

Promoting Bioethical Literacy in Primary Education: The European Reality and the Case of Greece

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ABSTRACT

The development of biotechnology during the last decades brings societies and policymakers a fresh view on how to communicate and manage the biotechnological knowledge and ethical aspects that arise, concurrently. During the era of biotechnological accomplishments and globalization, a new field of ethics arises, the field of Bioethics. It aims to balance the dangers that emerge because of the implementation of biotechnological accomplishments on human life and their benefits. With the promotion of Bioethics education, everyone has to realize his personality, his mentality, his citizenship, and his connection to others. Many educational institutes worldwide embody bioethical courses for their students and an adequate number of curricula have been created for this purpose. Researchers and educators accord with the necessity of public ethical and bioethical literacy already from elementary school. At the same time in many seminars organized by the Committees on Bioethics, the appropriateness of teaching Bioethics primarily is presented and organizations worldwide support the introduction of Bioethics courses in the curricula. The majority of European countries have incorporated ethics and bioethics courses into their curricula for Primary Education. Greece amongst other countries is the exception to that rule. The goal of this dissertation is to convince the local education policymakers about the importance of Bioethics education so to include ethics and bioethics courses in the Greek educational system, in all grades and especially in elementary school, based on the necessity for the creation of educated future citizens for the country and the world.

keywords: bioethics literacy, elementary school, European comparative study, primary education, proposal

1. Introduction

Due to the exciting development of biotechnology recently there is room for the diffusion of new information and for knowledge management of both biotechnological and ethical aspects that arise from that development. Bioethics is the new scientific field that intends to fill the gap that arises from this biotechnological development and bioethics education is the new educational field that should be exploited entirely. According to Dragona-Monahou (2002), the main implementation of this new option of ethics, called bioethics, is the discourse and the main purpose is to discover, investigate and manage the ethical issues that arise in humanity through those biotechnological accomplishments.

Already, many different local bioethics committees have been established over the last years in many European countries to deal with the increasingly biotechnological development and ethical issues. These facts exponentially become topics of major concern and discussion not only by scientists and educators but for the entire community. As Levin (2014) points out Bioethics concerns not only the scientists but the public too. He mentions that *“Bioethics is simply too important to be left to the bioethicists, but should offer opportunities for the general public to engage on a broad array of pertinent issues and to articulate their beliefs, secular or religious, and their concerns, be they related to technology or social injustices”*. Accompanying this argument Lehmann (2014) also notes that it is generally accepted that the capability to recognize, understand, and cope with ethical challenges is the main purpose of bioethics education, such as the liability of the involvement of all the citizens in the issues. At the same time, many international conferences cover the variability of the ethical issues and present their results on how the society of biotechnological citizens should react to the new technologies (Klungland, 2001). Since 1993, with the creation of the International Bioethics Committee (IBC), International Organizations supported the respect of human dignity and freedom and the promotion of moral skills through education. During the 32nd Conference of the United Nations Educational Scientific and Cultural Organization (UNESCO 2003), the majority of the members expressed the need to create educational curricula for Bioethics and in 2004 started the "Ethics Educational Program" which steered to the creation of the database of Global Ethics Observatory (GEO) and the publication of at least 235 educational curricula on Bioethics.

Inferentially it is a fact that numerous educational curricula for every grade have been published during the last decades in Bioethics which seems to be the fastest-growing scientific field and that's the reason why are taught at different educational grades, from Kindergarten to Universities.

The European countries in their majority embrace Ethics and Bioethics as objects in their educational curricula for Primary Education and advance bioethics literacy, either in their compulsory educational curricula, either as a compulsory subject chosen by the students, either as flexible compulsory subjects chosen by schools who have the flexibility to design their learning programs or finally as a cross-curricular subject.

1.1. Materials and Methods

For the accomplishment of that dissertation several statistics have been selected from the European Commission's website, especially from the Education and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA) and its *“Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)”*. *“Eurydice”*, as a coordinator is an official network of 43 national units based in all 38 countries of the Erasmus + program which provides information and comparative analysis on systems and policies in education in the EU and beyond. By following descriptions of national education systems, and comparative studies devoted to specific topics, indicators, and statistics in the field of education it is understandable how the education systems are organized in Europe and how they function, especially in bioethics literacy primarily.

