



SCIENTIST VISION TO FACE THE DYNAMIC OF GLOBAL CHANGE IN THE MISSION TO BUILD A CIVILIZATION OF KNOWLEDGE

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ABSTRACT

Science occupies a central and crucial position in this universe. Not only in the context of the epistemological level, but also stated in the text of any religious scriptures about the urgency of knowledgeable humans using reason, his mind. This can be called an embodiment from the ontological conception which is manifested in the form of thinking praxis. Therefore, knowledge cannot come from an institution that belongs to a certain class, especially the aristocracy (scientists), but human activities on earth have the same responsibility, especially to know themselves and the natural world around them. Based on this awareness that the essence of science is innovation in the form of knowledge of technology and information, it is appropriate that this tool is able to save the earth in its sustainability, not in fact endanger the future of its inhabitants. All of them stakeholder The inhabitants of planet Earth are an integral part of their role in fulfilling their life needs. Meanwhile, technology is just a tool to make it easier to meet their needs and even desires. At this point, especially scientists have responsibility a more vital role in contribute towards something of value and in this realm it is included in the axiological area in which there is a global community that is bound to each other and is not insulated as subject as well as real objects both materially and immaterially. This relation pattern can be done by constructing mind *set absolute relation* good concrete implicit or explicit for humans to build civilization with scientific civilization.

Keywords: *Science, Scientist, Philosophy of Science and Civilization.*

INTRODUCTION

Discourse on science cannot be separated from the context of prior discussion of philosophy as the root of science. Philosophy is a branch of science that gives birth to the dynamics of thought diversity life's problems are interesting and will never be completely resolved as long as the universe is in its orbit and humans are in their position as *zoon politicon ora wise man* that organizes his life, said Aristotle (384-322 SM). Aristotle in *History of Animals* trying to identify differences between individuals and groups as characteristics. In the human group it is clear that all members share the same set of distinguishing features as other creatures in ways of thinking.

According to Ibn Khaldun in his work entitled *Preface* explains that humans and other animals are distinguished by their ability to think and regulate their actions in an orderly manner. The knowledge that humans acquire consists of two types, namely natural for humans which is obtained through the guidance of their minds and innate which is obtained from humans its creator. Using a philosophical approach as an analytical knife can find out deeper and more meaningful issues.

Science is the essence of the study of the nature of reality and existence, about what may be known to right or wrong behavior that should or should be done. people, especially the aristocracy. Based on the rules of law science found the term that *should* and *the existence*. *That should* Means a rule of law that describes the expected conditions. Whereas the *existence* assumed to be a real state and often the *existence* not always compatible that *should* (Sudikno Mertokusumo, 2019).

The general assumption that knowledge is something that is high, difficult, abstract and not related to the problems of everyday life and is only owned by certain groups of geniuses and smart people is wrong, because humans are born as humans. Creature intelligent animals, so that all have equal and thorough positions and responsibilities in educating themselves and others people others as the mission of maintaining the continuity of life in this universe (Diana Widiyanti, 2017). Human reason as a gift given by God is the initial entity of the most basic knowledge, because it is the basis of all basic thinking. Differentiate human with creature other. Ability think able to solve the questions and problems of life in the dimensions of human life, the reality of life, honesty of the heart and reflection of the mood of the soul.

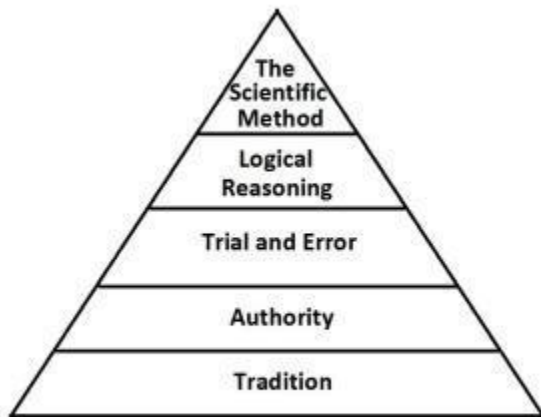
Meanwhile, the contents of this universe demand to be studied by thinking systematically about the nature of its existence which is related to philosophical and fundamental issues by using the rationality of science to achieve scientific knowledge. Kindly substantial science as the essence of what is questioned about the truth. The problem is, it is easy to remember and explain the systematic search for the truth of the nature of science but it is also quite difficult to really understand the essence of what is learned and is valuable in science to build human civilization itself in the universe.

