Universidad de Guantánamo

Ciencia y Progreso
Publicada en línea: julio, 2023, RNPS: 2477, ISSN: 2707-7098
http://cienciayprogreso.cug.co.cu

Problemas ambientales locales. Una perspectiva a la sostenibilidad bioética
Local environmental problems. A perspective on bioethical sustainability

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Recibido: 23 de octubre de 2022
Aceptado: 19 de enero de 2023

Resumen

La temática aborda la búsqueda del mejoramiento de la calidad de vida de los estudiantes de la carrera con un pensamiento bioético, a partir del aprovechamiento de las potencialidades educativas de los procesos que se dan en el acto educativo. Se aplicaron métodos de investigación teóricos y empíricos que posibilitaron la elaboración de la propuesta a desarrollar en los colectivos de disciplinas y de año, contribuyendo a la preparación del estudiante en los problemas ambientales con una perspectiva bioética, a partir del diagnóstico que evidencia la necesidad de proyectar nueva vía eficaz que posibilite un modo de actuación hacia el cuidado y conservación del medio ambiente del profesional de la educación.

Palabras clave: Medio ambiente; Problemas ambientales locales; bioética; Educación bioética.

Abstract

The theme addresses the search for the improvement of the quality of life of the students of the career with a bioethical thinking, from the use of the educational potentialities of the processes that occur in the educational act. Theoretical and empirical research methods were applied, which made possible the elaboration of the proposal to be developed in the disciplines and year groups, contributing to the preparation of the student in environmental problems with a

bioethical perspective, from the diagnosis that evidences the need to project a new effective way that makes possible a way of acting towards the care and conservation of the environment of the education professional.

Keywords: Environment; Local environmental problems; Bioethics; Bioethics education.

Introduction

Transition to development requires today, more than ever, the promotion of a strong scientific and technical potential aimed at satisfying the basic human needs of the great majority. The availability of the cultural, economic and political resource of science and modern technologies is a condition for development, and constitutes today an important object of research by virtue of the fundamental role it plays in contemporary society. The ideal of science merges with the ideal of the revolutionary communist transformation of the world. Only the overcoming of capitalist society can allow an absolutely humanistic use of science and technology.

The Pedagogical Sciences as a Social Science, has gone through a permanent process of improvement when facing the complex challenges of the world, as it has guaranteed the sustainable development in the education of the different generations from the demands and potentialities of science and technology with the highest priority in the efforts to ensure that each new knowledge generated has a real benefit for society.

It is at the beginning of the 21st century that historical demands impose on education and particularly on universities great transformations in their educational work, as it is a reflection of the determined socioeconomic context, that is to say, it is necessary to organically link man and society in scientific knowledge. Man, as an active social being, transforms his conditions of existence under the determination and conditioning of social relations.

From this perspective, the permanent improvement of the education professional allows the absolutely humanistic use of science and technology. It is in this tradition that fuses science and human values its close articulation with the set of social relations in which it is inserted: science is a social phenomenon. In that tradition that fuses science and human values, the thought of Fidel Castro and Ernesto Che Guevara is situated in a privileged place, scattered in their writings we find inexhaustible ideas about the role of science and technology in the construction of socialism, the overcoming of underdevelopment and the elimination of the dependence inherited from capitalism.

Such a point of view allows the author an intrinsic vision of science, since the influence of this in the activity of the subject (man) in the objectives and perspectives of the current education, allows the search in the failure of the educational act from the interfactoriality in the social order, in order to solve the environmental problems at present.

From the above it can be inferred that a correct interpretation of science must emphasize its close articulation with the set of social relations in which it is inserted, science is a social phenomenon, a system of knowledge in development, which implies the systematic application of methods, the formulation of scientific problems, the advancement of hypotheses, the formation of theories and their permanent confrontation with the facts.

The current guidelines of the Congress of the PCC reaffirm the need to consolidate formal education and eradicate social indisciplines that acutely show deterioration of the norms of social behavior, where in the author's opinion, an incidence is observed in young people who study in pedagogical careers of inadequate behavior with respect to the environment can influence in a positive or negative way. A review of the behavior of each person is necessary to stop, to a great extent, the environmental problems that affect our locality and to achieve the formation of an environmental conscience necessary for the development of an economically and culturally sustainable society, based on a bioethical reflection.