All the selected information will be used for the chart's creation presenting: the existence of Ethics and Bioethics as an educational subject in the National Education Systems curricula of Primary Education in Europe, as well as the creation of separated educational subjects in the National Education Systems curricula of the Primary Education in Europe. That comparative research will help realize the necessity of Ethics and Bioethics literacy by the very first

grades of Primary Education and organize a new national education policy in Greece and Europe which will encompass the field of Ethics and Bioethics in the teaching curricula of the wholeness of the Elementary School.

2. Bioethics Literacy - Why Should Bioethics Be a Teaching Subject

Bioethics is the scientific area that deals with the ethical aspects of biotechnological discoveries in recent years. It is the area that attends to those ethical aspects differently from the medical, economist, or psychologist scientists. Bioethics literacy's main purpose is to induct the students and to prepare them, to make decisions for themselves and their families, with consciousness. (Commission on the teaching of Bioethics, 1976). The necessity of bioethical literacy education for the public is an inevitable fact, as every citizen of the interconnected world, will compete against bioethical challenges as individuals, professionals, family, and community members at least once during their lifetime. Is an educational subject whose aim is to determine how to live and behave following human and social principles. Moreover, as Protopapadakis (2018) notes, every person has the opportunity to control and handle all life affairs and ethical issues, through the discovery of biotechnological achievements. In a similar vein, Have (2006) notes that bioethics education steers to the development of adequately educated citizens of the future. As Zeidler et al, (2002) observe, bioethics literacy is a concern for every citizen, not only for scientists or bioethicists. Everybody is going to manage serious bioethical issues at least once in a lifetime, by using his morality. So, it's obvious that moral strengthening originates from ethical and emotional development through bioethics education.

Ethics and bioethics education provides the tools for scientific understanding, offers the knowledge of the biotechnological discoveries and their ethical guidelines & promotes respectful dialogue among people with different views (Macer, 2008). By constructively composing analytical skills after the comparison of different opinions, the individuals cultivate critical skills which help them justify personal beliefs and values & consequently be better world citizens (Booth & Garrett, 2004). In a similar vein, Dragona-Monahou (1995) notes that the lack of ethics education won't help people to cultivate their ethics (micro-ethics) and as a consequence, their reactions are navigated by their conscience, their emotions, or by their desires. Therefore, nobody could be capable to realize the wider social ethics (macro-ethics) as a member of the international society.

2.1. Students' Maturity in The Primary Education

Several surveys support the opinion that Ethics education must start early with its main goal, the total children's development, morally and constitutionally. Nowadays many scientific studies indicate the capability of children even from the age of 2 years of engaging with critical reasoning in moral issues. As Smetana (1981) observes, children from the age of 2 could develop some view of critical thinking by expressing their opinion concerning simple ethical issues. Accompanying this argument, Knight (2015) also notes that "*children can distinguish between social convictions and moral laws*" and they can give estimable answers to real simple ethical questions. It is crucial to begin ethics and bioethics education for young children in the first grades so that they can find the solution in basic ethic concepts such as right and wrong and over time to ensure that this education will develop in more targeted interests. That's why the years in Primary school are ideal for embracing new information easily, through stories, poems, rhymes, and examples. It is also important to take into consideration that the United States Presidential Commission for the Study of Bioethics recommends the establishment of ethics education from an early age when children can build

moral identity, personal rules, and values for future ethical decision-making. Apart from that, it is generally accepted that the main goal of teaching bioethics at all grades is the same: learn about ourselves and be prepared for the difficult discussions and decisions that bioethics attract (Macer, 2008). Moreover, as Helland (2001) illustrates Bioethics Literacy is suitable for every educational grade, with the obvious implementation of different educational and pedagogical methods in each grade. The ideal concepts include different teaching methods and curricula for different student levels. Ethics and Bioethics can be separate educational fields or can be part of classes in which ethical dilemmas and challenges would come up, just as Science, History, and Social Studies. Our survey follows the rule that both conditions exist in European primary schools.

