many Cuban pedagogues trained by this center and actors with social impact. These moments reinforce the sense of identity of a group, community or organization; allow cohesion, empathy and a climate of trust for the understanding and production of knowledge. They respond to the practical-theory-practice logic and move from the concrete to the abstract and from the individual to the collective. They are:

1. Motivation and awareness (from an artistic code a connection with the subject to be discussed).

2. Presentation and group integration (initial presentation through participatory techniques to join the group and enhance identity) is worked.

3. Full expectations of participants with objectives of the process (starting from the learning needs of learners and

the program and achieve goals are shared).

4. Our conceptions. Exploration of the semantic universe (the intention is to share the meanings and the connotations from previous knowledge and practices face the group, epistemological referents are socialized).

5. Socio- environmental practices (individual and collective). Demonstrations and analysis are made from the practices of the participants with techniques, audiovisuals and role- plays to reflect on them.

5.1 Problematizing of environmental reality (at the individual and collective level). Situations, experiences and controversies are problematizing from the theoretical and practical discourse for a critical understanding that generates critical thinking and developer learning.

6. Theoretical deepening. In dialogue with the practices (reflection and interpretation of theoretical references in dialogue with practical knowledge; group readings are made and various views and questions are offered to debate in plenary and collectively build new knowledge).

7. Return to practice with transformer sense (group elaboration with prospective approach of the practices to transform from the acquisition of learning in the process lived).

8. Theoretical and methodological recovery (collectively the objectives and principal moments' methodological

learning, cognitive and dynamic to make a systematic synthesis of the educational process are recovered).

9. Evaluation of the process (It is evaluated from categories that allow critically share the scope of expectations, goals, group participation, apprehension of conception theoretical and methodological EPA).

10. Close (Since the group participation the farewell of process lived is built, continuities and joints to follow are shared).

Another methodological element used in this process is the deconstruction of vices, stereotypes, ways of thinking and doing about an aspect of the environmental reality that is lived; required to provoke problematic situations from practice and experiences, both of learners and educators. Leads to rethink why they happen that way, what we mean, to whom and how to delve into the sociocultural causes that support certain phenomenon, trend or style adopted by social groups in their performance or environmental management.

This process invites unlearn and goes through the following steps (Torres, 2018, p 150):

I. Contextualization of the concept in the reality of participants: how it manifests, who favors or limits, actual behavior of the concept or phenomenon in all its dimensions; it is described in its structural and functional aspects.

II. Recognize the personal trace in this phenomenon, our perception, that of the social imaginary in this regard: traditions, beliefs, gender behavior, and class, identities that influence the manifestation of said concept, problem or phenomenon to be deconstructed. Moving from contemplation to critical reflection of our

practices and experiences. Look in the mirror.

III. Map or diagnose the practices and what we would like to transform into them. Identify the elements that we want to deconstruct and the why and for what.

IV. Problematize and theoretically confront what we have learned with new theories, approaches that encourage change or the evolution of said phenomenon, concept or manifest situation of it. Reinforce or highlight the positive and that which questions to new learning that allow us to recognize the need to discard old ways or culturally assumed ways of seeing said phenomenon or concept under study.

V. Reconstructing new transformative practices based on the need for identified changes to be made in them. Build together, socialize, plan and design that projection of the new practices incorporating what is apprehended in the process experienced from the disassembly and dialectical reconstruction. Possible articulations, responsibilities are agreed upon if shared from the same group that will carry out such planning.

VI. From a systematization approach, assess the deconstruction and reconstruction of what has been learned. Here you can identify new points to unlearn and share the action plan to follow in the environmental management practice to be implemented.

The rhetorical question or interrogation is another methodological element that is used in EPA processes to problematize a contextual situation, analyze and activate critical capacity in the face of the fact, question behavior in the face of a problem or possible solutions to it. Its formulation intends reflective dialogue from different ways of thinking and is open to group discussion to achieve

critical and purposeful analysis and enhance developer thinking.

Another of the research results was the elaboration, from the EPA's theoretical-methodological conception of the ECOVIDA Environmental Training Strategy, period 2021-2025.

Vision: to prepare articulated processes of management and environmental training recognized for their contribution and impact on Pinar del Río society.

Mission: We form, from an integrated environmental design, capacities in social actors for a coordinated advocacy and environmental management in various social fields as a contribution to sustainable development.

Strategic lines of action:

I. Training and qualification of internal staff

Objective: form internal staff capabilities from a systemic nature that allows the apprehension of environmental knowledge for professional performance.

Actions:

1. Process education and training of the young people for their impact on scientific processes.
2. Training system to obtain scientific categories and degrees.
3. Diagnosis of annual learning needs for offers to specialists, technicians and researchers.
4. Organizational management of scientific R & D & I processes for incorporation in the training of technicians, specialists and researchers.

II. Schedule of post graduate environmental training

Objective: promote systemic processes and diversified environmental training to enable updating knowledge and practices.

