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ANALYSIS OF BIOETHICS IN SCHOOL EDUCATION

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Abstract: This article has its origin in the challenge of articulating bioethics in the field of school education. The objective is to motivate the community of teachers to develop bioethical themes. That is why a review is urgently needed on what issues can be addressed from bioethics in school education and how they can be addressed. It is possible that bioethical issues can be addressed in schools when themes and projects are developed on the care of living beings, the environment, animals, people, bioethical issues can also be included to help children and young people. to become aware of the impact of waste by inviting them to learn about technologies that lead to the eradication of environmental pollution. The different investigations worldwide are analyzed to describe what topics are developed and what impact bioethics has on the training process at the school level.

Keywords: bioethics, school education, teaching.

INTRODUCTION

There are many topics that can be related to bioethics from school education which can be promoted so that both children and young people know bioethical concepts and can develop skills of being, doing and knowing how, necessary in today's world. Precisely, the dilemmas that are generated from bioethics must have an approach with the communities, for this an open dialogue is required and listening to people who live in situations of discrimination, displacement, poverty. If bioethics is not promoted in the field of school education, it could risk becoming an academic discipline far removed from the concerns of citizens, which is worrying in places with backward development, socioeconomic inequity, lack of resources, lack of technological and scientific development. Therein lies the importance

of undertaking studies and projects that address broad democratic deliberation and community participation.

THEORETICAL FOUNDATION

The word bioethics originates from the words *Bíos*: life and *Ethos*: customs, ethics, values and norms of conduct, the goodness or badness of human acts and rules of behavior. For Potter (1971) in his book *Bioethics, bridge to the future*, bioethics is a discipline that proposes a dialogue between biotechnological advances and ethics, defining it as follows:

"Bioethics, as I consider it, would strive to engender a wisdom, a knowledge related to how to use knowledge for social good, based on a realistic understanding of the biological nature of man and the biological world" (p.121)

According to this author, bioethics was born as an orientation to reflect on the future in all forms of life on earth (global bioethics), on human health (clinical bioethics) and the study of economic and social life (social bioethics).). Based on Potter's thesis, Cely (1999) states that bioethics is a discipline that collaborates with the solution of complex techno-scientific problems that affect the world of life.

According to Cely (1999), bioethics is knowledge in permanent construction, which in a complex way deals with responsible and supportive care of the vital ethos. Hence, the bioethical debate must be an interdisciplinary reflection, that is, a dialogue that invites each discipline to develop a critique of its presuppositions. Thus, for Cely (1999), bioethics is articulated with various sciences such as medicine and biology; equally with the social sciences, among which are political science, sociology, economics; also other knowledge such as ethics, law, philosophy and theology.

According to Cely (1999, 80), bioethics is

a discipline that contributes to the solution of complex techno-scientific problems that affect the world of biological-cultural life. Bioethics is a knowledge in permanent construction, which in a complex way deals with the responsible and supportive care of the vital ethos, which implies pushing, more and more, the frontiers of knowledge and of the fair wisdom assessment about three fundamental aspects: knowing that is life, what is the type of quality of life that we want and what is the meaning of life that we can share today's human beings, in communion with the ecosystem, for the benefit of current and future generations.

On a general level, bioethics is based on a fundamental principle and that is respect for life in general and the dignity of people. From this principle other principles are derived. According to Beauchamp & Childress (1999) these principles aim to strengthen the dignity of the human being and life in general:

a. Principle of autonomy. This principle is understood as the person's ability to make their own decisions. Under this principle, the personal values and options of each individual must be respected in those basic decisions that vitally concern them. It supposes the right even to be wrong when making one's own choice of him. From here derives the free and informed consent of current medical ethics.

b. Principle of beneficence. It is about acting in accordance with the greatest possible benefit for others. This positive principle of beneficence is not as strong as the negative principle of avoiding harm. You cannot seek to do good at the cost of causing harm: for example, the "good" of human experimentation (to advance medicine) cannot be done without the consent of the subjects, and even less subjecting them to risks. excessive or inflicting damage.

c. Principle of non-maleficence. It consists of not harming the other. A person must not

be directly harmed or treated as if they were merely a means to an end. This principle was already formulated in Hippocratic medicine: *Primum non nocere*, that is, above all, do not harm the patient.

d. Principle of justice. It consists of the equitable distribution of burdens and benefits in the field of vital well-being, avoiding discrimination in access to health resources. This principle imposes limits on autonomy, since it claims that the autonomy of each individual does not threaten the life, liberty and other basic rights of other people. People in similar situations must be treated equally.

METHODOLOGY

An investigation of qualitative approach of documentary type is carried out in which a search, collection, analysis and evaluation of the information relevant to the proposed topic is carried out. For the search and selection of research, the current and relevance criteria of the studies published in specialized and recognized databases in the field were considered, such as Ebscohost, Scielo, Scopus, Dialnet and repositories of doctoral theses from various universities with the words keys bioethics and school education, and in the English language bioethics and school education taking into account the year 2015 to 2020.

