

## PHILOSOPHY IN THE DEVELOPMENT OF SCIENTIFIC METHODS

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**ABSTRACT :** Philosophy is the science of seeking truth. The truth that is sought from each person is different. The truth as to what is being sought is not always the same and not always different. When something is good for oneself, then we will say it is true, that is also the truth that is believed. However, every truth needs to be true, not only by oneself, but also by others in general. Truth must be representative or must represent. Therefore, the truth needs to be tested and proven through research. The research was conducted using the scientific method. The scientific method is a way to facilitate and focus on proving the truth. So there is a relationship between philosophy as a seeker of truth with scientific research methods to prove the truth. So that the truth can be recognized by everyone, becoming a science that can be adopted or adapted. Science is owned to add insight in order to improve one's intellectual. So that people do not just say, but there are basics or foundations in acknowledging or justifying any opinion. The truth that is proven representatively, that is the truth that has become science, which can be accepted by everyone, after going through a research

**KEYWORDS:** *philosophy; method; scientific*

### I. INTRODUCTION

Philosophy is the science of seeking truth. The truth that is sought in this world, makes everyone find out, what kind of truth is happening in this world. It makes everyone unconsciously investigate and research what is the essence of life. Why do we live in the world? Why do we live and one day we will all die. When contemplating alone, for people who think, will definitely wonder about it. In this life there are many ups and downs that happen to every human being. Every day there are events, both good and bad, that happen to us, and to the people around us. In self-reflection, we must be wondering, why sometimes the heart feels confused, why do we really want something and don't want something.

Why is everyone chasing their ambitions to fulfill their needs. Is that true happiness. Turns out it wasn't either. Happiness that happens to you, it only happens for a few moments or a few moments. After that the feeling is gone again, then sometimes comes the feeling of confusion, fear, sadness, a sense of lack of self-acceptance and starting to compare ourselves with others who we think are luckier. However, when we investigate further into what happens to other people, it turns out that when we know the comparison, we finally realize that everyone has their own destiny in life. Experiencing the same thing as humans in general. So, finally we realize and accept everything that happens. As humans, we are just like puppets who only have to do what He wants, Allah subhanahuwataalla, God Almighty.

Without realizing what is happening to us, we want to know. What do people actually do and want people to do. Why do people do it? What do you want to pursue? what kind of truth you want to prove. All that requires a process and time to prove it through research. The search for truth must be proven through research. The purpose of this study is to explain the function of the philosophy of science in the development of the scientific method. Where the philosophy of science is seen as a science, namely an assumption such as how to think, how the empirical results are achieved, and where the limits are. While the scientific method explains how the development of today's science is abductive, deductive and inductive. So that researchers raise research questions about how the results achieved in knowledge? To answer the research question, the researcher used Library Research with a literacy approach and critical analysis. So that this research results in the philosophy of science and scientific methods complementing and expanding knowledge, creating disciplined understanding in scientific work, as well as increasing motivation as a researcher to carry out research with good scientific methods.

## II. RESEARCH PURPOSES

To know the philosophy of science in the development of the scientific method

### RESEARCH METHODS

The research method uses the literature review, where researchers collect data from several of the latest journals for the last four years, namely 2019-2022 which has something to do with the philosophy of science and scientific methods, books, and other materials from the mass media and from the internet as needed according to the topic. What is meant by literature review according to Snyder (2019: 333) says literature review is a research methodology that aims to collect and take the essence of previous research and analyze several overviews of experts written in the text.

## III. DISCUSSION

Philosophy is the science of seeking truth. Thinking is a human activity to find the truth. What is called true by one person may not necessarily be true for another. Humans are the only creatures capable of developing knowledge because they have the ability to reason. Humans know what is good and what is bad, what is beautiful and what is ugly through the reasoning process carried out. Knowledge which is a thinking activity has certain characteristics in finding the truth. Reasoning is a thought process that produces knowledge. In order for the knowledge produced by reasoning to have a basis of truth, the thought process must be carried out in a certain way. A new conclusion is considered valid if the conclusion is drawn according to a certain way, which is called logic. Ivonne Ruth Vitamaya (2021).

According to Mardinal Tarigan, et al (2021), Muliono (2019) that the Philosophy of Science is defined as a theory about the nature of the Philosophy of Science, which includes everything from basic building materials and materials to philosophical affirmations and theories derived from the Philosophy of Science itself. As a result, Philosophy of Science problems are classical, contemporary, and context specific. The problem of science and how to obtain it, as well as the problem of human existence today (which is related to the development of science) are all discussed in the problems of science and contemporary science problems. The principles and orientations of the Indonesian Philosophy of Science still have to be analyzed and interpreted given the dynamic and developing Indonesian disciplines. It is not certain that the ideas and principles adopted by Indonesian scholars from various fields of study, both theorists and practitioners, form the basis for the country's education system. As a result, the emerging paradigm shift has not been fully realized in the real world. Mardinal Tarigan 1, Dinda Gustiana2, et al (2021).