3. Results-Discussion

3.1. European Reality

The European reality is that the majority of the European countries (24 countries among 43) include Ethics and Bioethics courses into their curricula for Primary Education, appreciating the necessity of Ethics and Bioethics literacy (table1) (fig1, fig2). Initially, it is crucial to mention that in our survey, the United Kingdom is still included in the countries that compose our data sample, despite its egress from the countries that constitute the European Union in January 2020.

Therefore, we have to report that the responsible for every educational subject all over the world is the national government and its policymakers in the field of Education. In many European countries, there are local differences by region or differences by schools in the same region. Many subjects could be compulsory or not, primarily, and in several cases, it depends on the school to offer or not their students the choice of ethics or bioethics educational subject.

Table1.

European countries-Ethics-Bioethics Courses/Primary education

1.	Albania	no ethics or bioethics course
2.	Austria	health and sexual education/education for gender equality
3.	Belgium Flemish Community	ethics course
4.	Belgium German Speaking Community	ethics course
5.	Belgium French Community	ethics course
6.	Bosnia	no ethics or bioethics course
7.	Bulgaria	no ethics or bioethics course
8.	Croatia	no ethics or bioethics course
9.	Cyprus	health education/environmental education/education of sustainability
10.	Czech Republic	no ethics and bioethics course
11.	Denmark	health and sexual education
12.	Estonia	ethics / moral education course
13.	Finland	social studies/ethics course
14.	France	civil and moral education
15.	Germany	ethics course/ health education
16.	Greece	no ethics or bioethics course
17.	Hungary	religious or ethics course
18.	Iceland	ethics course
19.	Ireland	social, personal, and health education (SPHE)

20.	Italy	no ethics or bioethics course
21.	Latvia	no ethics or bioethics course
22.	Liechtenstein	no ethics or bioethics course
23.	Lithuania	moral education course/social studies
24.	Luxembourg	moral and social education course
25.	Malta	ethics education course/ personal and social development/ health and care
26.	Montenegro	no ethics or bioethics course
27.	Netherlands	no ethics or bioethics course
28.	Norway	no ethics or bioethics course
29.	Poland	no ethics or bioethics course
30.	Portugal	religion and moral education
31.	Republic of North Macedonia	ethics course
32.	Romania	no ethics or bioethics course
33.	Serbia	no ethics or bioethics course
34.	Slovakia	ethics course
35.	Slovenia	ethics course
36.	Spain	no ethics or bioethics course
37.	Sweden	no ethics or bioethics course
38.	Switzerland	no ethics or bioethics course
39.	Turkey:	no ethics or bioethics course
40.	United Kingdom England	moral education course/ relationship and sexuality education
41.	The United Kingdom and Northern Ireland	moral education course/ relationship and sexuality education
42.	United Kingdom Scotland	moral education course/ relationship and sexuality education
43.	United Kingdom Wales	moral education course/ relationship and sexuality education

Source: European Commission, Education, and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA), “Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)”. “Eurydice”. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/index_en.php_en

