

Inherent Ethical Challenges in Chemical Research

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Commentary

Chemistry is one of the branches of science that deals with the substances of which matter is made up of, the investigation on their properties and reactions, and the utility of such reactions to form new products which will be useful to the common man and the society at large. Ethics can be considered as the discipline dealing with what is good and bad and with moral duty and obligation. Research, in simple terms can be defined as a detailed study of a subject, especially in order to discover (new) information a (new) understanding. As ethics paves way for the most useful discovery/invention for human beings with minimum risks involved in the process, it has to be given primary importance. Hence in any type of research and especially in Chemical Research a deep understanding of ethics and a good knowledge of Philosophy are essential to balance the good from the evil. Hence chemical research requires a lot of discussion with experts in Chemistry, Ethics and Philosophy. If any type of research is aimed to produce the results it intended to establish should involve the researchers to be well versed in Chemistry, ethics and philosophy. In order to achieve this curriculum of research methodology should include relevant topics in ethics and philosophy in addition to the knowledge in the discipline research is focused. It is not necessary to study the entire course in Philosophy and Ethics but the basics of them which will make the researcher appreciate the values involved in the research undertaken.

The simple questions that can be posed by the researcher by himself to justify his research, which is going to be an eye opener for further researches, may be as:

- Is the TOPIC chosen for research is worth researching?
- Am I fully equipped with the advantages of my research?

- Am I fully expertise with the methodology of my current research?
- Am I aware of the minimum risks that are involved in this research and the methods to overcome them?
- Is the topic relevant to the local needs of my society?
- Have I discussed at length with the research supervisor, philosophers and ethicists?
- Am I very curious of publications or applying for patent rights?
- Will my family expect any financial support from me during the tenure of research?
- Am I very clear of completing the research by the stipulated time?
- What positive impact will my findings make in the vast field of Chemistry?

These are not the only questions to be reflected and the list is exhaustive according to the thirst of the researcher.

If the researcher is involved in pursuing a basic course in Bioethics then the following broad questions will broaden the horizon of research acceptable to the large society of human kind.

- Is my research gives me autonomy to pursue and is not infringing on other's autonomy?
- Am I following the path of Justice in my research?
- Is my research beneficial for the society?
- Are there any non-maleficence actors that have to be promoted?

Is there any violation of Human Dignity practices that will affect the local as well as the global. In this world scenario of stiff competition for research in Chemistry and research publications if the researcher is able to follow the path of ethics the researcher will shine before his contemporaries and be a role model to the younger generation of scholars.