

TEACHING SCIENTIFIC RESEARCH ETHICAL CONSIDERATIONS: OBSTACLES AND SOLUTIONS

by:

Diana Rose M. Gimpaya

Teacher I, Jose C. Payumo Jr. Memorial High School

Ethics is essential in the field of scientific study since it directs investigators to carry out investigations in a responsible and honest manner. It is crucial to teach ethical issues in scientific study, particularly in a time when scientific investigation and technology are developing at a breakneck pace. It guarantees that upcoming scientists, researchers, and even students studying the fundamentals of research will recognize the significance of carrying out investigations that uphold the welfare, rights, and dignity of people and society at large. However, there are a number of obstacles to overcome when incorporating these moral precepts into science instruction, as well as chances to put successful tactics into practice.

Resnik (2020) points out that the existence of intricate and unclear ethical quandaries is a major obstacle in the teaching of ethics. In contrast to technical areas of study, where precise protocols and guidelines are frequently adhered to, ethical issues can not have simple solutions. For example, a persistent ethical dilemma in research is how to balance scientific advancement with hazards to the environment or human subjects. It can be challenging to foster critical thinking and decision-making abilities in traditional, structured scientific lectures, but teaching students to navigate these "gray areas" calls for educators to acquire these abilities.

The disparity in ethical norms among various scientific disciplines and cultural contexts presents another difficulty. Every discipline has its own set of ethical rules, including biology, medicine, chemistry, and environmental science. Furthermore, opinions about what is morally right or wrong might be influenced by cultural variations.

Teachers must negotiate these differences and figure out how to impart moral values that apply to all situations while also taking into account cultural and discipline-specific quirks.

One major obstacle is that a heavy emphasis on technical skills frequently overshadows ethical teaching in science. Many curricula place a high priority on teaching theoretical knowledge, data analysis, and experimental design, leaving little time for a thorough discussion of ethical issues. Because of this, students can consider ethics to be an afterthought rather than an essential component of scientific research. Ethics must be made a key part of the research process and more smoothly incorporated into science curricula in order to address this.

Using case studies of actual ethical conundrums in scientific research is a useful tactic for overcoming these obstacles. Students can gain a greater understanding of the repercussions of unethical research procedures by looking at both historical and modern examples, such as the debates around genetic engineering, environmental degradation, or the abuse of artificial intelligence. Students can apply ethical concepts to actual circumstances through these case studies, which helps them comprehend the significance of ethics in research on a deeper level.

Promoting interdisciplinary education that blends science and ethics is another tactic. Students can gain a more comprehensive understanding of ethical issues by collaborating with departments of philosophy or social science. By pushing students to consider how research impacts people, communities, and the environment more broadly, this multidisciplinary approach can provide them the skills they need to critically think about the moral implications of their scientific work.

Furthermore, creating an atmosphere in the classroom where candid discussion of moral dilemmas is welcomed can greatly raise students' ethical consciousness. Teachers ought to establish areas where pupils are at ease debating moral issues and considering

opposing points of view. This improves their ability to reason ethically and makes them more aware of the difficulty of making moral decisions in research, which makes them more responsible and considerate.

To develop responsible researchers who are aware of the wider ramifications of their work, it is imperative to teach ethical considerations in scientific research. Teachers can use techniques like case studies, interdisciplinary learning, and open communication to address difficulties like ethical complexity, standard diversity, and the emphasis on technical skills. By doing this, they ensure that research benefits humankind in morally sound ways and equip students to handle the ethical dilemmas that they will unavoidably face in their scientific careers.

References:

Resnik, D. B. (2020). What is ethics in research & why is it important? National Institute of Environmental Health Sciences. Retrieved from <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>