INITIATION OF ONTOLOGY, EPISTEMOLOGY, AND AXIOLOGY IN HIGHER EDUCATION MANAGEMENT IN THE ERA OF THE INDUSTRIAL REVOLUTION 4.0

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ABSTRACT

This research discusses ontology, epistemology and axiology in higher education education management in the era of the industrial revolution 4.0. Descriptive qualitative research methods and literature studies were used in this research. The descriptive method is a problem solving procedure that is investigated by describing the condition of the research subject/object. Through this approach, it is hoped that we will be able to provide deeper, more comprehensive answers, not just surface and theoretical proofs, in accordance with the research objectives to be achieved. The discussion starts from the understanding of ontology, the relationship between ontology and education and the role of ontology in education management, understanding epistemology, the role of epistemology in education management in the era of the industrial revolution 4.0. Next, understanding axiology, the role of axiology in educational management in the era of industrial revolution 4.0. Conclusions, ontology, epistemology and axiology in higher education education management in the era of industrial revolution 4.0, we form a solid philosophical foundation for achieving a relevant and competitive educational vision.

Keywords: Ontology, Epistemology and axiology, educational management Industrial revolution era

INTRODUCTION

The role of philosophy in higher education management in the Industrial Revolution 4.0 era is very crucial. Philosophy helps higher education institutions develop the conceptual foundation and core values that guide every aspect of higher education. In an era marked by rapid technological change, universities need to reflect on and articulate their vision, mission and goals through a philosophical perspective. It includes questions about the true purpose of education, the ethics of research and teaching, and the social impact of the knowledge produced. Philosophy also helps bridge the gap between science, technology, and human values in higher education management. (Suminar, 2016) convey that educational management is a series of activities in the form of the process of managing the cooperative efforts of a group of people who join an educational organization, to achieve predetermined educational goals, so that they are effective and efficient.

With a solid philosophical foundation, universities can guide curriculum development that is appropriate to technological developments, promote critical thinking,

and encourage ethics in the use of resources and data. (Widyawati, 2013) said philosophy is knowledge possessed by reason that penetrates the final foundations of everything. Thus, philosophy becomes an essential intellectual guide in achieving relevant and meaningful higher education goals in the era of the Industrial Revolution 4.0. In an era marked by rapid technological progress and social transformation, the implementation of ontology, epistemology, and axiology in higher education education management has become essential. The Industrial Revolution 4.0 has fundamentally changed the foundations and attitudes of higher education, forcing universities to evaluate and align their approaches to education, knowledge and values.

Ontology, which is related to understanding reality and entities in education, requires us to respond to the existence of advanced technology and online learning. According to (Jasnain, Mardianti, Sari, Wardarita, & Indah Utami, 2022) setiap proses pengembangan ilmu pengetahuan unsur sebab akibat selalu tertata rapi sehingga menimbulkan persoalan tentang segala sesuatu yang memiliki keberadaan dan keadaan suatu ilmu tersebut. (Dredge, Airey, & Gross, 2014) Ontology, or the study of being, creates the framework for how we, as individuals, connected in societies, make sense of the reality in which we live. Ontology helps universities to understand the new realities faced in higher education today. With advances in digital technology, online learning, and artificial intelligence becoming an integral part of the educational environment, ontologies allow us to detail new entities that exist in the educational ecosystem. With a deep understanding of these entities, higher education institutions can design relevant curricula, utilize technology efficiently, and respond to rapid change. Ontologies also assist in the development of standards and conceptual models that can improve the quality of higher education, facilitate cross-disciplinary collaboration, and enable adaptation to changing technological developments. In this way, ontology becomes the basis for bridging the gap between conventional educational paradigms and the demands of the Industrial Revolution 4.0 era.

Epistemology, as the study of the sources, nature, and boundaries of knowledge, helps universities to respond to rapid changes in the way knowledge is produced, disseminated, and used. In this era, knowledge is no longer limited to textbooks and classroom lectures, but is spread widely in the form of digital data, online information and open resources. (Tagela, 2013) said that the basis of epistemology questions the process that makes it possible to obtain knowledge in the form of science, what the procedure is, what things must be taken into account in order to obtain correct knowledge. The basis of epistomology describes how to gain knowledge. Higher education institutions need to develop an epistemological approach that is responsive to technological developments, promoting critical thinking, data analysis, and information literacy among their students. Appropriate epistemology also guides higher education institutions in integrating the latest research and practices in the curriculum, as well as in managing knowledge and data to provide valuable insights. Thus, epistemology plays an important role in maintaining the quality and relevance of higher education amidst the constant changes that shape the Industrial Revolution 4.0.