Actually the process of finding knowledge is divided into three fields, namely ontology which discusses something with basic questions about what (*what*), epistemology recognize it by using follow-up why questions (*why*), which is a study of how to know that and axiology is the application (*how*) which is done in the search for truth (Ahmad Taufik Nasution, 2020)

Theory of the Reality of Science

Science is the result of a whole process of conscious effort to investigate, discover, and improve human understanding of various aspects of reality in the universe. Science provides certainty by limiting object the scope of his view. The Position of Knowledge is not just knowledge (*knowledge*) *per se* but summarizes a body of knowledge based on consensus (theory) and can be systematically tested by a set of methods that are recognized in a particular field.

One Perspective Philosophically, science is formed because humans try to think further about the processes and results of knowledge they have, so that it can be called a product of epistemology. The Liang Gie defines science as a series of study activities that seek an explanation of a method to gain an empirically rational understanding of this world in its various aspects and the overall systematic knowledge that explains various phenomena that humans want to understand. In the knowledge hierarchy, there are five main foundations, namely tradition, authority, *trial-and-error*, logical reasoning and the scientific method (The Liang Gie ,1999)



The Hierarchy of Knowledge

The hierarchical structure of knowledge starts from the first tradition (tradition) is the bottom layer in knowledge, because of existence the truth been considered since long ago. Second, *authority* (authority) means science based on authority which is a group of people/entities that are considered legitimate convey a truth. Third, *trial-and-error* (experiment/trial) implies that in order to get the best knowledge, it is necessary to try many times to find out the location of the truth and mistakes until knowledge is obtained that can be accepted by everyone. Fourth, *logical reasoning* (logical reasoning) is a systematic and mechanical process that reconciles experience (*experience*), intelligence and formal thinking systems in acquiring knowledge. Logical reasoning can be either deductive, that is, theories are used to make hypotheses or inductive, that is, generalizations from certain observations. Fifth, *the scientific method* (scientific method) is the epicenter of the pyramid of scientific hierarchical structure. This method includes procedural examinations systematically, empirically, controlling, and critical proposition points on the resulting hypotheses.

There are things that are no less important in the hierarchy of knowledge above that are linked by ethics/morality, both the way to get it and the results it gets. Deep man run task science is to protect his duties with a shield ethics/morals, because of human ethics teaching which is a good deed and a bad deed, as a guideline (K. Bertens, 2020).

For K. Bertens, in his view of ethics-morality rests on "*process*" and "*importance*". Morality in the process of being a control for life experience, while positioning importance morality means positioning itself not on a set of absolute norms (laws) and apart from the dynamics of changing times. All forms of assignments in the profession are bound and intertwined with ethics regarding values, norms and moral obligations, so that each individual must always be aware that the results of his knowledge have certain moral implications. This shared awareness with various kinds is confirmed in the form of an agreed code of ethics. The basic principle of morality as a vision of knowledge is order (*order*) and love (*love*). Principle "*order*" to guarantee the public/shared interest, while the principle of "*love*" as a mission to protect the interests of individual members of society.

Scientist Influence and Challenges

In general, science experiences consistent development from time to time. Its development is like a series of measurements, while human beings are like a series of calculations. The nature of its development is increasingly complex and tends to be uncontrolled.

The presence of various new phenomena simultaneously becomes an obstacle as well as a challenge that must be responded to creatively and productively. The phenomenon of loss of certainty (*uncertainty*) to a true reality is the noumena of the actual event. This is a challenge as well as a hope for the global world based on the dimensions of the scientific method as a method of solving life's needs. At the practical level, this change makes people trapped in a dark cloud of stalemate and innovates and only dwells on the residue of misuse from the purpose of the initial function, so that got the sight of humans being used like robots from the technology produced, even though humans should appear brilliantly consolidate the results of his invention as a means of fulfilling his needs.

