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BIOETHICAL EDUCATION COMPONENT AND CORNERSTONE OF YOUTH'S MORAL EDUCATION

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Abstract

Bioethical education, as a component and as a cornerstone of moral education, looks at the education of young people, high school and college students so as they will be able to apply both moral laws and Biology laws in their subsequent scientific research and endeavours. Bioethical education is absolutely necessary in school education, especially in the final years of high school. However, it is of the utmost importance in higher education in the profile of Biology, encompassing heuristic strategies, interactive teaching methods, active traditional teaching methods and new, modern methods resorting to multi-media and electronic platforms.

Keywords: bioethical education, moral education, biology

1. Introduction

"In 2005, the 33rd session of the General Conference of UNESCO adopted the Universal Declaration on Bioethics and Human Rights (‚the Declaration'). Article 1.1 of the Declaration outlines principles that respond to ethical issues related to Medicine, Life sciences and associated technologies as applied to human beings. In doing so, it establishes, international standards for bioethics that are grounded in a language of rights: at its core is a pledge to safeguard human dignity and human rights in the context of bioethics - thus, we may describe the Declaration as the manifestation of a human rights informed approach to bioethical policy and practice." [1] Education policy and practice contribute to bioethics and bioethical policy and practice materialized by education.

1.1. Education stands as the subject matter of Pedagogy

The word comes from Latin, educo-educare (educere), meaning to grow, to cultivate, to guide, to educate, education, growth, cultivation, guidance. It is

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the socio-human phenomenon which enables students to acquire theoretical and practical knowledge on the basis of the accumulation of mankind throughout the social and historical evolution, shaping the personality and professional skills of the young generation as useful social entities [2].

1.2. Moral education

(Latin mos, moris, moralis = manners, moral behavioural customs) is part and parcel of education, through which a form of social consciousness is educated. This will reflect the totality of norms, conceptions and ideas, which direct and regulate people's behaviour in society, in interpersonal relationships. Moral education has Ethics as a fundament, which represents the science which studies moral laws (Greek ethikos or ethos = character, moral, ethical).

Moral education aims at developing the moral profile of personality and man's social - moral behaviour. Its specific features are determined, on the one hand, by the moral particularities, as a social phenomenon provided for by the content, and on the other hand, by the socio-psychological conditions which are involved in its realisation. Being related to the society and, at the same time, related to the subject are the two referential aspects indispensable to a pedagogic substantiation of moral education.

Moral will simultaneously reflect the manifestations of concrete relations between people, and their ideal meaning, respectively, how human relationships should be built in our society. The individual moral (individual moral conscience) is developed on the basis of social morality, representing actually the active and creative reflection of the content brought about by the social morality in each individual conscience. Therefore, it is necessary to emphasize the importance of the social environment where young people grow, live and are educated, which requires greater care from adults with regard to their behaviour and the promotion of the really beneficial values in the society, on the one hand, and the marginalization and elimination of non-valuable, destructive features on the other.

The moral system of our society consists of several components: ideal, values, norms, moral precepts and rules, according to which any desirable behaviour should be structured. From a pedagogical point of view, this is the basis for carrying out educational actions.

A component of moral education and also a cornerstone of it, is the bioethical education (Greek bios- life, ethikos or ethos = character, ethical) which aims to educate young people so as to apply moral laws in close correlation with the laws of biology in scientific research and scientific advances in biology, medicine, agriculture, and also in everyday aspects of their social, professional and family life and life in general on Earth.

The concept of bioethics was introduced by Van Rensselaer Potter in 1970, who considered it necessary to combine biological knowledge and about life with knowledge on the human, moral and ethical values. "Bioethics has emerged as a new discipline which unites biological knowledge with knowledge

of human value systems. I chose bio - to represent biological knowledge, the science of living systems, I chose ethics - to represent human value systems." [3] Bioethics is based on two Greek words bios - life and ethos - usually moral character, marking the formula most cursory ethical or moral life.

