

Teaching Philosophy as Basic Course a Personal Reflection

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ABSTRAK: Mengajar filsafat sebagai sebuah mata kuliah dasar di sebuah Universitas merupakan sebuah pengalaman yang khas yang tidak dimiliki oleh para dosen yang sudah in line dengan pengembangan keilmuannya. Tulisan ini mencoba mengungkapkan pengalaman penulis tentang keterlibatannya dalam menangani filsafat ilmu pengetahuan, etika dan filsafat yang menyentuh masalah keilmuan dan kebudayaan. Dalam rangka peneerdasan kehidupan bangsa, filsafat memiliki target-target yang jarang diperhatikan oleh pengelola ilmu pengetahuan. Melalui mata kuliah tersebut di atas, filsafat dapat membantu pengembangan nalar keilmuan, membawa ilmuwan bergumul dengan masalah moral dan kebudayaan. Dan yang paling penting, filsafat dapat membuka mata setiap orang untuk membangun peradaban yang lebih demokratis dengan nalarnya yang kritis.

KATA KUNCI: Filsafat, ilmu pengetahuan, kesadaran moral, demokrasi, Pusat Pengembangan Etika Atma Jaya, Panca Sila.

ABSTRACT: Teaching philosophy as basic subject for students of different schools of the same university aims to prepare them with the discipline of abstract but universal and correct thinking. The experience about the job by philosophy teachers is quite different from theachers who do teach science according to their specialities in different schools of the same university. This essay reflects a personal experience of the writer in teaching philosophy of science, ethics, and other branch of philosophy according to the specific requirement of different schools in the same university. In connection with the end of a university formation, philosophy is granted to prepare students with both intellectual and moral expertise but often philosophical design for this end is not incorporated in science. The discrepancy between philosophy and science has become the concern of philosophy teacher to attract multidisciplinary curriculum design to keep university faithful to its main goal which is to make society becomes more rational and democratic.

KEY WORDS: *Philosophy, science, moral consciousness, democracy, Atma Jaya Center for Philosophy and Ethics, Pancasila.*

1. INTRODUCTION

Philosophy, as a reflective discipline, has a long history in Indonesia. Since the Dutch colonization, philosophy had been taught in several seminaries (both Moslem and Catholics) besides other subjects such as theology, sociology, and any other social sciences. In such schools, philosophy was taught as a gateway to pursue a rational thinking and scientific enterprise.

After the Indonesian independence in 1945, philosophy was taught in some private and public universities in Indonesia. Not only in a department of philosophy, the subject of philosophy was also taught in the department of social sciences and human sciences. In The Third National Science Congress (1985), philosophy was recommended to be part of the curriculum in the higher education aiming at addressing issues of scientific reasoning, of moral issues in scientific activities, and of its relationship with culture. Hoping that all students can build their own knowledge in scientific perspectives, philosophy, especially philosophy of science, has become the compulsory subject in higher education ever since.

The practice of teaching philosophy is more extensively and intensively found in Catholic Universities. With an intension to develop a dialogue between science and faith, philosophy has ever embedded in the curricula in all departments in the university. Logic, introduction to philosophy, philosophy of science, social philosophy, and ethics are taught as a reflection to science, profession, and life.

Whether this enterprise is successful or not, the challenge that should be shouldered by philosophy lecturers will be more complicated. The crucial thing lies in the fact that according to the curriculum, philosophy is a compulsory

subject that should be taken by all students who will take their major in science and technology. It is not surprising if the philosophy lecturers arise themselves the questions as to: How could I teach philosophy to the students who have no freedom in choosing philosophy? How can I teach philosophy to students who have no interest in it? Do *I* have any pragmatic reasons that philosophy still has contributions to the life of the students in their scientific orientation? Is a philosophical way of thinking relevant and interesting to students?