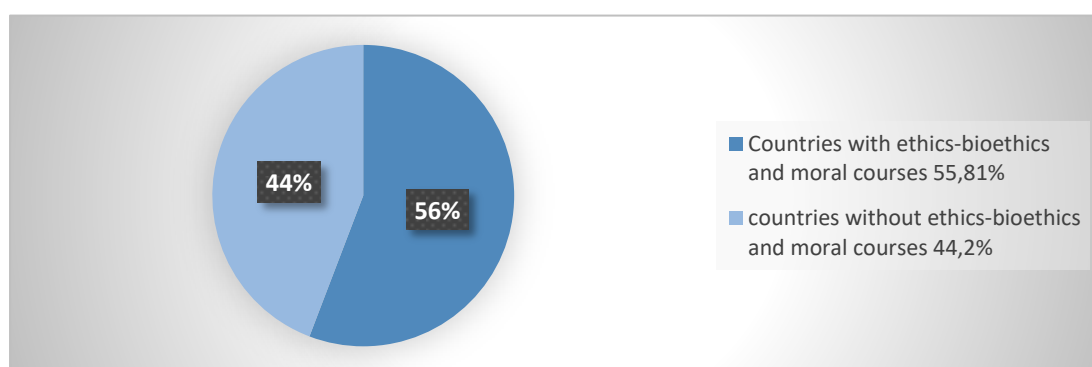


Figure 1. European Educational Curriculum The percentage of the countries with Ethics and Bioethics Courses, in contrast, the percentage of the countries without Ethics and Bioethics Courses

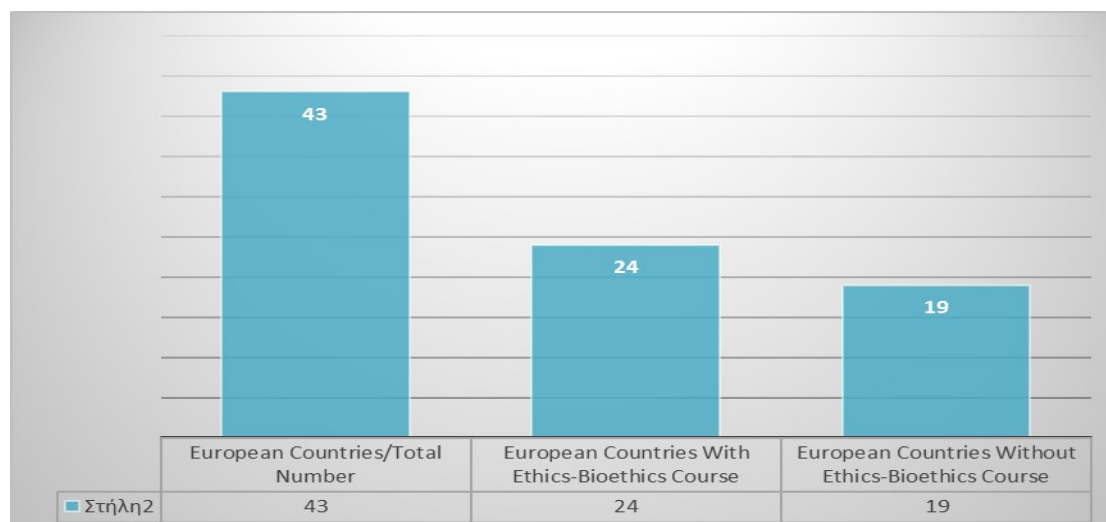


Figure 2. European educational curricula/primary education/countries with and without ethics-bioethics course

Source Fig 1-Fig 2: European Commission, Education, and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA), "Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)". "Eurydice". Available at: https://eacea.ec.europa.eu/national-policies/eurydice/index_en.php_en

From the aggregate of those countries that include ethics and bioethics courses in their primary curricula, either as a school choice or a student choice, either as a compulsory or a non compulsory curriculum subject, the majority raises the importance of Ethics and Bioethics as a distinct educational object (20/24countries) and the minority (4/24countries) as an addition into the existing curricula (table2) (fig3). It is also accepted that the content of the curricula is similar to the main characteristics and points of ethics and bioethics literacy, independently of the course name. Thus, social, personal, ethics, bioethics, morals, sex, gender, health, and equality education contain the core and the purposes of ethics and bioethics literacy.

Table 2.