Borrowing theory from Alfred Schutz's phenomenology is how to understand behavior-oriented social action (*behavior*) people or other people in the past, present and future through interpretation (Stefanus Nindito, 2005). The main key to the development of science lies in scientists. Scientists cannot be passive. Top profession and responsibility must always think, research and make various efforts for the development of knowledge which is his area of expertise, so that his duties as a scientist in order to develop science can run well and sustainably. (*Continue to use*). This kind of responsibility should not only take place among scientists alone, but also become the general spirit of all human beings who are endowed with reason. In fact realizing these ideals is not easy, but that does not mean it is impossible, if efforts are made seriously, systematically and continuously as a common awareness to build the construction of civilization in the world.

Use a theoretical approach identity social proposed by Sheldon Stryker focuses on the relationship of mutual influence between individuals and the social structure/community around them. Individuals and society are like two sides of a coin. A person is formed on interaction, but the social structure that shapes it. This theory combines the role concept and self-concept from symbolic interaction theory where each role is displayed by an individual in interacting with others.

Scientists have a role in overcoming human problems in general in any dimension. If you have understood the above roles, then the interacting scientist will be influenced by role expectations and self-identity as well as the behavior of those who interact with themselves. (Ardiningtyas Pitaloka, 2017)

The causality relationship in social psychology is known between every dimension of life own A dependency relationship starts from the stage dependent, *independent* and interdependence. In the early stages, the source of knowledge discovery has a relation in order to depend (depend) on one science with other knowledge. At the point of finding balance (*equilibrium*) makes knowledge independent (independent) or value-free. The impetus for change around it makes scientists aware of experiencing interdependence on the complexity of solutions to maintain balance and continuity of life governance between each field of science. As long as space and time exist, change itself is an empirical reality that cannot be rejected by anything or anyone. The world is getting global, otherwise known interim globalization.

Loren Graham in his work on the history of science, he has shown the influence of the social context on science, even structure theoretically. in his work *Between Science and value* postulates that globalization is only one of the many characteristics of the transformation of society that occurs quickly and has implications for its high impact on the surrounding

environment. The reality today is that everything is witnessing a true metamorphosis in human relations or in other words a change in civilization in science and technology (Loren Graham, 1981).

The responsibility and role of scientists as a solution to restore (*on the track*) the function of science for civilization is to have a new paradigm of thinking holistic or better known as the term paradigm. It views the world as an integrated whole rather than a collection of separate parts. Such views usually depart from a deep awareness recognizing the fundamental interdependence between phenomena and noumena both as individuals and public. Thomas Kunt places paradigm as something perspective/perspective, basic principles, methods, and values in solving a problem that are upheld by a particular scientific community (Afiq Fikri Almas, 2018)

Change Mindset Stepping into the Future of Knowledge

Mindset consists of words mind and set Where *mind* interpreted as a source of thoughts and memories that produce feelings, thoughts, ideas and storage of knowledge. As for the *wordset* has the meaning of prioritizing capacity building in an activity. So it can be concluded that mindset is a set of ways of thinking or beliefs that determine a person's behavior, attitude, and outlook on the future (Arwandha Prawirantri, 2022).

Therefore, education and the surrounding environment greatly contribute to growing mindset and character. Professor Carol S. Dweck there are two types of mindset: first, growth mindset (*growth mindset*) is a mindset that is based on the belief that a person's basic qualities can be processed, changed and developed through certain treatments, experiences and efforts. Second, the fixed mindset (*fixed mindset*) is based on the belief that a person's qualities have been determined (Carol S. Dweck, 2006).

The transformation of knowledge as a learning goal is a goal that describes the knowledge, abilities, skills and attitudes that a person must have as a cause for using his intelligence and as a result of the knowledge obtained from the transformation. The interaction of scientists on all lines of life needs to be understood as transience-knowledge. *Transience-knowledge* contains two sides, namely developing knowledge and practicing life skills skills. This mandate is contained in the opening of the 194 Constitution Para IV. Explicitly one of the goals of the state is to educate the life of the nation, not just to educate individuals. The value obtained from the sentence to educate a meaningful life increase quality it works (its rationality) and maintain the nobility of character (character, morality and integrity), besides that the national anthem Indonesia Raya is very clearly resounding "*wake up his soul wake up his body*".