These are the basic reasons, which have awakened in this reflection the need to provide a renovating educational solution from the incorporation of the bioethical debate in the educational teaching process, for its contribution to the moral and axiological reflection about human activity and its implications in the environment from the precise contribution of the diagnosis of the social context (student, family and community), which contributes to the integral formation of the students and which must respond to the historical-social context.

In this work, reference is made to environmental problems from a bioethical perspective, constituting an educational tool in the training of future professionals, based on valuing human-nature relations, starting from the study of the locality, with a differentiating and personalized character, which makes possible a way of acting towards the care and conservation of the environment.

Taking into account the above, the future professionals that we train today are of great importance for the current Cuban society since they constitute multipliers of knowledge, ideals, values, for which we propose as an objective: to offer educational suggestions for the treatment

of environmental problems in the Guantanamo society, as a bioethical perspective for their treatment in the substantive processes.

Development

The protection of the environment and environmental problems have become one of the major political, economic, social and educational concerns of contemporary times worldwide, whose solution and prevention depends on the existence of life on earth.

Man used to be organically linked to nature, depending almost exclusively on it. Although at present, man in many cases had a destructive character, the deterioration of the natural environment was not irreversible, because the territories abandoned by its qualitative depletion had the property of author to be restored quickly, here begins the process of separation of man with respect to Nature, having as main contradiction the development of the productive forces of capitalist formation, on the basis of which began to form the principle of domination of Man over Nature.

Technical progress increased man's influence on nature, manifested by the appearance of mechanized production technology, extremely wasteful and harmful to the environment. The result is the irrational use of raw materials, which brings pollution to the biosphere.

Therefore, Cuban pedagogy has had since its emergence the conception of the development of the instructive and educational, cognitive and affective in the formation of knowledge and personal qualities of man in relation to the research and creative scientific development through the education of society, which has influenced the scientific and technological advances of pedagogy and other sciences in line with the economic and social development of the country.

From this perspective, the education attended in universities is considered as a phenomenon, besides being social, specific and complex, (Chávez, 2005) that expresses in a particular way the diversity and the network of relationships involved in the society-education relationship in which the student lives; a conception that is assumed as a conditioning factor in the dynamics of the educational processes in the current context, endorsed by the system of educational, cultural, ideological, economic and productive influences present in society when interacting with the school. When society poses to education the need to form morally responsible subjects, it is pertinent to assess what bioethics, as a new knowledge, can contribute to education and in particular to the teaching-learning process.

In the last decade, bioethics has been understood as a new type of knowledge of profound cultural rupture with the ideal of classical rationality, which demands from man the reconciliation of morality and knowledge, so that morality constitutes a determining component in the objectivity of knowledge (Acosta, 1999). Its universe can be defined as the nexus between the biological and technological revolution, the environment and ethics. The approach of bioethics is new, not only because of the nature of the ethical problems it tries to solve, but also because it assumes the moral dimension of knowledge from within its production (Delgado, 2002).

From this revolutionary character assumed by Marxist-Leninist ethics, its object of study can be specified: it deals with the study of the concepts, laws and principles that govern the development of morality, it studies the system of values that man has developed as a result of his practical and cognitive activity, since man, in his relationship with the world, values each experience and its results.

From the axiological point of view, modern civilization has been based on an ethics based on human conquests over nature and confined to the moral evaluation of human relations. In this context, the need arises for ethics to broaden the field of axiological reflection to that of man's relations with nature, given the possibility of causing the destruction of the environment and with it of humanity. The emergence of bioethics was a reaction to the need to resize ethics and respond to problems related to the future of human life and the entire biosphere.

The term bioethics came into use in 1971, when the book Bioethics. Bridge to the future by the biochemist and oncologist Van Rensselaer Potter, the author shares with these ideas that the origin of Bioethics is an environmental ethics, that is, because of the concerns that originated it and its projection, considering Nature as a moral object, since it is a value and subject of values, so it must also be respected. The educational work being developed is also directed towards environmental education and should include bioethical education, due to the need to give contemporary life a normative orientation that requires an environmentalist ethic. We share the definition (Cárdena, 2006), which defines bioethics education as the process aimed at developing the concepts, aptitudes, skills and values necessary to form a new culture of life and nature, allowing responsible participation in the assessment, prevention and solution of dilemmas related to human dignity, the quality of life and the environment.