Most of the philosophy lecturers who claim themselves as the members of Atma Jaya Centre for Ethics propose a hypothesis that philosophy, as the way human beings get knowledge by asking question, will help students view their world in a wider perspective. This idea can be found explicitly in the working paper for “Pengantar Filsafat” (Introduction to Philosophy) written by K. Bertens. The same tone can be found in *Ilmu Pengetahuan* (Scientific Knowledge) a book written by A. Sonny Keraf and Mikhael Dua. They believe that as the gateway of a rational attitude, philosophy, in collaboration with other disciplines, can give a great contribution to human development both as a person and a social being.

The idea has its echo in the University of Atma Jaya as a whole. In her efforts to bear the value of Christianity, of Excellence, of Profesionalism, and of Caring, University of Atma Jaya is eager to defend the position that philosophy should be available for all students improving their rasional and critical mind. In this University we can find different philosophical subjects, such as: Philosophy of Economics and Business Ethics in the School of Business and Economics, Introduction of Philosophy and Professional Ethics in the School of Education and Language, Philosophy of Science and Ethics of Engineering

in the School of Engineering, Philosophy of Law and Ethics in the School of Law, Philosophy of Science, Philosophy of Man, and Professional Ethics in the School of Psychology, Humanities and Ethics in the School of Medicine, Logic and Bioethics in the School of Biotechnology, Logic, Philosophy of Panca Sila and Multiculturalism in Centre for Personality Development Courses.

This article is aiming to develop a personal reflection on philosophical subjects in which I am involving in my career as lecturer for more than ten years, especially in doing philosophy of science, ethics, and the philosophy of culture.

2. PHILOSOPHY AS BASIC COURSE

2.1. Philosophy of Science

Since 2004, I have been teaching philosophy of science in two schools: the School of Engineering and the School of Psychology. In such a period I have got opportunities to develop and deepen intensively, extensively and comprehensively the teaching materials in philosophy of science. Intensively, I focused on the problem of epistemology, ontology, and ethics of science. Extensively, I shared the ideas with the students from different disciplines examining the methodological implications for empirical sciences. And comprehensively, I landed the critical assessments while trying to find the meeting point among the different and specific characters of sciences.

I am not alone in developing this subject. Together with A. Sonny Keraf I wrote a book entitled *Ilmu Pengetahuan, sebuah Tinjauan Filsafat* (2001). After my publication of *Filsafat Ilmu Pengetahuan* (2007), my colleagues Aleksander Seran (with Soerjanto Poespowadojo, a emeritus professor from University

of Indonesia) and Yereimias Jena published their books in 2015. As far as the process is going on, I feel that philosophy is still a reflective way of thinking, even in the middle of scientific pursuits. In describing the event as it occurred, it emphasizes the deepest meaning of things which can be done by all human beings as Aristotle said, “all men by nature desire to know.” (*Metaphysics*, 980). The act of philosophical reflection is still needed whatever the scientific progress we have achieved. Such a reflection is naturally an exercise of “desire to know” which in turn opens our mind to the world of possibilities.

Philosophical reflection, therefore, can not be neglected in scientific efforts. Two centuries ago, Hegel associated the power of philosophical reflection with the Minerva owl which captures the objects in the distance with a keen and clear eyes, which turns its head to the left and the right as far as 140 degrees, which captures the target quickly, precisely, and clearly, despite the atmosphere of dark night. The owl metaphor tells me that philosophy is a rational inquiry concerning the essence of things, although we live in a large amount of scientific truths. As far as thinking is unique to humans, philosophy can be produced by every body. Martin Heidegger has proposed that philosophy is not an alien from human life involving abstract concepts, but a thinking activity which can be done by everyone, including in this case, my non philosophy-students. All humans can think and their genuine thoughts can make them free and open to the existence of reality in general and of scientific reality in particular.

I do understand that the analytical approach in science colors the whole discussion about life, politics, and even business. Under the influence of positivism, the normal science is paying attention to the data, hypothesis, causality, laws of nature, the problems of scientific discovery and scientific

justification. This procedural methodology, however, cannot touch the world as it should be. Even, it cannot reach the cultural reality which is not entirely explicit but full of symbols. Had scientist been interested in the problems of values, cosmology, evolution and human life, and the symbolic experience, he had to bust out of the methodological framework he built himself and entered the values and ethics that became the substance of culture.