Mental attitude and personality are important elements as the basis and starting point for success. By Koentjaraningrat in culture, mentality and the development of the Indonesian nation there are contradictions. The mental weaknesses of the Indonesian people are: underestimating time; like to break through; not believe in yourself; undisciplined; Like Sacrifice solid responsibility.

John Naisbit's predictions proved true and actual where in digital information the phenomenon appears that technology enslaves humans at all levels, which is marked by indicators, namely: first, society patterned instant life within solution the main issue. The process is not the important thing but the result is prioritized. Second, people experience phobia and dependency radically on the existence of technology. It is as if without the latest technology they cannot live and interact with their surroundings. Third, the loss of boundaries between facts and slander. An event is written and constructed on the basis of feelings and perceptions, not on the basis of empirical reality. Fourth, accept violence as a natural part of life around both verbal

violence or nonverbal in the shape of *psywar*. Fifth, interpreting and appreciating technology as a game tool, not as its main function. Sixth, live a life that is distanced and stripped of its social roots (John Naisbit, 1984).

The development of science has become a chain of life that cannot be separated from human life and existence. Increasingly advanced science is clear evidence of increasingly complex human thinking. The results of human thought in this science can be seen through progress in various fields of innovation, especially in the fields of technology, information and communication. All scientific advances were created with the aim of making it easier for humans to complete their life needs according to their wishes, however, this advanced knowledge development also gave rise to tough challenges as well. This latest scientific innovation also promises higher risks for the future of humans and science itself, because with this knowledge it is also able to accelerate destroy people in life when control self (*self control*) cannot be controlled within the limits of respect for the freedom of others and other human rights.

CLOSING

Based on the description above, it can be concluded that the main challenges of science are more focused on human attitudes in dealing with the development of science itself. Humans do need the development of knowledge for the sake of convenience in living life, but the big question is whether this knowledge has been put to good use so far?.

The following narrative illustrates the challenges that will be faced by society and especially scientists in carrying out the mission of building civilization in the future: first, facing global change. *The Organization for Economic Cooperation and Development* (OECD) presented the results of the symposium in Paris in 1989 with the title *One World or Several*. There are seven major problems facing humans in the future, among others; (1) Reactivation of the world comprehensively, (2) Globalization *face to face* regionalization, (3) Development of resource competencies mean and management of government regulations, (4) Construction and access contracts impact resulting from (5) international energy conglomerates facing destructive environmental changes, (6) international migration as a result *chaos* and food shortages, (7) Rethinking the fate of workers in agrarian countries (M. Amien Rais, 1993).

Second, education. The current education system requires students to have a global outlook in order to prepare themselves for the era of disruption. Through the educational revolution in the form of reinforcement character and global insight makes students local but their competence is global. Method Learning by developed countries in categorization in improving HDI quality (*Human Development Intellectual*), while in Indonesia, the concept of such education actualized through science and technology doctrine *intaq* in a balanced manner to the implementation of the independent learning curriculum implementation not optimal.

Third, the disparity in mastery of knowledge and technology and equity HDI (Human Development Index). This gap occurs due to the geographical location which is very broad in the form of islands and low per capita income.

Fourth, changes in the order of social and moral life. Consequence of social life in the era of digitalization of technology makes the structure of society tend to be individualistic and sectoral ego. Moral qualities also experience depreciation as a result of acculturation without foreign culture filtration with local wisdom values (*local wisdom*).

Fifth, population and employment. In developed countries, the population growth is less than 1% and some countries even close to 0%, so that by 2025 the population in developed countries will be around 1.4 billion. while in developing countries in 2025 predicted reached 6.8

billion. While in Indonesia in 2020 the population will reach 250 million people and in 2050 reach 350 million souls. The average population growth in Indonesia is currently around 1.8% per year. This high population growth raises a number of problem in life in Indonesia. The problem of shortage of residential land and lack of jobs will be a formidable challenge in the future (Brundland, 1987).

Sixth, environmental problems. In connection with the increase in infrastructure and population, it has a negative impact on the environment. The phenomenon of global warming, eL nina and eL nino is clear evidence of environmental damage. Directly or no threatens the future of the earth as a single human habitation.

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