Bioethics education in the educational process can strengthen the bases for the construction of knowledge, values, attitudes and competencies required for the multifaceted and conscious development of the subjects, in the improvement of their lifestyle and community, as well as their active incorporation in Cuban society.

There is an endless list of topics that make up the agenda of pressing bioethical problems to be discussed, among them we can mention environmental problems and in particular local environmental problems are those that have for a certain geographical area of the planet that affects a locality, have been considered of greater impact and that take place on a broader national scale, taking into account, among other factors:

Affectation of significant areas, due to their dimension and/or values, of the national territory. Impact on densely populated areas. Impact on the health and quality of life of the population. Impacts on food security. Effect on ecosystems and biological resources. The resources and processes on which the impacts of climate change are most strongly felt.

Based on the analysis of the factors mentioned above, the main environmental problems are identified as follows. These have a complex and dynamic interrelation, and affect the quantity and quality of our natural resources in their link with the economic and social development of the locality.

In Guantanamo province, the environmental problems we face are as follows

1- Lack and difficulties with the management, availability and quality of water (Guaso-Guantanamo basin).

2- Soil salinity.

3- Indiscriminate logging of forests (Sierra Canasta).

4- Loss of biological diversity and deterioration of the ecosystems (royal woodpecker).

5- Deterioration of the hygienic sanitary condition in the human settlements.

These problems arose as a consequence of the growing development of the productive forces of society. Man was perfecting the means of work with which he developed his productive activity and it is precisely the object-subject relationship manifested in the productive sphere where the nature-society rupture is emphasized with greater rigor.

Let's reflect from a philosophical point of view on the current environmental situation reflected in the historical course as explained so far.

At present humanity has incorporated to its activity the result of the application of science-technology manifested in the utilization of practically all the renewable and non-renewable natural resources, which are found near the surface of the terrestrial globe, notably modifying the natural course of its phenomena. Continuing the above relation, the need for man to always keep in mind the laws of conservation is valued, in this case it is inferred that the form of scientific-technical activity is adaptive, as long as it maintains the essential variables of the biosphere, before the ecological limits, these variables with their limits should be elucidated by modern science taking into account the specific historical conditions in question.

The problem of the population increase in such an abrupt way in the second half of the 19th century constitutes one of the causes of the aggravation of environmental problems due to the fact that it increases to a great extent, the need of human society to obtain greater natural resources to satisfy its food needs, this means the increase of man's action on nature with the consequences of depletion of its resources and pollution.

Cuban Universities are centers in charge of training education professionals, with an adequate integrality that favors the harmonious development of the new generations, in which they have the mission to educate them according to the priorities of the socialist state, which implies that the teacher possesses a political, moral, scientific, environmental, and general cultural training that propitiates in their students knowledge, ways of consistent action, and healthy habits of conscience towards the protection of the environment.

It is then about a preparation that allows developing an education that implies a close relationship among all teachers, feeling the need that environmental problems do not fall on a single teacher or group of them, but on all those who, under an integrative pedagogical conception, participate in the development of the teaching-educational process.

In order to achieve the above, it is necessary to take into account the following actions, which include four fundamental stages.

First stage. Diagnosis

With the objective of identifying the limitations and potentialities of the teachers and of the substantive processes in the subjects of the discipline in their conception to propitiate the

instructive-educational relationship; in relation to environmental problems and their bioethical implication, the following actions are oriented

1. Determination of the current state of the teachers and students, for the treatment of environmental problems and their bioethical implication in the teaching-learning process.
2. Determine the potentialities of the conception of the substantive processes, (components: formation (academic, labor), research and extensionist), to contribute to the formation of the education professional.
3. To determine the potentialities of the programs of the subjects of secondary education, in the treatment of environmental problems and their bioethical implication.
4. Evaluation of the bioethical incidence in the teaching-learning process of the disciplines and subjects in the career.

Second stage. Training-projective

With the objective of training the teachers of the disciplines to be able to assume the proposal and project from the whole system of methodological work in its interaction with the substantive processes, by means of the ways of professional improvement and methodological work, therefore the following actions are proposed:

1. Development of the professional improvement of teachers in terms of bioethics, bioethics education, environmental education environment, environmental ethics, local environmental problems, through postgraduate, diploma and specialty courses.