With this critical assessment in mind, I managed to build a bridge from science to values by criticizing the methodological framework of science itself. I do believe that science does not only have the function of explaining the facts but also of understanding the reality of values and therefore must be sensitive to the values. As far as science attends itself to the truth, it will organize itself as a part of human understanding to the reality so as not to clash with the ethical and cultural values. This scientific and philosophical thinking is a piety of thought, so thinks Heidegger. We call it 'piety' because before reality, thinking is not an arrogant or dominating attitude, but an obedient and submissive attitude. To think philosophically of science and technology, therefore, means to listen to the reality of science and technology and all the related realities.

As every body may independently feel intimations of a particular potentiality (of reality), the scientific curiosity presupposes a kind of responsibility. Michael Polanyi once wrote that the pursuit of science has shown us that the knower is controlled by impersonal requirements. "His acts are personal judgments exercised responsibly with a view of reality with which he is seeking to establish contact. This holds for all seeking and finding of external truth." (*The Tacit Dimension*, 77) In the university, students who learn science are surrounded by a sea of information on which they must rely for

their enterprise. Therefore, they may regard their selected field as their ‘calling’ which necessarily includes their submission to the vast area of information and belief surrounding their selected field of inquiry.

Polanyi’s concept of scientific responsibility gets the same tone in the thoughts of Paul Feyerabend who is eager to criticize the domination of scientific method in twentieth century. In his Introduction to the Chinese Edition for his book *Against Method*, he writes: “I am not against a science so understood. Such a science is one of the most wonderful inventions of the human mind. But I am against ideologies that use the name of science for cultural murder.” (*Against Method*, 4). For Feyerabend, science is a cultural enterprise which develops itself according to the principle of freedom. In its efforts to seek the truth, it cannot be neutral. As a machine of human development, science is not just the personal claim to doing research, but more than that, it pursues the social function to serve collective reflection on human life. Under scientific freedom, the scientists are called to battle the ideologies for the sake of humanity, especially for the sake of the oppressed people in exploitative systems.

2.2. Ethics

The second source of philosophy which is taught as the academic material in Atma Jaya University is ethics. As far as I know the lecturers in Atma Jaya have developed this subject into three approaches. Most of our lecturers focus on the fundamental issues such as freedom, responsibility, values, and conscience. Around these themes, they explore some major ethical theories such as Kant’s categorical imperatives, Fr. Hegel’s *Sittlichkeit*, Jeremy Bentham’s concept of law, John Stuart Mill’s principle of utility and freedom, John

Rawls' justice as fairness, and Jurgen Habermas' discourse ethics. Although the topics seem to be difficult to the non-philosophy students, some scholars believe that the topics are the way to understand the essence of ethics. This approach is mostly practiced by the scholars who work in Atma Jaya Centre for Ethics. Starting with publication of *Etika*, a book written by K. Bertens in 1993, the members of the Centre have filled *Seri Filsafat Atma Jaya* and *Respons*, Journal of Social Ethics: Andre Ata Ujan on John Rawls' theory of justice, A. Sonny Keraf on Adam Smith's moral sympathy, Alexander Seran on Jurgen Habermas' Discourse Ethics.

Beside these fundamental issues, some lecturers focus on professional ethics. The group of lecturers who call themselves as professionals think that ethics should give response to some ethical issues in the fields of professions such as integrity, confidentiality, whistle blowing, relationship between professional and clients. Supported by many professional organizations, professional ethics becomes the main subject in many faculties like business, education, medicine, and engineering. This perspective is in line with the vision of our higher education: "to develop science and technology in consideration of humanities." (*R.I. Constitution* No. 12/2012). Some members of Atma Jaya Centre for Ethics involved in this approach: Agus Nugroho on business ethics, A. Sonny Keraf and R. Ristyanoro on environmental ethics, Mikhael Dua on ethics of engineering, T. Sintak Gunawan and Yeremias Jena on medical ethics, Febiana Rima Kainama and Aleksander Seran on ethics and law. But in doing professional ethics, they are accompanied by some scholars who have no background in philosophy but are supposed knowing better the practical issues in their professions as businessmen, psychologists, lawyers and doctors.