According to the scientist Denis Buican, agronomist, geneticist, historian and philosopher of sciences, writer, poet, a great educator as advocate for a true meritocracy based on coach selection, respect individual values and equal opportunities, bioethics represents the ,,ethics governing fundamental biological, medical and agronomic research on all living creatures'' [4].

In the context of the new scientific discoveries, it is absolutely necessary, as means of moral education, for the young people to become aware of the importance of bioethical education. Such an educational approach should lead to practical and theoretical scientific results and scientific phenomena and, also, should result in understanding how to use them in a responsible, ethical and moral way in humans' relations with their peers, with other living creatures and nature.

2. The subject matter and controversies of Bioethics

Bioethics addresses a wide array of issues and the controversies which may arise and must be tackled in high school, but, more importantly, in academic education. Here, the age particularities, intellectual development, higher cognitive skills and mature interpersonal relations and interactions make it possible for bioethical issues to be approached.

For example, the ethical principles of stem cell research, embryonic cell type that can grow into highly specialized cells found in various organs, are debated upon in various states, like Great Britain, USA, and Japan. Early embryonic tissue produces all potent stem cells, stem cells therapy and genetic therapy for some irreversible diseases but this may pose some ethical issues. The main controversy is focused on whether human embryos should be obtained to be used in scientific research since they will be destroyed; also, if stem cells are used to produce organs, the embryo from which the cells are collected will be destroyed and, therefore, a life will be terminated, what is immoral. The problems that appear are varied, depending on religion, human rights, the restrictions on human actions to change the evolution of a certain disease so as not to put a new life at risk, and ethical aspects related to the origin and use of stem cells. For example, some American states allow for the conduct of research on stem cells, but there are restrictions on the use of federal funds for obtaining new human cell lines. Other examples lie in the concerns of some international institutions like the European Parliament which has stated its own principles and request applicable to all member states: "cloning human beings, whether performed as an experiment only with a view to fertility treatments, pre-implants diagnosis, tissue implants or in any other purpose, by no means can be justified or tolerated by the society" [*Resolution on Human Cloning*, European

Parliament, 1998 O.J. (C 34) 164 (Jan. 15, 1998), online at http://www1.umn.edu/humanrts/instree/cloning2.html].

There are controversial discussions among scientists who support human cloning and the clergy, who consider that "...since the cell collected for cloning and the human being grown out of it will anyway live in our fallen world, there will be, alas, no escape for them from the all human death. And not biologists, but He Who alone has immortality can defend our life against death or return us back to life." [5]

The result of cloning - a multiplication without fertilization - is the appearance of the body-copy from which it was taken karyotype information. On the one hand there are considerable efforts from the biomedical sciences to explain the mysteries of life. Bioethical problems can occur, some enthusiasts proposing for example, cloning Adolf Hitler in order to punish the crimes made by him, while others would like cloning Christ to see His divine abilities. Current human society is not yet ready to accept the process of cloning as a method of assisted reproduction medical, there is a real danger to enable amoral evolution and even destructive actions.

„Bioethics - so there is no science and no new ethics (…), but a multidisciplinary focus, the border with current ideologies, philosophy, theology and law. The fact that in this way attracts other disciplines and civil society exceeds ethics. Contribution of other disciplines gives an identity that exceeds bioethics controversies and instability." [6]

3. Bioethical education in the educational process

Through bioethical education, young people understand that throughout their lives they have to act responsibly towards science and humanity, regardless of their professional goals and career objectives in the future. Wherever they may live and work, they need to act in a bioethical sense without endangering creatures, nature or Terra.

Bioethical education raises issues related to both age peculiarities and individual features of the youth. This type of education, as a component of moral education, can be briefly started in the family and is to be further nourished in adolescence when not only the intellectual abilities, but also the national curriculum for high school level makes its achievement possible. This education continues in specialized universities in accordance with the academic curriculum and later on, at adult age, through continuous training and development, self-development and self-training.

