GENETIC MODIFICATION AND EDUCATION, TEACHING STUDENTS OF MORAL SKILLS

Makhmudova Aziza Nugmanovna
Samarkand State Medical University
Head of the Department of Social and Humanitarian Sciences
PhD, Professor

Abstract: This article is devoted to the issues of genetic modification and teaching ethical skills in the education system. The article considers the importance of teaching students the scientific basis and ethical aspects of genetic modification. It also discusses the history of genetic technologies, their role in education, and what pedagogical approaches should be used to help students make ethical decisions. The article provides detailed information on the impact of genetic modification on the education system and how to teach students ethical skills, based on modern scientific research and pedagogical practices.

Keywords: Genetic modification, ethical skills, education, bioethics, teaching students, genetic technologies.

Introduction

Innovations introduced by genetic modification technologies in the modern world require students to be provided not only with scientific knowledge, but also with ethical skills. Ethical issues related to genetic modification, including the interference with the DNA of humans and other living organisms, human rights, genetics, and heredity, are important in preparing young people for moral responsibility in society. Therefore, the education system should use pedagogical methods to explain to students the positive and negative aspects of these technologies and teach them to analyze them from a scientific and ethical perspective. This article discusses the issues of genetic modification and the formation of ethical skills in the education system.

1. Ethical foundations of genetic modification: Genetic modification technologies, especially new methods such as CRISPR-Cas9, have made it possible to change the genetic code of humans. Although these technologies have created great opportunities in the scientific, medical and agricultural fields, they also raise a number of ethical issues associated with them. For example, if genetic modification of humans can prevent hereditary diseases or introduce new traits into the organism, this process will lead to the emergence of new

ethical dilemmas in society. Teaching such technologies in education will help students analyze the ethical, social and environmental impacts of these processes.

2. Pedagogical approaches to teaching ethical skills: Pedagogical approaches play an important role in teaching the topics of genetic modification and bioethics. It is necessary to explain the scientific nature of these technologies to students, as well as teach them to evaluate them ethically. Pedagogical methods, including interactive discussions, case studies, and group work, can teach students to think about the positive and negative aspects of genetic technologies. It is also important to develop ethical criteria that will help students make ethical decisions.

3. Integration of genetic modification and the education system: The integration of genetic modification and bioethics into the education system does not limit itself to providing students with scientific information, but also provides them with a sense of moral responsibility. The education system should not only cover scientific theory when teaching these technologies, but also their practical and societal implications. Providing students with information about the development of these technologies and their impact on society encourages them to learn social responsibility and ethical evaluation.

4. The impact of genetic technologies on education: The role of genetic technologies in educating students and their impact on society raises many issues. Providing students with information about genetic modification and bioethics prepares them not only scientifically, but also from an ethical and social perspective. This shapes how students will use these technologies in the future and what ethical decisions they will make in this process.

5. Genetic modification and the responsibility of society:

The study of genetic modification in the education system creates an opportunity to provide students with not only scientific and ethical knowledge, but also an understanding of how these technologies should be used in society. Despite the negative effects of genetic modification, it also has its positive aspects. For example, it can be used to improve crops in agriculture or to treat hereditary diseases in medicine. However, the widespread use of these technologies requires responsibility in society, such as maintaining genetic equality, respecting human rights, and ensuring ecological balance.

In this context, teachers should help students understand the role of genetic modification in society, its ethical and social implications, and should also inform students about the benefits of the technology, as well as the concerns it poses.

6. The pedagogical role of ethical decision-making:

It is very important in the educational process to teach students to make decisions on complex ethical issues such as genetic modification and bioethics. This process, first of all, develops students' critical thinking, logical analysis and a sense of moral responsibility. For pedagogical approaches to be effective, teachers should show students real-life situations about genetic technologies and bioethics. Using these methods, students can be explained the criteria for ethical evaluation and their impact on society, allowing them to apply this knowledge in life.

7. The impact of genetic modification on students:

The introduction of modern genetic technologies into education not only provides students with scientific and technical knowledge, but also prepares them to make ethical decisions. When teaching genetic modification technologies, students think about the ethical aspects of changing the genetic code. At the same time, they understand what ethical measures should be taken in the development and application of genetic technologies. This process not only provides students with knowledge, but also teaches them to feel social responsibility in life and to determine their impact on the environment. Like all modern technologies, the fields of genetic modification and bioethics are associated with constant development and new discoveries. Technologies such as CRISPR-Cas9 are raising new ethical issues not only in the field of biotechnology, but also in bioethics, medicine and other scientific fields. Nowadays, it is important for the education system to teach students about these technologies, to warn them about the negative effects of these technologies, to approach ethical evaluation and to help them make decisions.

Conclusion

Genetic modification and bioethics are one of the main tools needed to teach students ethical skills in the education system. These technologies teach students to analyze in depth from a scientific, ethical, and social perspective. Explaining the negative and positive aspects of genetic modification helps students make ethical decisions. Also, teaching students responsibility and ethical responsibility in society through pedagogical approaches will affect how they use these technologies in the future.

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