Along this programme emerges a new trend in ethics which is called descriptive ethics. This kind of ethics is developed by lecturers who have no background both in philosophy and in profession and are bound up with the Centre for Personality Development Courses. Granted by the empirical methodology and knowledge in social sciences, the scholars search the richness of moral values which are lived up by the people. According to this approach, ethics is not just a philosophical system but consists of code of morals which can be found in profession, community and society. From this perspective, ethics is the problems of management, sociology, political science, communication, and anthropology striving to understand the moral insights in society.

Many scholars think that the descriptive approach has its own values in developing ethics as a part of interdisciplinary study. According to this approach, morality is the social issues which should be understood in a descriptive-empirical ways. The empirical understading of values can help philosophy to argue the necessity of morality in the society. Thus, ethics can develop itself as a branch of philosophy, but in doing its critical attitude it needs a positive curiosity in order to enter the world of values.

Whatever approach we might pursue, the ethical discourse has its own function as a response to the multi-dimensional crises which can be found in many fields of life: politics, government, business, and social organization. The crises can be described in many ways. Soerjanto Poespowardojo and Alexander Seran (*Filsafat Ilmu Pengetahuan*, x-xii) mention some of them, e.g.:

- various wealth of our natural resources, like oil, natural gas, electrical energy, coal, gold and other minerals are managed largely by foreign companies;

- corruption behaviour is rampant in all institutions of government (executive, legislative, and judicial);
- social institutions and infrastructure management which focus in many areas of life is run in a shambles. Poor transportation infrastructure, poverty, social inequality, unemployment, violence, human rights violations, and criminality are only the consequences of this corruptive management.

Essentially speaking, the crises are derived from and refer to the crises of culture as the innermost layer of the whole durability of life of the nation and the source of self-reflection of society. The disarray of the overall management of the system and the values configuration reflect the faltering of the public perception of themselves against fellow humans or surrounding world and the mentality or character of a nation. And otherwise, the improved management of the constellation of cultural elements as a whole will give a decisive influence for improvement of the condition of the nation at large. This serious concern contains anxiety and hope in the hearts of the people who care with the fate of nation.

In the spirit of national reformation which started in 1998, many Indonesian scholars believe that the cultural recovery can be dealt with critical ethics. They believe that through critical discussion and growing the awareness and the rediscovery of the national identity, ethics becomes an intellectual breakthrough to penetrate the stagnation of mindset and attitudes in the social lives. They also believe that this critical attitude can dismantle the academic and scientific colonization. By paving the way for science and technology to

realize their authoritarian and dominating characters, ethics can help science and technology realizing their functions to develop themselves to be objective, communicative, rational and sensitive to the changes in reflective and rational mindset.

Moreover, ethics is aiming at developing and upholding the personal integrity and national morality. This intellectual breakthrough is relevant because the moral crises which clothed themselves in money fetishism or consumerism and pragmatism in the long run can threaten the national existence and culture. Dishonesty, the growth of legalistic attitude, and the loss of fairness and the sense of justice are the concrete manifestations of this pragmatic attitude. In the ethical perspective, the community is expected to change its pattern of life which was originally inclined spoiled, relaxing and lazing to be industrious, creative, and full of initiative in the spirit of cooperation and entrepreneurship. Under the working-ethos, the capability to fill out the meaning of life will be growing in the spirit of collective awareness that we are living in one country, growing in one nation and speaking in one language.