2. To conceive the methodological preparation the interdisciplinary approach for the treatment of environmental problems from a bioethical reflection.

3. Development of methodological activities in search of ways that allow the preparation of teachers for the treatment of environmental problems and their bioethical implication in the programs of the disciplines and subjects that make up the curriculum of the career.

This aspect includes:

(a) Conducting methodological meetings, methodological classes, and methodological workshops to assess the ways that contribute treatment of environmental problems and their bioethical implication in the teaching-learning processes.

b) Selection of the contents that contribute to a greater degree to the formation of concepts, attitudes and abilities, taking into account the potential of the subjects in the year and their relation with the knowledge of basic and higher secondary education.

Third Stage. Executor

With the objective of executing the actions designed in the preceding stage, a deployment of the actions projected for each of the substantive processes is given from the discipline collective, in correspondence with the features and qualities of the professional's formation process.

Academic component. To develop learning activities with bioethical and axiological implications in order to argue the position of science and scientists before human progress, as well as to contribute to the formation of environmentalist values in students and to propitiate the deployment in the programs and their teaching. The incorporation of the bioethical implication in the different contents that are developed allows addressing in a functional way, the set of environmental problems that humanity must face. Bioethics education as a new pedagogical knowledge" is proposed as a subject in the 4th year of the Biology and Chemistry course.

Labor component. Taking into account the location of each student and the modes of professional performance in the context in which they carry out their practice, they can develop extracurricular and curricular activities with the (student-family-community) such as workshops, circles of interest related to the environment and its bioethical implication, plan of measures they can propose to solve such problems, elaborate material resources necessary for their solution, as well as the treatment of the contents of the programs taught in the teaching.

Research component. Select topics for competitions, scientific events of the FEU, for course work and the projection of their scientific work from its contextualization in the various environments associated with learning situations that stimulate their training. Develop student scientific projects, which will be tutored by the teachers of the different specialties of the career, where they work on relevant issues that provide solutions to the problems raised from their work practice. Develop an effective action plan to provide solutions to the most critical environmental problems in their educational context, promoting the exchange and dissemination of experiences.

University extension. Select and visualize science films and scientific documentaries, with a content appropriate to the intellectual development and in correspondence with the contents received up to that stage, revealing a certain level of relevance with their training; as well as the elaboration of observation guides for the visualization of each film.

Carrying out educational talks in the different communities where the students are inserted promotes dialogue and the exchange of experiences between teachers, students and families, about different environmental problems present in the community and their possible solution. And in this way raise environmental awareness. Each space is identified in the educational strategy of the course and the year for its implementation in the teaching-learning process with an instructive, educational and developmental approach.

Fourth stage: control and evaluation.

Control and evaluation are conceived from the application of the projected actions as an integral process that unfolds throughout its stages, in such a way that it assumes its formative and systematic character. It integrates the processes of knowledge, skills and attitudinal and evaluative characteristics of all the subjects involved in the process; while it enables the participation of students and teachers in the regulation of their own activity, discovering their progress and mistakes at the right time to serve as a stimulus, being able to seek their causes and influence them, and promoting from the individual and collective evaluation (especially self-evaluation and co-evaluation) the conscious and critical debate of the functioning of the process in question.

Each of the projected activities have been developed in the Biology and Chemistry discipline group. Each activity that is carried out will be evaluated from the group and individual point of view, both in the teacher and in the student; in this sense, evaluative criteria will also be received from other educational actors or external evaluators in the different contexts where learning takes place. The teachers exchange experiences that reflect the results and evaluate the impact and follow-up of the system of influence in the integral formation of the professional of the career, at the same time adjustments are made to the study program. Validation.

Conclusions

Environmental problems with a bioethical implication takes into consideration the social relations that take place from the school, which transforms in its professional exercise different ways of acting, expressed in its practical part. The updating in the studies carried out has allowed to resignify the scope of environmental problems with a bioethical implication in the educational context of the university and the social impact from the link between science, technology and

society, the education professionals must guarantee an environmentally trained teacher to act in correspondence with the demands of our current socioeconomic development, the system of educational actions that is proposed integrates two essential elements: the methodological work and the educational work of the teacher during all activities performed, providing the mechanisms that contribute to the integral formation of the professional.

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