Ethics and Bioethics as a distinct educational object or as an addition to existing curricula

1.	Austria	addition into existing curricula
2.	Belgium Flemish Community	separate educational object
3.	Belgium German Speaking Community	separate educational object
4.	Belgium French Community	separate educational object
5.	Cyprus	separate educational object
6.	Denmark	addition into existing curricula
7.	Estonia	separate educational object
8.	Finland	separate educational object
9.	France	separate educational object
10.	Germany	separate educational object
11.	Hungary	separate educational object
12.	Iceland	separate educational object
13.	Ireland	addition into existing curricula
14.	Lithuania	addition into existing curricula
15.	Luxembourg	separate educational object
16.	Malta	separate educational object
17.	Portugal	separate educational object
18.	Republic of North Macedonia	separate educational object
19.	Slovakia	separate educational object

20.	Slovenia	separate educational object
21.	United Kingdom England	separate educational object
22.	The United Kingdom Northern Ireland	separate educational object
23.	United Kingdom Scotland	separate educational object
24.	United Kingdom Wales	separate educational object

Source: European Commission, Education, and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA), “Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)”. “Eurydice”. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/index_en.php_en

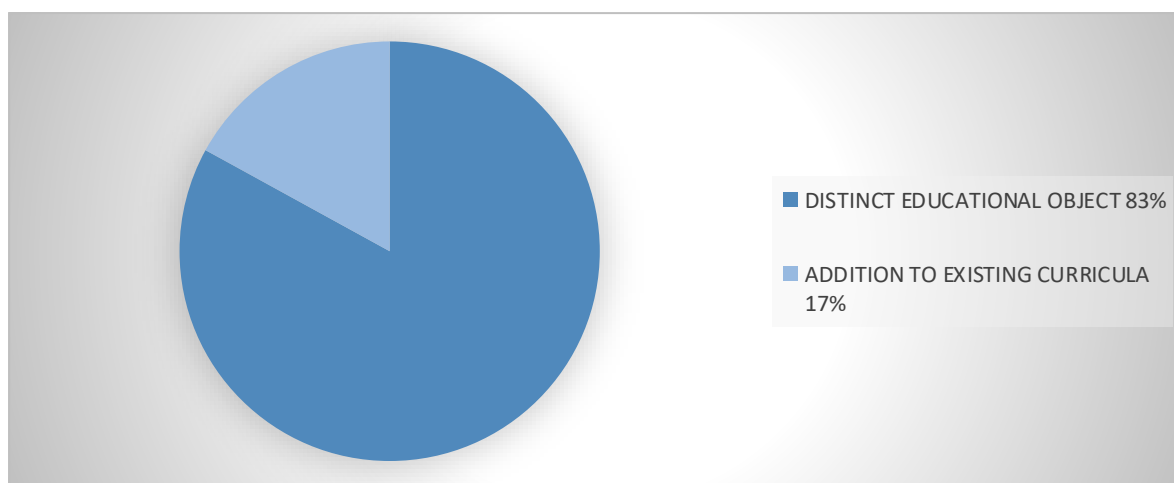


Figure 3. Ethics and Bioethics as a distinct educational object or as an addition to existing curricula (integrated subject)

Source: European Commission, Education, and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA), “Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)”. “Eurydice”. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/index_en.php_en

3.2. The Case of Greece

Reading behind the statistics, it can be easily realized the difference between the minority and the majority of European countries, those which do not have Established Ethics or Bioethics courses for Primary Education and those that already have established Ethics and Bioethics in their educational curricula for the elementary school. As it was already reported in that survey in several countries chances of choice of educational curricula are offered to students by the school or by region and that policy is more alternative to new fields, just like Bioethics.

Greece belongs to the minority of countries that do not have established yet educational policies including Ethics or Bioethics courses during Elementary school. Some of the most popular scientific subjects that refer to Ethics and Bioethics exist as an addendum in Science courses books, Physics or Biology.

Therefore, we have to mention that the Greek Educational System for Primary Education does not give the option of choosing another educational subject like Ethics or Bioethics. Every student primarily, in every region of our country would be educated in the subjects of the compulsory curriculum which is common for everyone, and is designed by the policymakers. Every change in our educational system for an elementary school during the last decades concerns the hours per subject, the determination of the units per grade or per subject, and the placement of educators for every educational field. It is a fact that in the last

few years there are steps forward to a change in the educational subjects for Primary Education with the creation of a new course called Skills Laboratory, since September 2021, which is taught to all grades of elementary school, but still cannot be evaluated.