RESULTS

It is evident that from the search for research on bioethics in school education there is some concern on the part of some researchers worldwide to know how bioethics is present at this level of training. In all the works it can be evidenced that there is a tendency to work bioethics under the social approach as formulated by its founder Potter (1971).

As for the different perspectives reflected in the research that has addressed bioethics in

school education as an object of study, three research trends oriented towards:

(a) *implementation of bioethics in the curriculum and teaching-learning strategies;* (b) *social conflicts and coexistence;* (c) *impact of technological and scientific advances on human life and environmental problems.*

IMPLEMENTATION OF BIOETHICS IN THE CURRICULUM AND TEACHING STRATEGIES LEARNING OF BIOETHICS

In the trend of implementing bioethics in the curriculum, the analysis carried out by Bishop and Szobota (in the United States) in 2015 stands out, said analysis is that bioethics must not be left out of the curricula in schools. For them, the recognition that it is possible and important to teach high school students about bioethical topics and theory. For these researchers, in the late 1970s and 1980s, a few first-generation pioneers recognized the teaching and learning opportunities inherent in bioethics and secured donations to educate high school teachers on bioethical issues. In the 1990s and 2000s, second-generation efforts explored the possibilities of bioethics in secondary schools using a variety of approaches, models, and funding sources. A third generation of programs now emerging benefit from more stable funding and offer materials that can be accessed by teachers across a country or around the world; Some of these programs are supported by national entities.

There is a series of research carried out in the United States on bioethics teaching-learning strategies. One of these is that of Ike and Anderson (2018) who propose teaching bioethics in secondary schools using appropriate visual education tools. These researchers say that high school students are especially suited to learning bioethics because they will soon become legal adults. As adults,

they will make moral choices that can affect their health and well-being, as well as that of their communities and societies. However, not all visual education tools are appropriate for bioethics pedagogy in high school. Producers of bioethics films and comics must consider the details of students' age, race, gender, beliefs, level of education, and sexual orientation. Such tools must not be dominated by dystopian or utopian genres, must aim for objectivity, and must consider the complexity of ethical decision-making.

Keskin and Aksakal (2019) in Turkey, based on a research project, establish that bioethics education, based on discussion, allows students to be informed about a topic and at the same time allows them to correctly analyze the topic, think critically, apply reasoning and evaluate different points of view. These skills allow people to apply their knowledge to their lives, make decisions in the face of real problems, and understand the connection between science, technology and society.

Likewise, Kumarassamy and Koh (2019), in Singapore, explored the opinions of teachers regarding the infusion of values in science teaching, to which they describe that the values in science lessons caused changes in personal attributes, affect and behavior of students, such as increased interest and social engagement.

Likewise, in Brazil, Fischer et al (2017), describe that the educational experience in bioethics in recent years has had a growing recognition and importance in developing from primary school. The indications do not refer to the inclusion of bioethics as a formal discipline, but rather as an area that must be worked on in an interdisciplinary and transversal way in the context of a comprehensive, humanistic and critical education of children and adolescents.

Similarly, Sánchez (2017), in Colombia,

from “Dilemmas for learning and teaching bioethics”, raises the need to create a new consciousness to understand, assume and live life, seek new ways of interpretation and meaning. in the way of teaching bioethics.

SOCIAL CONFLICTS AND SCHOOL COEXISTENCE

In the concern of educating in citizenship due to the different problems of coexistence that arise in many societies, Carles Anguera (2014) in Spain, presents an analysis on how to educate for the future in secondary education. The author states that education for future generations is fundamental, since from the bioethical approach, young people must be taught to care for and preserve the planet, but this education must be very didactic and with good strategies.

Regarding the same situation, Garrafa and Manchola (2015), from Brazil, propose bioethics as a tool for building peace. They say that, from the expansion of the epistemological and methodological scope of bioethics, as a result of the Universal Declaration on Bioethics and Human Rights of 2005, it has opened up enormous possibilities for various fields, including: human rights, anthropology, law, public health, etc However, the important role that bioethics can play in the study and implementation of peace has not been explored. Bioethics has valuable tools and ideas to offer to peacebuilding.

Likewise, Moncada and Gómez Villanueva (2015), in Mexico, analyzed the relationship between the formation of socio-emotional competencies and conflict resolution and found that the students’ imaginary regarding coexistence appears closely linked to the context of their family experience, of the municipality and the school with the educational community. The vision of the conflict, its causes, consequences and ways to solve them, acquire stereotyped forms that are

characterized by a strong emotional charge, for which they need a good formation of skills in ethics, citizenship and bioethics.