2.3. Philosophy and Culture

Per definition, philosophy of science is a reflection on scientific knowledge and ethics is philosophical reflection on moral life in social and political relationship. As far as these subjects are taught, philosophy has played its own role as the rational path to our knowledge, our morality, and our social life. In those areas, philosophy tends to bring our mind to a kind of knowledge which we call 'transcendental' or 'critical' knowledge which is based on the activity of thinking.

This rational path to knowledge, morality and social life has its own value in understanding the cultural life of a nation. This is the way the philosophy of culture tries to reach out. As far as I understand, the philosophy of culture is a philosophical reflection on the way of thinking lived up by community or society in period of time. In Asia, Buddhism, Confucianism, and Hinduism have been known as way of life and way of thinking. Besides these philosophies, we may add the Javanese culture because it has a great influence in our way of thinking in many areas of life, especially in politics. Beside these ancient philosophies, modern culture gives another way of life. If Buddhism, Confucianism, Hinduism, and Javanese philosophy are curious with the question of how we live in a harmonious society and the world, the modern culture challenges us with another kind of life which is dynamic and creative. To understand the richness of its worldview and its moral awareness, the world of cultures, both traditional and modern, need a kind of rational reflection aiming at understanding the essence of culture.

I am lucky working in a Centre which does not only focus on the problem of ethics, but also have been curious on the cultural issues. Under the influence of phenomenological movements and critical approach, the Centre for Ethics has understood that symbol is the essence of culture. The first debut of it is an effort by Agus Nugroho who succeeded to translate Ernst Cassirer *An Essay on Man* in 1980. Cassirer is a Kantian philosopher who contends that beside the objective part, the culture has its subjective part of meaning. In subjective meaning, what can have cultural meaning for you might not have for me or somebody else. But, in objective meaning, the meaning opens itself to be translated, discussed, and criticized. Behind this effort, the Centre promotes the

idea that culture is a representation of the human mind. On this philosophical background, the Centre promotes the rational attitude which is aiming to steer a middle course between, on the one hand sentimental devotionism (because, we are living in a certain culture) and on the other hand inscrutable obscurantism (because, those philosophies are written in the form of narratives or fragments) in many forms.

This philosophical perspective has its influence upon Centre for Personality Development Courses in teaching Panca Sila and Multiculturalism. In the middle of the denial of Panca Sila as course material in some universities in Indonesia, the centre, under the influence of Kasdin Sihotang, Febiana Rima Kainama, and R. Ristyantoro – three of them are the members of Centre for Ethics -, builds a new approach to Panca Sila. Panca Sila is no longer seen as an ideology but as the *philosophische Grondslag* which contains the universal principles (they are: belief in one God, humanity, nationalism, democracy, and social justice). Also, under its critical thinking, Panca Sila is regarded not just a systematic body of knowledge which should be transferred to our memory, but as an object of thinking. In this new approach, every body who learns Panca Sila looks himself as the productive thinker of Panca Sila as a philosophical body of knowledge.

In national scope, this line of philosophical approach is also revived by some Catholic scholars who are identified themselves as *Perhimpunan Sarjana Katolik Indonesia* (Indonesian Catholic Scholars Association). In grasping Panca Sila as the ‘soul’ of nation, the association proposes the thesis that Panca Sila is already embedded in our tradition, in our culture, in our thoughts, in our desire, and even in our personality. In doing this, the association does not only provide the outline of the beliefs held in by the people, together with the

practices associated with them, but also tries to enter the deepeness of the soul, of the logics and of the life of the nation. Panca Sila, therefore, is a cultural philosophy in which the students explore the ideas about the world, about humanity, about the spiritual dimension, and about the purposes of life.

The critical mind is also used in developing multiculturalism. With the realization that every culture is a representation of each ethnic selfhood, from the beginning multiculturalism is built in an ethical perspective. Justice, democracy, and respect for human beings are the fundamental principles which are applied to confronting the cultural differences. With this critical mind, the students are invited to promote the idea that they are living in the context of plurality of cultures and in this plurality of way of live they are still human as many other human beings. They are the same in a different context of cultures and way of lifes.