Various Biology-based subjects taught in high school, such as Biology or Health Education, which are part of the Romanian school curriculum within the 'Health Education Programme 2005', or several specialized academic courses, such as Genetics taught at the Faculty of Biology, contribute to the moral education of the youth by focusing upon bioethical issues.

Examples of Biology lessons where bioethical education can be successfully incorporated include: 'Scope and bioethical considerations in human genetics - genetic advice, prenatal diagnosis, in vitro fertilization, therapeutic cloning, and genic therapy', 'Immune-genetics' (grade 12), 'Conception and contraception' (grade 11), 'Sexually transmitted diseases', 'Sexual reproduction in mammals' (grade 10), 'Cloning' (grade 9), etc.

Classes on health education can promote an effective bioethical education through lessons such as: 'Gender roles in society', 'Identity and sexual orientation, STI/HIV/AIDS', 'Legislation on sexuality. Pornography and prostitution', 'Domestic violence, causes leading to abuse and violent manifestations', 'In vitro fertilization', 'Organ donation and transplants. Cloning', etc.

,In vitro fertilization' can be discussed with young people, based on the following questions that require thinking: "What is the status of the human embryo?, Is a period of human life, or a group of cells soulless? Should we equate the terms 'man', 'foetus', 'embryo', 'zygote', 'blastomer', 'oocyte'? When a human being becomes a moral topic?"

In ancient oriental traditions human age is calculated from the moment of conception, while in western culture the beginning of life is considered from the moment of birth. Soul problem causes hot discussions in the religious dogmas. According to the Christian faith, the soul is a divine gift and is assigned to embryo from de very conception. Paradoxically, while hundreds of women go daily to abort, others are doing their best (and sometimes unacceptable) to become pregnant.

The fate of frozen embryos is in the midst of a heated debate today. Most times they are abandoned by couples involved in artificial insemination. Thousands of embryos are stored today in Human Embryos Banks and specialists do not want to take responsibility for the decision on the fate of the 'genofund reserve'. Moral problems arise from the possibilities available today which are present very often in the literature: long-term freezing can overturn the entire human reproductive behaviour by changing the laws of heredity; embryo banks can offer to a granddaughter an embryo from her grandmother or a daughter could be able to be the sister of her child.

To support the discussion, the teachers may present to their students, some major recommendations of the European Council in Strasbourg (1979) on artificial insemination as: the need of both spouses consent; fertilization takes place in a special medical unit, made only by the personal geneticist and his team (confidentiality 'in vitro' fertilization); the doctor is obliged to maintain absolute secrecy about the couple who has a child in this way; the child shall be considered the legitimate child of the couple; is prohibited mixing sperm from several donors, mitigating the moral, psychological and legal consequences; to explore the psychological development of children who were conceived by artificial insemination and their families.

The teachers have to emphasize, following the discussions with the students that: the practice of artificial insemination is based on protecting the interests of couples, children, doctors and donors; the artificial insemination is not universally accepted. For example, the Catholic Church rejected the artificial insemination. The Academy of Moral and Political Sciences in Paris recommended against this type of fertilization (1949).

When it comes to academic education, for example interactive lectures on Microbiology, which focus on microorganisms, may promote the bioethical education by tackling the artificial manipulation of genes found in microorganisms. Thus, microorganisms with a new genetic architecture can be created and they may feature peculiar infectious properties and unpredictable ecological effects. These artificially created microorganisms, such as viruses and bacteria which are not be met in nature, can be used in the so-called genetic war, which might prove just as dangerous for the human being as the thermo-nuclear war.

Students must be provided with the kind of theoretical and practical training which can be later turned into the ethical foundation of their career. They should become able to internalize the humanistic values of their future profession.