Actions:

1. Annual diagnosis and evaluation workshops for the socialization of the management of training processes.

1.1 Inquire, as part of the diagnosis, in the areas identified in the research that were taken into account for the sample if the program satisfies the training demands of the groups of actors.

2. Diploma in Island Ecology.
3. EPA Diploma.
4. Conferences to update environmental issues.
5. Demonstrative didactic visits in environmental management areas linked to the training processes.

III. Monitoring and accompaniment of graduates from the training program

Objective: facilitate advice and synergies for the continuity of cognitive and methodological lessons that contribute to the improvement of environmental training of graduates.

Actions:

1. R & D & I project design and management workshops that include training as an essential component of this scientific process.

2. Methodological trainings for graduates of the training program in ECOVIDA areas and strategic institutions for environmental advocacy.

3. Biannual meetings with graduates of the training program to exchange experiences and evaluate the impacts of the training program on their environmental practices.

4. Integrate environmental management processes in various fields of graduates, as a form of feedback to the training program.

5. Management of environmental education for graduates based on advice, evaluation and design of educational programs in their areas and communities.

IV. Articulation and socialization of environmental training

Objective: establish ways for the articulation and communication of trained actors and the results of the environmental training provided by ECOVIDA.

Actions:

1. Establish articulation processes and strategic alliances with graduate institutions and in the sphere of political decision-makers, through agreements, joint actions, contracts or co - sponsorship of scientific-technical events.

2. Socialization of scientific results and technological innovations associated with environmental training in joint publications.

3. Dissemination of the annual training program by various communication means.

4. Publication in *ECOVIDA journal* of the results and impacts of environmental

Translated from the original in Spanish

<https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/2345>

training that demonstrate its systemic and interdisciplinary conception.

DISCUSSION

In the field of pedagogical sciences, Pérez (2009), in Barbón and Añorga (2013) conceive the theoretical-methodological conception as: "the process of taking a position, selection and coherent theoretical-practical location, to face the phenomenon object of study, taking knowledge (theory) and know-how (methodology) as requirements, both as basic elements to guide the educational fact" (p .46).

In the research, this criterion is assumed and a theoretical-methodological conception is developed that, from its structure and operation, responds in an identityarian way to EPA processes and it is defined as: a set of cognitive, ethical, affective and participatory assumptions that from the Theoretical - methodological point of view guide the self-management of developer learning in a group context for environmental training.

The EPA training spaces generate a critique of the socio- cultural causes that cause current climate change and its consequences for biodiversity. They are committed to a regenerative culture that, according to Colburn (2020) means a culture that prioritizes humanity and ecosystems over profit that is democratic and affirms life, joyful and non-hierarchical. The EPA "(...) offers a new view of the shared world that allows us to think and act creatively together and from another starting point, take on the challenge of collectively seeking deep alternatives to the predatory model imposed as an inevitable destiny" (Urrea; Gómez, 2020, p.45).

This concept has enabled the formation of collective subjects with capacity and skills for advocacy in environmental management of their territories, from an interdisciplinary, participatory and dialogic approach has exceeded cleavages characteristics of modernity and reinforce value community identities, the popular empowerment in the collective construction of knowledge, knowledge and strategies integrating that harmonize with the socio-natural system and revert and development of the economics and depredator models and after an environmental rationality based on equality and respect for The Biodiversity.

Given the results obtained in the diagnostic process, the theoretical and methodological conception of EPA, which allowed improve the environmental training of ECOVIDA was established. A training strategy was built, collectively and participatory with members of the CEPRODESO team and graduates of the training program, from the beginning of this conception, which reaffirmed its validity and coherence with a sustainable pedagogy and the need to address episteme related to education, Political Ecology and Biological Diversity. A program for the training of actors involved in environmental management of protected areas that socializes the scientific results of the project "Current status and comprehensive assessment of ecosystem goods and services of biodiversity in priority ecosystems Pinar de Rio" "Ecovalor was made".

In addition of having a methodology for assessing impacts of EPA (Pérez, 2014), methodological references are also provided for the formation of community environmental groups and the development or accompanying processes to community experiences, evidence of significant results with the

ones that ECOVIDA counts in the improvement of its environmental training.

The theoretical and methodological concept of EPA is a referent for environmental management practices in terms of cognitive, associative and methodologically, with possibilities of multiplication whenever it contextualizes the conditions of each human group and clarify the by what and For what of each space of environmental training, its political and pedagogical senses. Its application has shown in ECOVIDA's environmental training that:

- The deconstruction of traditional ways and forms or knowledge in a certain matter from the dialogue establishes a connection with their degree of involvement in the practices of the participants and promotes the collective construction of new knowledge.
- The training actions from the focus of the EPA projected with the new strategy facilitate a didactic cycle of practice- theory - practice that allows students critical analysis of their practices and a consequent apprehension with their transformation and implementation.
- Continuity of learning is guaranteed through face-to-face methodological accompaniment in the practice of graduates.
- Shows that the interdisciplinary approach in environmental education provides a critical and systemic understanding of environmental Problematic and establishes synergy and among the natural sciences and social sciences. In addition, it contributes to the socialization of scientific results.