Axiology refers to the values and ethics that guide behavior and decisions in educational contexts. (Nasir, 2021); (Hamdani, 2020) states that axiology is a branch of philosophy that studies the values or norms of a science. In the midst of rapid technological developments and social change, axiology helps universities to ensure that ethics, integrity and fundamental values remain the foundation of all educational operations and policies. In a

digital era influenced by issues such as data privacy, research ethics, and inclusivity, axiology provides a framework for appropriately addressing these challenges. Higher education institutions need to ensure that values such as sustainability, social responsibility and openness become an integral part of their educational management. Thus, axiology is not only a moral guide, but also an important tool to ensure that higher education in the Industrial Revolution 4.0 era provides benefits that are sustainable, meaningful, and in line with human values.

METHODS

Descriptive qualitative research methods and literature studies were used in this research. The descriptive method is a problem solving procedure that is investigated by describing the condition of the research subject/object. Through this approach, it is hoped that we will be able to provide deeper, more comprehensive answers, not just surface and theoretical proofs, in accordance with the research objectives to be achieved. This research will reveal more information about information based on 3 philosophical points of view, namely ontological, epistemological and axiological. Literature study is used as a technique to collect the necessary data starting from books, journals, articles, periodicals, and other scientific work references related to the theme raised. There are 3 stages in the data collection process, namely editing to re-check the data that has been obtained. Then organizing tries to manage the data that has been obtained. And finally, finding is carried out so that the analysis of the results of data management can proceed up to the stage of drawing conclusions.

DISCUSSION

Ontology, epistemology, and axiology are three key concepts in philosophy that help us understand the world, knowledge, and values. Ontology is concerned with the existence and nature of reality itself. Epistemology addresses the sources, limits, and ways we acquire knowledge. Axiology is concerned with judgments and values. Below we will explain one by one.

Ontology in Higher Education Management, Industrial Revolution 4.0. Ontology comes from the Greek word 'Ontos' which means being (that which exists) and the word 'Logos' which means a science. So, ontology is a science or theory studying existing existence. According to (Abd. Muqit & Shokhibul Mighfar, 2020) Ontology as a science discusses something from its roots, or studies the essence of science. In principle, ontology discusses what exists. (Mubin, 2020) states that ontology is one of the most ancient philosophical studies and originates from Greece. This study discusses the existence of something concrete. Greek figures who had ontological views were Thales, Plato and Aristotle.

Everyone knows that ontology is a scientific field that focuses on nature. If ontology is linked to educational philosophy, then there will be a relationship between the two. Education is an activity carried out with a purpose. This shows that there is. Education aims to achieve goals. In general, education can bring children towards maturity, physically and mentally mature. By knowing the meaning of education, the meaning of educational

ontology is the analysis of scientific material objects. Contains what is empirical, about what humans want to know, and about the objects of scientific research. The objective of educational material is the basis of educational ontology.

The relationship between ontology and educational management. According to (Septuri, 2016) states that management is a process of utilizing all resources with the help of other people and collaborating with them, so that the goals that have been set can be achieved effectively and efficiently. (Kurniawan, 2020) menyebutkan The ontology of school and community collaborative management is an intensive communication network and mutually beneficial partnership efforts between school members and community members who have different knowledge and skills, but work to realize the same goals.

Ontology has an important role in educational management in the era of the industrial revolution. An understanding of the nature of existence, reality and relationships between entities in the world of education is very relevant to the rapid changes occurring in today's industrial and technological environment. (Fadli, 2021) stated that the Industrial Revolution 4.0 and Society 5.0 have brought a new order of life for society, where all social behavior will be made easy to fulfill all elements of life. Ontologies help us explore the philosophical foundations that support educational policies and practices that are more adaptive and responsive to these changes. By focusing on educational realities, technological integration, educational philosophy, social roles, and the development of educational concepts, the ontology allows us to design relevant and effective educational strategies, helping students and educational institutions to better face the challenges of the industrial revolution era.

Epistemology in Higher Education Management, Industrial Revolution 4.0

Epidemiology" comes from a combination of two words in ancient Greek, namely "epi" which means "above" or "on" and "demos" which means "people" or "many people." Thus, epidemiology is the science that studies the distribution of and factors that influence health and disease among human populations. With its origin meaning "in the people," epidemiology is a scientific discipline that aims to understand the spread of disease, its causes, and its impact on society, as well as to develop prevention and control strategies diseases that have a major impact on human well-being (Khairani, Handayani, Effendi, & Puspita, 2023) convey epistemology is concerned with knowledge and how we acquire it, as well as the criteria we use to determine what counts as knowledge. (Hadiq, 2023) Epistemology is often mentioned, which is related to sources of knowledge and their structure or organization. Apart from education, there are also discussions about the nature of validity or validity of the conceptual structure used and related problems.