3. COMMUNITY OF EXPLORERS

So far I tried to outline the teaching programs in which I am involved. In each stage I extend my thesis that the philosophical thinking is curious on the essence of science, of morality and even of culture. In pursuing research and teaching it, the community in which I am called as its member plays an important role. Without it scientific and philosophical enterprise seems to be impossible.

As many feel it, I really know only a tiny part of philosophy. Yet, as far as I philosophize, I am not alone. I work in a certain community which has its history: we identify our nature as thinking animals which live in a community of explorers, as Michael Polanyi mentioned it (*The Tacit Dimension*, p. 83), in

which each member of the community identifies him-herself as man/woman in thought. In it each of us is placed in the midst of potential discoveries, which offer him/her the possibility of numberless problems.

Moreover, the 'community of explorers' is based on the character of philosophy. Until now we are in opinion that philosophy is rational-critical self-reflection. It is true because all knowledge is a personal achievement. In some sense, philosophical knowledge is a personal discovery. It is the result of creative philosophical genius. Spread over the different fields of philosophical knowledge, each philosopher is looking out for such points and develops one. But, how can man or woman develop his or her reflection without a certain language in a certain context of togetherness?

Doing philosophy is not an individual enterprise but a social one. Practically, we cannot philosophize by exercising our own thinking. In the first place, philosophize means study the works of other philosophers, follow their arguments, and look for their basic ideas, and develop critical assessment to them. By doing all of these, one can achieve the greatest total progress in practice. Everybody has his own way to philosophize by mutual adjustment with other philosophers.

Also in this community, each philosopher always works under the mutual control principle, in which he or she is both subject to criticism by all others and encouraged by their appreciation of him. This is how philosophical opinion is formed. Only fellow philosophers working in closely related fields are competent to exercise direct authority over each other, but their personal fields will form chains of overlapping neighborhoods extending over the entire range of philosophy.

Most of us believe that this critical mind can become a model for theoretical thinking. The further question arises as to: what is the urgency of philosophical thinking for students who has major in science? Is it possible to develop the thinking capability by studying philosophy? Is the critical mind important for democracy?

After the Second World War, James B. Conant, President of Harvard University, told us that scientific learning in the higher education is an important clue for our democracy. With this thought in mind, he developed Harvard University as a scientific (research) institution. But, in a time that science and technology becomes the instrument of power and of money, the philosophical thinking is still the power to make a difference. In thinking every body makes himself different to many others. Thinking is essential for empowering persons to cope with changing times.

Of course, it is not easy to promote critical thinking. The following story may be a proof of a-critical philosophy that embedded in our way of life. Once upon a time, I was walking behind a young mother with her 5 years old boy. The boy walked behind the mother following the mother from one shelf to another. When they were standing before a yoghurt shelf, the boy asked the mother. "Mom, what is it?" The mother was feigning not listen the boy. He asked again, "Mom, what is it?" The mother told him that she was in hurry to put the purchase in the carts and passed the yoghurt shelf. "Please don't ask question. We are in hurry. Your father is already on the way to home." The boy was annoyed staring his mother. "Yes Mom, you have misunderstood my question. What I have done is only asking you. Why are you so crabbed? It is just because of my question?" Grumbled the boy to his mother.

In the pessimistic mood of the story, yet, I think it is not too late to invite everyone to be taking part in a society of explorers, in which science and philosophy can learn each other for a better understanding of the world and the human.

4. CONCLUSION

After more than 55 years of her existence, University of Atma Jaya has placed philosophy as the basic course in the midst of scientific and technological training. In long history of her existence, philosophy presents itself in many forms. In the beginning it presented itself in fundamental branch of philosophy such as logic, philosophy of man, social philosophy, and ethics. Later it came under the subjects of basic courses in cultural sciences, basic courses in natural sciences, and basic courses in social sciences, and ethics. In this last ten years, it presents itself in the subject matters of critical thinking, philosophy of science, philosophy of economics, philosophy of man, ethics, multiculturalism, Panca Sila.

