Letter to the Editor

History and Philosophy of Science and Technology: The Driving force of Developing Innovative Creativity

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How philosophers and some scholars who had learned about philosophy in the past became scientists is an important question that arises in the study of the development of innovative creativity. Generally, philosophy is the fundamental basis on which the results of the empirical sciences are based to formulate theories and theories in subjects that are common to any field. Therefore, philosophy and the world can be interconnected with any science. Western scholars who clearly identified this connection were anxious to analyze and study from different angles how this connection could occur. It is understood that science explains how things happen, while philosophy explains why things happen, as an important link between philosophy and science. Theories in any field are created on a philosophical basis, and the theory operates in the material world through the methodology. This is because theories based on the basic tenets of philosophy describe the basic form or realities and the nature of objects of the physical world and this is largely an unprejudiced analysis only for the natural sciences of the world. Philosophy is the desire for wisdom or the pursuit of absolute reality. Hence, the only discipline that defines it as the desire for wisdom is philosophy, which means that every scientist, researcher, and creator is automatically engaged in creative activities to the extent that they pursue knowledge or wisdom.

Based on the above analysis, the evolution of science and technology has been built on a broad philosophical basis, with Western scholars recognizing that reconciliation as the history and philosophy of science and technology, which was recently developed in many engineering and technology institutions around the world to develop critical thinking and innovative ideas that provide a powerful platform to create the next steps based on scientific and technological transformation. From the discovery of the wheel by the pre-civilized man of the

world to the present day, innovations on various levels can be seen everywhere in the world. Each of those products is based on a certain technology, and innovation and is intertwined with the scientific and technological streams, as well as the social sciences such as history, sociology, management, and economics. The basis of the rapid social and technological changes that have shaped the world today is the Industrial Revolution, which began in the 18th century and was a period of great innovation, many of the tools we see today are the inventions of the Industrial Revolution. The enlightenment required for this was an intellectual process and the most extraordinary mind of scientific knowledge and the scholarly debate led to the expansion of the scientific basis of free philosophical knowledge and its practical analysis, which had been in use for centuries.

The past view that innovation is only to adapt to social needs has been defeated in today's society and it has become the modern acceptance that it should be equally associated with creativity [1]. Thus, traditional innovation can often be defined as a technological input necessary to maintain the current system of the past. Innovation in today's world is an idea that can be seen as a popular topic in government policy-centric and higher education reforms and is often part of the vocabulary used in all engineering and technical academies. On the other hand, innovation has become a symbol of modern society, a panacea for many problems, and a phenomenon that needs to be studied [1]. Still, it does not seem to pay much attention to whether the criteria or phenomena required for it to function successfully are perfect. For example, some suggest that numerous drugs used to treat psychiatric and neurological conditions should be prescribed to healthy people as a cognitive enhancement technology to improve innovative abilities [2]. According to the sociological interpretation of this concern, every person should be used external physical motivations to cognize their hidden innovative potential. But the world has now realized that developing the creative dimension of innovation cannot be achieved through such external means.

In the philosophy of technology, many scholars who have studied this approach have attempted to analyze the philosophical impact of this technological development and upheaval based on different streams [3]. Technology can be defined as an attempt to bring the world closer to what it wants to be and to understand the world as science exists. The structured process that moves through the design process to the relevant goals creates the essence of using technology. From that point of view, a plan or prototype cannot be considered the final product of engineering design. Scientific knowledge is important for every design process and describes the behaviour of the components and the knowledge and use of the materials they contain. Therefore, this scientific knowledge is often generated by technology through engineering, and in addition to that knowledge, much more knowledge is required in engineering design. Primarily based on this discussion, the engineering approach to the philosophy of technology is closely related to the philosophy of science, with a greater focus on epistemology, which systematically examines innovation and related design and design applications.

Philosophy has provided the basis for developing other sciences since ancient times, through which it has offered conceptual contributions to creating new concepts and innovative solutions for various sciences. Consequently, the basic theoretical discoveries of modern physics and chemistry, which were introduced on a broader philosophical background, developed into the mid-nineteenth century, when large-scale industrial production and technological revolution took place. Even so, since the middle of the nineteenth century, there has been no significant or real radical technological innovation independent of the fundamental discoveries of basic science, and the technological world has been stuck in a desert of creative thinking, known as the so-called applied and engineering sciences. Philosophy is a partner in every intellectual subject and philosophers create pre-conceptual questions that expand new concepts, new interpretations, and solutions spaces, but some philosophical research programs affect the pace of technological development at different levels. The best example of this is the modern computer. Its basic concept was created by the Turin machine, a conceptual analysis of Alan Turing's calculations [4]. Turin provided us with a useful abstract for a computer device, and in addition to the philosophical success, the cumulative effect of this intellectual tradition is that over the years, perhaps centuries, the computer will continue to develop in various ways, but it is still technically possible to take another step forward from that concept nevertheless, It is not clear whether the world is ready. It shows that it has taken an astonishing time for inventions, that inventions and intellectual discoveries are generally complicated, and that it may take centuries for humanity to find something that will teach future schoolchildren.

Philosophy provides conceptual foundations for theoretical knowledge. Its main idea is to create a new vision and concepts that can influence the advancement of technology in that philosophy. Engineers and technologists with the philosophical intellect of science and technology are more ambitious than philosophers. Realizing this, Western technology researchers see the empirical turns between various developments in the field of technology over the last few decades as the most enduring influence on the trajectory of contemporary research. Therefore, it is necessary to study in depth which philosophical research has the greatest impact on changing the trajectory of civilization on its success.

References

[1] B. Godin, In the Shadow of Schumpeter: W. Rupert Maclaurin and the Study of Technological Innovation, *Minerva*, **2008**, 46 (3), 343-360.
[2] H. Greely et al. Towards Responsible Use of Cognitive Enhancing Drugs by the Healthy, *Nature*, **2008**, 456, 702-705.
[3] A. C. Reydon Thomas, Philosophy of Technology, Internet Encyclopaedia of Philosophy, **2022**
[4] A. Jeremy, V. Brattka. Computability and analysis: The legacy of Alan Turing, Turing's Legacy: Development of Turning's Ideas and Logic, Cambridge University Press, **2014.**