Moreover, there are several obstacles to the promotion of Ethics and Bioethics literacy, responsible for that reality. It is characteristic that those obstacles are common for every country which does not establish yet an Ethics or Bioethics course for primary education.

As Lindqvist (2001) notes there is a total lack of national policy vision for Education and also confusion about the appropriate pedagogical approach to ethical issues. Drawing from this theory we have to claim that there is a need primarily to educate the teachers about the necessity of ethics and bioethics literacy. They need to have all the cognitive and pedagogical equipment to support adequately their role. Ideally, their equipment should not concern only their theoretical background but practically their occupation with several ethical issues during their studies. Moreover, it is a fact that the students of every faculty all over the world should manage ethical issues during their studies. As Have (2006) supports with this approach, they are going to realize the responsibility of their science and develop themselves, by respecting the moral principles. The example of Cornell University in the USA is the feature: the students should contain their empirical administration with ethical issues, to bring to completion their studies (Theologou, 2014).

Afterward, the lack of the brainstorming of some "good practices" by those who proceed in the field of ethics and bioethics literacy and also the lack of the course material which has to be created by the beginning is a crucial obstacle.

Finally, it is important to report that the most serious of those obstacles is the mentality of the citizens in every country, their beliefs, their attitudes, and their taboos. Some of the ethical and bioethical issues concern some essentials and the citizen's maturity in the way to manage those issues is doubtful. As it concerns the student's ethics and bioethics education, many parents, educators, and members of the community react in that perspective. As Hess (2014) observes, *"...the public often doesn't want students to her points of view that are different from than their own. Parents, in particular, sometimes believe that it's important that schools...perfectly reflect the values in the home..."*.

In conclusion, the reality through the statistics proves that in many European countries there is a lack of empirical studies on teaching Ethics and Bioethics in Primary Education and it is important to audit the surveys abroad. There is not an organized system on how the university students of Pedagogy are trained to become teachers in Bioethics. Even the Science or Biology teachers do not gain the knowledge on how to teach Bioethics and build the background needed to support that educational policy. Furthermore, in many European countries, such as Greece, there is not yet the political volition the creation of an ethics and bioethics course for Primary Education. The common obstacles in the minority of the European countries which frustrate the ethical and bioethical literacy in elementary school should be exceeded by realizing the importance of ethics and bioethics literacy for all grades, not only primarily. Finally, it is crucial to exchange all the "good practices" which concern ethics and bioethics literacy to promote them easily to all the grades of the European schools.

4. Conclusions

The Greek National Bioethics Commission is the official independent advisory body of experts, having as the main goal to advance the Bioethics core to all stakeholders. It is important to be understood that National Bioethics Commission is the authority with the major responsibility to encourage and support Bioethics education, organize conferences and

workshops, collect evidence and create the national Bioethics database. All the information selected should be used by the education policymakers in Greece to first realize the necessity of Ethics and Bioethics literacy for students. Greek students should be thoroughly prepared to compete against bioethical challenges as individuals, professionals, family, and community members in the future, not just once in their lifetime. They have to be prepared to react as responsible members of our world.

It is fundamental to bridge the gap between Greece to the majority of European countries by the creation of new teaching curricula that will contain Ethics and Bioethics courses as a distinct educational subject. It is needed to accept Commission's advice on how to create the new material for Primary Education, a dedicated material tested and suitable for each grade of the Elementary School. The content of the curricula should include appropriate questions, stories, moral games, role games, rule games, and collective activities about the selected ethical and bioethical module every time. These processes should be the beginning of mental alertness and mental elaboration for our students. Through the discourse in the classroom, children will have the opportunity to interact with teachers and classmates with targeted case studies.

It is also needed to prepare teachers to facilitate constructive ethical and bioethical discussions in their classrooms, by avoiding conflicts driven by different points of view among the students. This preparation will help them to encourage their students to critically think, respectfully listen to different opinions, and finally create their values by making the right ethical and bioethical decisions. At the same time, every well-prepared teacher could be capable to confront everyone's concerns about the necessity of ethical and bioethical literacy in elementary school.