This conception shows coherence with the popular education proposed by Paulo Freire. It shows the effect of a Freire's

tradition in the education and the evident contributions to the currents of the sociocritic pedagogy (Ivanovich, 2003). The EPA, in its political bet to propose dismantling the domination keys to form emancipator paradigms and environmental rationality that favors the existence of life.

When perfecting ECOVIDA's environmental training strategy, from the EPA's theoretical-methodological conception, a systemic and interdisciplinary nature of the training is assumed that contributes to strengthening R & D & I processes and satisfies the learning needs of the groups of social actors sampled in the diagnosis.

The expansion of teaching forms is proposed, beyond postgraduate courses, diplomas and conferences, in order to guarantee training in graduate practices and other modalities that facilitate the updating of knowledge.

EPA contribute to an innovative environmental training that regulates and invigorates, from the above principles, methodological resources, the learning developer, the performance of their students in a consistent manner with sustainable environmental education. It allows the articulation of actors for a greater impact on environmental policy. In addition, it activates critical thinking and the updating of a coherent environmental discourse to the dismantling of anthropocentric patterns of action and colonizing knowledge that immobilizes the conscious participation of social subjects.

BIBLIOGRAPHIC REFERENCES

- Boff, L. (2019). *Agenda Latinoamericana Mundial, 2019*. Editorial, Caminos. La Habana. Cuba.
- Barbón-Pérez, O.; Añorga-Morales, J. (2013). *Aproximación a una concepción teórico-metodológica de los procesos de profesionalización pedagógica en la Educación Superior*. Ciencias Pedagógicas e Innovación. Universidad Estatal Península de Santa Elena. p. 46
- Colburn, N. (2020). *Cultura regenerativa, Covid-19 y activismo climático: cinco lecciones compartidas*. https://cdn-prod.opendemocracy.net/media/images/Nadia_Colburn2.max. (Consultado 10 abril 2020)
- Delgado, G. (2017). *Ecología Política Latinoamericana. Pensamiento crítico, diferencia latinoamericana y rearticulación epistémica. Hacia la conformación de nuevas perspectivas socio-ecológicas: una lectura desde el caso de la ecología política*. Volumen, I. CLACSO. Argentina. p.188
- Gadotti, M. (2003). *Pedagogía de la Tierra y cultura de la sustentabilidad*. Paulo Freire. *Revista de Pedagogía Crítica*, 2(2).
- García Santiago, O. (2020). *Educación popular ambiental en contextos de crisis. Orientaciones pedagógicas para transitar las alternativas ecosociales*. *Revista de Pedagogía Crítica*, 18(24).
- Orozco, E.; Arana, LF.; Esquivel, JJ. (Realizadores). (2000). *Constructor de Sueños*. Entrevista realizada a Paulo

- Freire. Instituto Mexicano para el Desarrollo Comunitario (IMDEC). Producción. Guadalajara. México
- Iovanovich, M. (2003). El pensamiento de Paulo Freire: sus contribuciones para la Educación. Consejo Latinoamericano de Ciencias Sociales, CLACSO. <http://bibliotecavirtual.clacso.org.ar/clacsoformacion-virtual>
- Nogueras, A. (2017). Ecología Política Latinoamericana. Pensamiento crítico, diferencia latinoamericana y rearticulación epistémica. ¿Para qué poetas en tiempos de extractivismo ambiental? CLACSO. Argentina, p.70
- Nuñez, J. (2018) La ciencia y la tecnología como procesos sociales. Lo que la educación científica no debería olvidar. <http://www.researchgate.net/publication/328413184>.
- Pérez-Hernández, M.A., Conde-Lorenzo, E., Santos-Estévez, J.F., & Díaz-Crespo, G. (2014). Metodología para la evaluación de impacto de un programa de educación popular ambiental. *Revista Avances*, 16(2), 125-133
- Toro, C. (2017). Ecología Política Latinoamericana. Pensamiento crítico, diferencia latinoamericana y rearticulación epistémica. Homenaje a Héctor Alimonta. Volumen, I. CLACSO. Argentina.P.7
- Torres, A. (2018). Movimientos sociales y Educación Popular. Editorial, Caminos del CMMLK, La Habana.PP.140-150
- Urrea-Camargo, D. y Gómez-Andrea, M. (2020). Ecología Política al debate. Escuelas de la sustentabilidad y Educación Popular Ambiental. Tomo, II. Editorial Loynaz, colección Científico-técnica, Cuba, 2020 Pinar del Río, Cuba, p.4

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Authors' Contribution:

The author assumed individually the elaboration of this article.



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