He philosophy of science provides a logical basis for research methodology. A scientific research method, must be justified in a logical-rational manner. Therefore, the contribution of the philosophy of science in research methods is able to provide a logical and systematic basis. Methodology is a science or field of philosophy that discusses ways to acquire knowledge. Methodology belongs to a field called "tool studies" or the science of "tools", meaning that science serves as a "tool" for other sciences. While the science that discusses the material, material or content of the lesson is called "content studies". Content studies are subjects that teach facts, materials or information about certain subjects/courses. Imam Subekti1 (2021)

According to Milasari, the first is that the philosophy of science provides guidelines for someone to distinguish between all scientific and non-scientific problems, so that solutions are found for these problems. Second, the function of the philosophy of science in the development of the scientific method can provide a logical study of each discipline in the field and can provide a clear orientation and value for each discipline. Third, through the philosophy of science, instructions are found with reflective methods as well as research and reasoning so that one can balance logic, experience, reason and religion in achieving a prosperous life. Fourth, the philosophy of science provides the basis for the scientific method, because the scientific method developed must be logically and rationally accountable, so that it can be used in general. Milasari (2021) describe that rationalism is a statement of basic axioms used to build systems thoughts that come from ideas. The idea in question must be clear, firm, and come from thoughts human beings—While empiricism is a view in which all or part of Knowledge is based on experience using the senses. Mutiani1, Disman2, et all (2022) Humans in general do not show what he looks like. not really looking for the ultimate truth, but rather for himself and the power he wants. defend his opinion, to show who he is. but the opinion of all the philosophers said, basically humans should be proud of themselves and respect themselves. Paul S. Loeb1 (2021) Philosophy is closely related to the tradition of Western thought. Until now scientists agree that philosophy first appeared in Greece around the 7th century BC. At the beginning of the emergence of the development of philosophy, science is still an inseparable part of philosophy. Philosophy is also a study of all phenomena of human life and thinking critically which are described in basic concepts. Adi Priyanto1(2021)

Critical thinking is a process that allows an individual to make an informed decision between conflicting claims. It involves the skills and dispositions (e.g. attitude and motivation) to evaluate the reliability and relevance of evidence, to identify arguments, to analyze, interpret and synthesize data from multiple sources, to draw valid conclusions and address opposing points of view. Critical thinking also involves procedural knowledge and propositional knowledge. Critical thinking has a long history starting with thinking

and teaching from Socrates to the 21st century. In the view of ontology, epistemology and axiology can be found in different areas of critical thinking in science. SamuelUnwakoly (2022) The basic concept of accepting observation reports or basic statements, will override any assumptions that scientists draw conclusions by induction. Of course, Popper, with his views on the psychology of learning, would say that such a thing would not happen, although he does support that the subjective experience of the scientist played a role in the initial assertion and gradual acceptance of a report. Yulia Tri Samiha (2022) This research resulted in the philosophy of science and scientific method complementing and expanding knowledge, creating disciplined understanding in scientific work, as well as increasing motivation as a researcher to carry out research with good scientific methods. Abdullah Affandi Muhammad FirzaAlaydrus (2019)

The characteristics of philosophical thinking include radical thinking, looking for principles, hunting, truth, seeking clarity, and rational thinking. Thinking philosophy is related to reasoning, logic. Philosophy of science is a thinking process that produces knowledge so that the knowledge generated through reasoning has the essence of truth, then a certain way is needed in the thinking process. the. AzzahraNatasya 1, Tiara Putri 2, et al (2022) Contribution of the Philosophy of Science in the development of science In general, the philosophy of science has been able to develop science, and science is able to advance technology, and technology is a means used by humans socially and individually to fulfill their needs. The discussion of Philosophy of Science and Epistemology will also provide in-depth information about the history of the development of science and even technology, so that it will provide historical awareness, provide strategic considerations in seeing the development of the times, he will be able to understand the epistemological world views (assumptions) contained in linking science. philosophy with research, where the two things are closely related to each other. Inasari (2022)

It takes practice and habituation that is carried out continuously in philosophical thinking so that every thought or problem or substance will get deep scrutiny to reach the truth of the answer, in the right way as a form of love. Philosophers will seek and find the most basic principles of a reality. Greek philosophers are known as natural philosophers. They will observe the universe with diversity, the question arises for them "is not behind the diversity there is only one principle?", from there the search for the origin of the universe began. Third, hunting for the truth, the truth that is sought or hunted is the real truth to all reality and things that can be disputed. It is concluded that philosophizing has the meaning of hunting for the truth about something. Fourth, seeking clarity must endeavor to earnestly eliminate anything that is vague, obscure, dark, and contains question marks, without anything certain that philosophy becomes abstract or mystical. Fifth, think rationally. Rational thinking is thinking systematically, critically, and logically.

#### IV. CONCLUSION

There is a close relationship between the philosophy of science and the development of the scientific method. The philosophy of science is inseparable from the rules of science, with the scientific method used. Meanwhile, with scientific research using the scientific method, it will bring up new knowledge, where science is something truth, just like philosophy whose function is to seek the truth. Likewise, the scientific method is a way to prove the existence of this truth.