IMPACT OF TECHNOLOGICAL AND SCIENTIFIC ADVANCES ON HUMAN LIFE, ANIMAL AND ENVIRONMENTAL PROBLEMS

In relation to human life: Freire (2018), in Spain, analyzed Bioethics and Biosafety for the use of secondary school teachers in promoting the autonomy of young people between 12 and 17 years old. He concludes that education is essential for freedom and autonomy, that it gives dignity to people. The understanding of scientific and technological advances favor the reduction of socio-cultural and political-economic inequalities among the citizens of a population. In this study, examples of bioethics and biosafety topics are proposed for use by teachers at school. Teachers can adapt the themes transversally according to institutional demands, their experience and perception, considering the ages, times, regional characteristics and realities of their students.

Now, in relation to animal life, the following works and studies related to the research proposal can be mentioned. The study by Moreira and Gonçalves (2018) in Brazil can be highlighted, they worked on the perception of students about scientific research with animals. The objective of the research was to verify the knowledge and ideas of a group of students from two high schools, one public and one private (Rio de Janeiro - Brazil). It was a cross-sectional study, carried out by applying a questionnaire answered anonymously. The results show that the teacher aware of his role becomes an instrument for the formation of critical citizens, and that the students’ reflection on bioethics is still little stimulated, which can negatively influence decision-making in society.

In relation to the Environment: Flores (2015) analyzes the study programs of the basic middle level of Mexico in the field of training, exploration and understanding of the natural and social world, related to environmental education for sustainability and the implications that can be referral for teaching (these programs have a national character). In the study programs analyzed there are elements of weak, strong and super strong sustainability. In the results of the analysis, the predominance of weak sustainability in the study programs is observed. Weak sustainability is associated more with the guidelines of sustainable development than with the proposals of environmental education, since the latter proposes to take advantage of not only economic but also natural resources with the intention of producing what society demands. This environmental vision highlights the idea of caring for ecosystems through the efficient management of resources. As a contribution of the analysis made to the study programs of the basic middle level, the importance of including social and cultural issues in the teaching of environmental education for sustainability is highlighted. This perspective in environmental education contributes to the formation of a critical attitude towards environmental problems, revealing social contradictions and building alternatives committed to the common good.

In Spain, one can find an experience of carrying out bioethics training processes in the school environment, which is led by the International Society of Bioethics (SIBI) based in Gijón, which since 2001 has been developing a pedagogical program that stimulates young people to consolidate the dialogue of science and technology with Human Rights, nature and the Environment. The program, as an educational activity, is unique in Spain, and has the support of Teachers and Resources of

the government of the city of Gijón. The SIBI organizes meetings such as World Congresses on Bioethics or International Conferences in which the SIBI offers free registration for students and teachers of Secondary Education in Public and Private Centers. This makes it possible for students and professors to come into contact with Bioethics specialists at an international level and in the end the experiences are collected in publications and magazines published by the SIBI.

Another experience of this type was carried out in 2006. The Interdisciplinary Center for Studies in Bioethics (CIEB) of the University of Chile has implemented the use of comics as a pedagogical resource. Based on imagined journeys, the protagonists of these comic strips go back to the different periods in which ethically significant scientific events took place. The comics act as a motivational technique and also include methodological suggestions to work on the issues, including the implementation of bioethics committees at the school level. The comics were used in the context of educational work, with the collaboration of teachers, to develop the capacity for dialogue, tolerance towards different ideas and the possibility of facing ethical dilemmas from the perspective of a research ethics committee. Science as a cultural value promoter of democratic coexistence presides over the effort of this project.

In Colombia it is found that the Department of Bioethics of the Universidad El Bosque, since 2005, has carried out training and research processes in bioethics to establish real possibilities of teaching bioethics in primary and secondary schools. The results of this research suggest that bioethics must be taught from primary to high school as a separate subject that must have two emphases, one the social part or called social bioethics, which must be carried out with didactic and easy-to-learn strategies. for the student, and the other

emphasis is to develop respect, responsibility and love in the student (Escobar Triana, et al., 2008, pp. 45–46).

CONCLUSIONS

The various studies converge on the relevance of bioethics at the school level, which is a trend in many parts of the world, however, there is still an underlying knowledge gap that needs to be further studied in order to confront it. Thus, then, the need for bioethics in school-level students cannot be ignored as a fundamental part of the training process, which is essential in moral development. It

is necessary to bring bioethics to the field of school education, which can be included as an organizing axis of the study plans in schools, especially in the areas of knowledge that address dilemmas and ethical problems of the life sciences, sciences social, philosophy, ethics, values, citizen culture. Bioethics can address issues that address concern for the human being, the environment, health and life in general. And from this study, in addition to generating programs that integrate bioethics at the school level, a route to follow to address this great challenge will be proposed.

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