

OPINION

SCIENCE PHILOSOPHY AND CRITICAL ATTITUDE OF MEDICAL STUDENTS

Science philosophy is the branch of philosophy focusing on scientific principles. The course of science philosophy has a mission to introduce students with ontology, epistemology, and science axiology by increasing their curiosity and eagerness to search and obtain additional benefits. Both may result in the growth of critical, skeptical, analytical, and systematical attitude. Science philosophy develops scientific reasoning as the manifestation of logics. In general, there are two types of reasoning used in deriving conclusion, i.e., deductive and inductive reasoning. Deductive reasoning is employed to develop concept of solution based on existing theories to find coherence truth, while inductive reasoning is used to generalize research findings.

Research is one type of scientific activities to develop science and technology. A number of steps in the development of research are regarded as difficult ones. First, the step during which we criticize a phenomenon to create a problem to be investigated. Second, the step when we use deductive reasoning to create conceptual framework. Third, the step of empiricizing variables to become data, and, fourth, the step when we carry out synthesizing to produce a theory or technology to support or improve the existing ones or even to create the new ones. These steps are regarded difficult because students, particularly in medical schools, are accustomed to receive courses only to the extent of understanding established theories. They have not reached the extent of curiosity to find alternative answers as a manifestation of innovativeness.

Science philosophy is one of the knowledge taught to the students, including undergraduate students in medical schools, for that they may have opportunities to optimally develop their curiosity to produce a critical attitude in reasoning. If their curiosity has been improved, they may have skeptical attitude that may finally lead to analytical as well as systematical attitude. Science philosophy is aimed to provide understanding to the students on what science is (ontology), how science is established (epistemology), and what the objectives of the science are (axiology). Research is an activity to train student to apply their understanding of various topics in science philosophy, particularly scientific methods and scientific reasoning that serve as foundation for research methods. Having early understanding of these issues, the students may well realize the important role of research in increasing their curiosity, which is imperative in the development of both science and technology. In addition, science philosophy may also widen the students' insight in their capability to provide strong and responsible scientific arguments in scientific debates to defend scientific truth in the framework of scientific atmosphere. By so doing, the students may realize that knowledge is a product of human ratio that holds a tentative truth and require improvement at all times. This awareness should always be kept in mind and internalized within the students themselves, as they are those who hold responsibility in the development of science and technology in the future. We all know that a country will develop rapidly if they have qualified human resources, and among them are researchers. In fact, countries with bright and brilliant researchers will always become leaders in progress and development. Have we all realized this?

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