#### REFERENSI

- [1]. Abdullah Affandi, M. F. (2019). Fungsi Filsafat Ilmu Dalam Pengembangan Metode Ilmiah. *Jurnal al-Hikmah vol. 7 no. 1 Maret 2019/80~85*. Dipetik Oktober 31, 2022, dari file:///C:/Users/BBPK%20Ciloto%204/Downloads/91-186-2-PB-1.pdf
- [2]. Adi Priyanto<sup>1</sup>, S. M. (2021). Analisis Kajian Filsafat Ilmu Sosial di Era 4.0. *Jurnal Pendidikan Tambusai 1*(Volume 5 Nomor 3 Tahun 2021), Halaman 10484-10488. Dipetik Oktober 25, 2022
- [3]. Azzahra Natasya 1, T. P. (2022). Filsafat Ilmu dan Pengembangan Metode Ilmiah. *Maha Guru*, Vol. 3 No. 1 year (2022) page 167 -179. Dipetik 10 29, 2022
- [4]. Hardanti, B. W. (2020). Landasan Ontologis, Aksiologis, Epistemologis Aliran. *Jurnal Pendidikan dan Pembelajaran*. Dipetik Agustus 30, 2022, dari Email:bwidiyahardanti@gmail.com,file:///C:/Users/BBPK%20Ciloto%204/Downloads/320-846-1-SM.pdf
- [5]. Imam Subekti<sup>1</sup>, A. S. (2021). Kontribusi Filsafat Ilmu dalam Penelitian Ilmiah dan. *Jurnal Filsafat Indonesia*, Vol 4 No 3 Tahun 2021. Dipetik Oktober 25, 2022
- [6]. Loeb<sup>1</sup>, P. S. (2021, November). The Role of Values in Nietzsche's Metaphilosophy. *The Agonist*, Volume: 15, No:3, pp. 165 – 199. doi:DOI: <https://doi.org/10.33182/agon.v15i3.1903>
- [7]. Mahfud Junaedi, M. M. (2019). *Pengembangan Paradigma Keilmuan Perspektif Epistemologi Islam* (Cetakan ke-1, Oktober 2019 ed.). (M. S. Fuad, Penyunt.) Semarang, Jawa Tengah, Indonesia: Pranada Media. Dipetik Agustus 30, 2022,darihttps://books.google.co.id/books?hl=id&lr=&id=\_g7uDwAAQBAJ&oi=fnd&pg=PP1&dq=M

- embangun+Paradigma+Science+Masa+Depan&ots=HoW8875CJu&sig=EZ2PUuEwPI0pRjVUq2TZRtvZATw&redir\_esc=y#
- [8]. Mardinal Tarigan 1, D. G. (2022). Arah dan Orientasi Filsafat Ilmu di Indonesia. *Maha Guru*(Vol. 3 No. 1 Year (2022) page 159-168). Dipetik Oktober 30, 2022
- [9]. Milasari1, B. A. (2021). Filsafat Ilmu dan Pengembangan Metode Ilmiah. *Jurnal Filsafat Indonesia, Vol 4 No 3 Tahun 2021*. Dipetik Oktober 25, 2022
- [10]. Mutiani, D. E. (2022). Overview of Rationalism and Empiricism Philosophy in Social Studies Education. *The Innovation of Social Studies Journal*, (Vol. 3, (2), March 2022: 148-F156). doi: <https://doi.org/10.20527/iis>
- [11]. Samiha, Y. T. (2016). Standar Menilai Teori dalam Metode Ilmiah pada Kajian Filsafat Ilmu. *Medina-Te, Jurnal Studi Islam*(Volume 14, Nomor 2, Desember 2016). Dipetik Oktober 31, 2022
- [12]. Sari. (2022). Kontribusi Filsafat Ilmu dalam Penelitian Ilmiah dan Perkembangan Ilmu Pengetahuan. *usat Publikasi S-1 Pendidikan IPS FKIP ULM*(Vol 1No 1(2022): Filsafat Ilmu-AKBK3402). Dipetik Oktober 29, 2022
- [13]. Situmeang, I. R. (2021). Hakikat Filsafat Ilmu dan Pendidikan dalam Kajian Filsafat Ilmu Pengetahuan. *Jurnal IKRA-ITH Humaniora*, Vol 5 No 1 Bulan Maret 2021. Dipetik Oktober 26, 2022, dari [ivonneruthsitumeang@gmail.com](mailto:ivonneruthsitumeang@gmail.com)
- [14]. Unwakoly1, S. (2022). Berpikir Kritis dalam Filsafat Ilmu: Kajian dalam Ontologi, Epistemologi, dan Aksiologi. *Jurnal Filsafat Indonesia*,(Diterima: 23-12-2021 Direview: 23-12-2021 Publikasi: 30-06-2022), Vol 5 No 2 Tahun 2022. Dipetik Oktober 26, 2022