References

- Baggini, J. – Fosl, P. (2014). *The tools of Ethics - Concepts and Methods in Ethics philosophy*. Translation, Preface, Comments: Theologou, K. Athens, Kastaniotis Publications.
- Booth, J.M. and Garrett, J.M. (2004). Instructors' practices in and attitudes toward teaching ethics in the genetics classroom. *Genetics*, 2004, 168:3:1111-7. <https://doi.org/10.1534/genetics.103.023077>
- Devis, M. (2015). Teaching and Evaluating Ethics Education, Fostering and Measuring Success. [Online]. Available: <http://www.bioethics.gov>
- Dragona-Monahou, M. (1995). *Modern Ethical Philosophy: English Thought*. Athens, Ellinika Grammata Publications.
- Dragona-Monahou, M. (2002), Ethics and Bioethics. *Science and Society: Review Political and Ethical Theory*, vol. 8-9, Ann-Fall 2002. p.p.1-26.
- European Commission, Education, and Youth Policy Analysis Unit in the Education, Audiovisual and Culture Executive Agency (EACEA), *Recommended Annual Instruction Time in Full-time Compulsory Education in Europe (2017/18)*. Eurydice. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/index_en.php_en
- Have, H.T. (2006). The activities of UNESCO in the area of ethics. *Kennedy Institute of Ethics Journal*, Vol 16, No 4, 333-351, by the Johns Hopkins University Press. <https://doi.org/10.1353/ken.2006.0024>

- Helland D. E. (2002). What is Bioethics? *Teaching Bioethics. Reports from a seminar*. Copenhagen, Nordic Council of Ministers. p.p.11-24.
- Hess, D.E. (2014). Deliberation and Bioethics education: Overview. Presentation to the Bioethics Commission. [Online]. Available: <http://bioethics.gov/node/4321>
- Klugland, H. (2002). Teaching Bioethics Group Report and Final Discussions. *Teaching Bioethics. Reports from a seminar*. Copenhagen, Nordic Council of Ministers. pp:135-141.
- Lehmann, L. (2014). Deliberation and Bioethics Education: Overview. Bioethics for every generation. Deliberation and Education in Health, Science and Technology. Presidential Commission for the Study of Bioethical Issues. Washington D.C. May 2016. [Online]. Available: <http://www.bioethics.gov>
- Levin, D. (2014). Deliberation and Bioethics Education: Overview. Bioethics for every generation. Deliberation and Education in Health, Science and Technology. Presidential Commission for the Study of Bioethical Issues. Washington D.C. May 2016. [Online]. Available: <https://bioethicsarchive.georgetown.edu/pcsbi/node/4321.html>
- Lindqvist, M. (2001). Education in Bioethics in Finland. *Teaching Bioethics. Reports from a seminar*. Copenhagen, Nordic Council of Ministers. pp:69-72.
- Macer, D. (2008), Moral Games for Teaching Bioethics. The UNESCO Chair in Bioethics.
- Nordic Committee of Bioethics, (2002). *Teaching Bioethics. Report from a seminar*. Copenhagen, Nordic Council of Ministers.
- Presidential Commission for the Study of Bioethical Issues, (2016). Bioethics for every generation. Deliberation and Education in Health, Science, and Technology. Washington D.C. [Online]. Available: <http://www.bioethics.gov/>
- Protopapadakis, E. (2018). Why Bioethics? *Bioethica*. National Committee Bioethics. Volume 4, Issue 1.
- Smetana, J.G. (1981). Preschool children's conceptions of moral and social rules. *Child Development*, 52 (4). p.p.1333-1336. <https://doi.org/10.2307/1129527>
- Zeidler, D.L. Walker, K.A. Ackett, W.A. Simmons M.L. (2002). Tangled up in views: Beliefs in the nature of science and responses to socioscientific dilemmas. *Science Education* 86(3). p.p. 343-367. <https://doi.org/10.1002/sce.10025>