The long journey of philosophy has been embedded in the history of Atma Jaya as a university. In the first stage where the university was struggling with concept of education, philosophy presented itself as the tool of education of mind. This goal was changed radically at the era of New Order which emphasized on the economical and political interest. In this era, philosophy had to adjust itself in the body of sciences by producing the basic thoughts in the building of science. And now after the reformation in which democracy gets its primacy in many fields of life, philosophy emerges itself as critics to science and technology. In this new perspective, ethics, philosophy of science,

and philosophy of culture are concerned with the questions of knowledge and human interest. The mini-history of philosophy as species, therefore, is the clue to understand the struggle of Atma Jaya as higher education in Indonesia.

This historical parallism of the university and philosophy may be not ever. The linearity ideology is a new challenge for philosophers who concern with the education of mind. In this new ideology, research is more important than fostering the mind. In this new ideology, the students will be pushed to build his concept and methodology to ask questions, to discover the hypothesis and to verify it in the logic of science. The question arises as to: how could philosophy do in the egoism of department and in the primacy of linearity of science?

Whatever the solution could be given to that question, philosophy is always 'there.' It cannot be abolished, although all systems, strategies, and policies negate totally its presence. It is just because philosophy is rooted in the human mind. If the professional philosopher is not 'there' anymore, the potential philosopher will enter into the body of science and technology. I also believe that under the spirit of democracy, dialogue between sciences and between sciences and humanities will be promoted in every level of research. University in the next stage will become a representative of community of explorers, in which each man and woman can involve in the market of ideas. Equality among scientists will be the basic normative in the community of thinkers and of scientists.

BIBLIOGRAPHY

- Aristotle, 1984. *The Complete Works*, Vol. II, edited by Jonathan Barnes. Princeton: Princeton University Press.
- Cassirer, Ernst, 1986. *Manusia dan Kebudayaan*, sebuah terjemahan An Essay on Man oleh A.A. Nugroho. Jakarta: PT. Gramedia.
- Feyerabend, Paul, 1993. *Against Method*, London: Verso,
- Heidegger, Martin, 1962. *Die Technik und die Kehre*, Tübingen: Gunther Neske Pfullingen.
- Keraf, Sonny A. and Dua, Mikhael, 2001. *Ilmu Pengetahuan*, Yogyakarta: Penerbit Kanisius
- Jena, Yermias. *Filsafat Ilmu*, 2015. *Kajian Filosofis atas Sejarah dan Metodologi Ilmu Pengetahuan*, Jakarta: Penerbit Deepublish.
- Poespowardjo Soerjanto T.M. and Seran Alexander, 2015. *Filsafat Ilmu Pengetahuan, Hakikat Ilmu Pengetahuan, Kritik terhadap Visi Positivisme Logis serta Implikasinya*. Jakarta: Kompas.
- Plato, 1997. *Complete Works*, Edited by John M. Cooper. Cambridge Indianapolis: Hackett Publishing Company.
- Polanyi, Michael, 1983. *The Tacit Dimension*, Gloucester, Mass.: Peter Smith,
- Poser, Hans, 2001. *Wissenschaftstheorie, eine Philosophische Einfuehrung*, Stuttgart: Reclam, jun.
- Riyanto Armada et.al., 2015. *Kearifan Lokal, Pancasila, Butir-Butir Filsafat Keindonesiaan*, Yogyakarta: Penerbit Kanisius.
- Suriasumantri, Jujun S, 2013. *Filsafat Ilmu, Sebuah Pengantar Populer*, Jakarta: Pustaka Sinar Harapan.
- Van Peursen, C.A, 1990. Jakarta *Fakta, Nilai, Peristiwa: Tentang Hubungan antara Ilmu Pengetahuan dan Etika*: Penerbit PT. Gramedia.
- Van Peursen, C.A, 1985. *Susunan Ilmu Pengetahuan, Sebuah Pengantar Filsafat Ilmu*, Jakarta: Penerbit PT Gramedia.