"Bioethics displays cross-curricular features, which is why debating on and resolving the issues raised ought to stem from the contributions of professionals in all life-related scientific domains." [7]

Bioethical education requires the use of deductive heuristic strategies, analogies, interactive methods in the teaching process. On one hand, these methods will boost analytical thinking, analogical reasoning, synthetic and flexible approaches and, on the other hand, they will encourage personal responses, opinions backed by scientific arguments, scientific demonstrations and interactions in groups and teams. The atmosphere emerging in this teaching environment will be similar to that characteristic of scientists and decision-makers who can impact the humankind in a positive and not destructive manner. Therefore, the methods underlying these teaching strategies are diverse, ranging from traditional active methods (lectures with opponents, lecture-debate-discussion, Socratic dialogues) to modern methods (fishbowl, clustering, cooperation).

For example, fishbowl ('aquarium technique') is based on educational interaction, as the students are divided into two groups (8–10 students) one group acting as observers in order to come up with solutions to the controversial issues, to develop good relationships in their group and to increase their observation skills. "Through its interventions, the teacher-moderator will try to bring new ideas, new viewpoints and arguments to the completion of overall task." [8] The controversial issues depend on the national curriculum, the age particularities and individual features of the students. In order to support bioethical education may include the following ideas:

- Is it recommendable for human beings to resort the 'in vitro' fertilization? Which is the familial, social, scientific, evolutional impact of this technique?
- Do you think human cloning may be possible? Bring scientific arguments to support your answer.
- How healthy are genetically modified animals for their own sake, for humans and nature?
- Does human cloning come with any advantages, disadvantages or both? Bring scientific arguments to support your answer.

This teaching approach is to be used during the academic courses or seminars and in high school as well, especially in the final year of study.

Biology lessons with ecological content must tackle the world wide ecological crisis, arising with industrialization and urbanization. These lessons foster the accountability of the students, are raising their awareness and develop their environmental consciousness in correlation with the bioethical education.

"Human arrogance and exploitation report that man has with nature lead to ecological catastrophe, and man destroying nature, destroy the very foundation of its own existence. Nature is not an object of exploitation by man. The object can be scientifically known and technically controlled, but nature is the way and the space of human presence in history." [9]

Van Rensselaer Potter himself coined the term of bioethics, after becoming aware of the ecological crisis and after realizing that the natural order of the biosphere is subject to existence patterns in the world and the ways in which human beings relate to these.

The teaching means to include info-biology labs, electronic platforms or special software programmes and multi-media labs for teachers and students where they can watch educational-scientific films on bioethical topics, such as biological war, in vitro fertilization, human cloning, HIV, medical, social and socio-professional behaviour towards HIV-positive persons, stem cell donors, egg and sperm donors, cell banks, human trafficking, sexual exploitation of girls and women, sexual harassment, etc. In addition, demonstrative teaching materials can be brought in, like, scientific posters, genetics atlases, human anatomy atlases, etc.

In bioethics education, for assessment and evaluation, the most recommendable are the alternative methods, such as project work, individual scientific research, scientific papers, portfolios, self-evaluation, student observation, and all other student-centred methods which will keep students motivated and involved to a larger extent.

"Bioethics is the vitally necessary balance that will not allow the 'spirit of knowledge', rebellious and troubled by its nature, to throw the humanity into the darkness of non-existence." [10]

Man becomes moral issue when complying with both applicable laws and morals in everyday life and in scientific research (biological, medical, agricultural and business) in all its scientific forays. These are the directions in

which is recommended to make the bioethical education to young people as means of moral education and also as components of moral education.

4. Conclusion

Bioethical education lies at the heart of moral education and it is one of its basic components. It is obvious that moral laws should intertwine with biological, medical, agronomical laws and this is how bioethical education contributes to educating young people. They will be enabled to apply moral laws in their mundane and professional life and adopt a responsible conduct in their research work. Given the modern context of teaching, the methods, techniques and means should be carefully chosen so as to harmoniously combine traditional approaches with heuristic strategies and multi-media equipment in both undergraduate and further education.

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