Epistemology in educational management in the era of the industrial revolution has an important role in forming the basis for understanding knowledge, learning, and how information is obtained. In the context of educational management, epistemology helps guide decision-making approaches, curriculum development that is responsive to technological change, and promotes critical thinking and innovation in the learning process. With the industrial revolution, epistemology helped incorporate new principles and learning paradigms that focused on skills relevant to the demands of the rapidly evolving world of work.

Axiology in Higher Education Management, Industrial Revolution 4.0

Axiology is a branch of philosophy that discusses moral values and virtues. In the context of everyday life, axiology helps us understand the essence of the values that form norms and ethics in society. Through axiology, we can explore the meaning and foundations of values, forming views about what is considered good or bad, right or wrong. Opinion (Anim, Armanto, & Sari, 2021) conveying axiology can be called the theory of value or value theory. The part of philosophy that is concerned with good and bad, right and wrong, and means and ends. Axiology also provides a basis for personal and collective reflection on the values that form the basis of actions and decisions. By understanding axiology, we can form a deep moral awareness and contribute to the development of a society with positive values.

In the era of the industrial revolution, the role of axiology in educational management became crucial. Axiology guides educational policy makers to establish values that are relevant to the demands of the times, such as creativity, innovation and sustainability. In the context of educational management, axiology helps shape a school culture that focuses not only on academic achievement, but also on developing moral character and professional ethics. Axiology also serves as a guide in dealing with ethical dilemmas that may arise along with technological advances and social transformation in the industrial revolution. By combining axiological principles in educational management, we can create a learning environment that is not only ready to face change, but also relies on positive values that encourage the holistic growth of students.

(Sirojudin & Ashoumi, 2020) stated that while the discourse on science axology in the management of Islamic education always focuses on the implications of the goals and benefits of planning, organizing, implementing, monitoring and evaluating activities in achieving effectiveness in Islamic education. On the basis of this definition, it can be understood that the value in Islamic education management science has two tendencies, namely, the theoretical value of science and the practical value.

In the 21st century, which is marked by the use of technology and communication in all areas of life, including education, it has received a lot of attention from limited circles. The progress of this century has certainly brought major changes to the world of education, but this does not make education itself better. The problem lies in Indonesia's human resources (HR) as a whole. Educational institutions are required to anticipate or prepare students to enter this century. In short, this century is the age of knowledge where all information is spread and can be accessed anytime and anywhere. The Department of Education and Culture needs a 21st century education system that emphasizes students' ability to learn from various sources, formulate issues or problems, think critically and collaborate in solving problems. As we know, the world is currently entering society change 5.0.

Era Society 5.0 is a technology-based society concept. This idea emerged from the development of the Industrial Revolution 4.0 which was seen as having the potential to reduce human labor and remain united. This revolution was first studied in Japan in 2019. This study is about the problem of living in the era of revolution 4.0. People who live in the era of society 5.0 (super smart society) will use or utilize various existing information and process it in their lives. Era Society 5.0 is a concept where the development of the Internet of Things, big data and Artificial Intelligence is aimed at better human life. Industrial Revolution 5.0 focuses on efforts to place humans at the center of innovation (human-

centric). Technologies developed in previous industries are designed in such a way that people can use them to improve life, social work, and develop cooperation. This means that there is a connection between the virtual world and the physical world, which is why Sageres calls society era 5.0 one intelligence.

Society in this century is a society that lives, is close to and interacts with technology, so it is known as a digital society. The application of ontology, epistemology and axiology in higher education education management is crucial in the era of industrial revolution 4.0. Ontology guides us in understanding the nature of the existence of higher education, identifying the purpose and meaning of its existence in the educational ecosystem. Epistemology, meanwhile, provides a philosophical basis for understanding how knowledge is produced, distributed, and applied amidst the dynamics of the industrial revolution 4.0. Meanwhile, axiology helps determine the values that need to be prioritized in higher education management, such as integrity, creativity and adaptability. The integration of these three philosophical dimensions can help universities develop curricula that are responsive to technological developments, create a learning environment that encourages collaboration and innovation, and produce graduates who are not only technically competent but also have the moral awareness to face ethical challenges in the world of industry 4.0.

CONCLUSION

By applying ontology, epistemology and axiology in higher education education management in the era of industrial revolution 4.0, we form a solid philosophical foundation for achieving a relevant and competitive educational vision. Ontology helps universities understand their existence in the context of digital transformation, epistemology guides the process of creating and disseminating knowledge in accordance with the dynamics of the industrial revolution 4.0, while axiology confirms the values that need to be upheld in facing moral and ethical challenges. The integration of these three aspects creates an educational environment that produces graduates who are not only technically competent, but also have integrity, are creative, and are ready to adapt. Thus, the application of ontology, epistemology and axiology is the key to answering the call of higher education in preparing individuals for success in the era of industrial revolution 4.0.

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