



The Integration of The Philosophy of Science and Character Education Curriculum

Fitrian Nabil, Mulyawan Safwandy Nugraha*

UIN Sunan Gunung Djati, Bandung, Indonesia

*Correspondence: E-mail: nabilrian87@gmail.com

ABSTRACT

This study examined the application of the integration of the philosophy of science in character education. We took data from the elementary school at SDIT Attaqwa Nurul Fahmi, Indonesia (an integrated Islamic-based elementary school). The approach of the philosophy of science, encompassing the aspects of ontology, epistemology, and axiology, was used as a foundation to design and implement character education programs. Using a descriptive qualitative method, this research explored the practice of integrating values through observations, interviews, and document analysis. The school's curriculum was designed to internalize religious values, discipline, and responsibility through programs such as Building Learning Power (BLP) and Night of Faith and Piety Development (MABIT). The role of teachers as moral models was a crucial element in the successful application of these values. The integration of the philosophy of science proved effective in building students' character (not only possessing intellectual competence but also exhibiting positive behavior in both school and family environments). This study offers a new perspective on the development of character education based on philosophy, with significant implications for the curriculum of other Islamic schools.

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1. INTRODUCTION

Character education continues to be a highly relevant topic for discussion and study. The community's need for citizens who consistently uphold moral and ethical values has become a strong driving force for educational institutions to present and formulate values that can develop character. This is because it is a key factor that influences the progress or decline of a nation. Character education teaches the essence of the three domains: thought, feeling, and will. It aids in the social, emotional, and ethical development of students. Various disciplines serve as the foundation for formulating character, as does the philosophy of science. Philosophy is highly suitable as a foundation to be integrated into the education system, as it can determine the direction and goals of education, combining philosophical values in an ontological, epistemological, and axiological manner. The ontological factor relates to the question of why education is needed, how it is designed, and what is intended to be achieved once the education process is completed. Epistemology discusses the processes, the knowledge that will be used during the process, and the knowledge that students will gain after the process. Axiology focuses on the benefits or usefulness of education (Muslim, 2020). Character education curricula have become the highlight and attraction of Islamic schools or madrasahs.

In this study, we examined the integration of philosophy with the reality of character development in one elementary school, namely SDIT Attaqwa Nurul Fahmi, located in Sukadaya Village, Sukawangi, Bekasi, Indonesia. By reviewing several character education programs presented at the school, we observe them from a philosophical perspective. We find the integration of the philosophy of science in the school's efforts to implement character values for students and the environment.

The ontological, epistemological, and axiological studies, which are internalized in all aspects (whether from the human, the environment, or the knowledge they acquire) greatly assist the education system in determining the appropriate direction and method to achieve what is prioritized in the educational institution.

2. METHODS

This research was conducted through a descriptive qualitative approach and library research. This approach gained a deeper understanding of how the school implements character education in its teaching. Using a natural background (natural setting) as the direct source of data, the focus of this research was on uncovering meanings and processes. This study focused on a single subject and emphasized an in-depth exploration of the research focus, a case study design was employed.

A case study was selected as a type of research, aiming at collecting data to understand and comprehend a particular issue. This case study was focused on a single case: the implementation of character education in teaching at an Islamic elementary school at SDIT Attaqwa Nurul Fahmi, Bekasi, Indonesia. The case study is also based on various perspectives, opinions, and actions.

We did experiments to plan, implement, collect, analyze, interpret, and compile the research report. We engaged with every aspect of the research setting by collecting information carefully, honestly, and accurately, in line with the research focus, which is the implementation of character education in teaching. We selected respondents to provide data for the research. The respondents were chosen using purposive sampling, meaning individuals were selected based on their perceived knowledge of the issue under study.

Qualitative data served as the source for this study, collected through the responses of subjects or research sources to a set of questions. The information gathered for this research included data on the use of character education in instruction. Two data sources were utilized: human data sources, or participants, who act as objects or sources of information. Additionally, non-human sources of data, such as documents related to the core research topic, were included. The data used in this study included information from the school principal, curriculum vice-principal, student affairs vice-principal, educators, parents of students, documents, and observation results.

The selection of human data sources for informants in this study was done using snowball sampling. There were two sources of data in this research: (i) Primary data sources, which were obtained from the literature, including books closely related to the topic, as well as direct sources from the field, such as interviews with the principal, vice-principal, teachers, and field notes; and (ii) Secondary data sources, including supporting books and records of events or notes that were distanced from the sources, such as parents/guardians of students.

3. RESULTS AND DISCUSSION

Philosophy serves as a reference and foundation in science, discussing its essence, how to acquire it, and of course, the ethics and morals upheld in obtaining such knowledge. The method employed in the philosophy of science involves critically studying the structure and benefits of education. The philosophy of science can be used as a tool to address problems in life, whether personal, related to others, or concerning the surrounding environment, or even issues related to understanding the surrounding nature and its Creator. All of these are well-discussed in philosophy, both through ontology, epistemology, and axiology.

The philosophy of science is a branch of philosophy that addresses various issues related to knowledge and seeks to understand knowledge as its object in a comprehensive, accurate, and systematic manner (critical, logical, and systematic). Therefore, the philosophy of science strives to discover the basic framework and fundamental elements that may become the hallmark of knowledge (Tebes, 2005).

Three philosophical foundations can be used to discuss science philosophically: ontological, epistemological, and axiological foundations. From the ontological foundation, philosophy questions how knowledge (encompassing all types of knowledge) differs from various forms of human knowledge and actions. Ontologically, philosophy also questions the scope of knowledge. The epistemological foundation provides a basis for discussion on how scientific activities emerge from knowledge. Here, an explanation of the processes, techniques, and means related to the objectives and aims of the research should be provided. The axiological foundation becomes the basis for discussing the values associated with scientific activities. In addition to the value of truth, it is important to recognize the various values of usefulness that can be found within knowledge as its implication. As a form of knowledge that possesses usefulness, science holds a neutral value, which is good or bad depending on the humans who apply it (Kolstø, 2001).

After discussing how philosophy is used to discuss knowledge, we need to understand the material subject to be discussed, which is knowledge itself. Discussing knowledge comprehensively means addressing all types of knowledge, from fundamental and theoretical to applied and practical. This includes physical and chemical matters as well as mental and spiritual aspects. There are two tendencies in science: theoretical and practical. For example, theoretical sciences include physics, chemistry, botany, zoology, and psychology, while practical sciences include pharmacy, agriculture, animal husbandry, and applied psychology.

Science has three foundations: ontological, epistemological, and axiological (Tebes, 2005). The ontological foundation provides an accurate and comprehensive description of education, the epistemological foundation teaches methods to obtain education properly, and finally, the axiological foundation is the basis of our discussion. From the axiological perspective, it is expected to teach students about principles worth striving for in acquiring education. Education is expected to show the right path, teaching students to have positive character traits. Education should not only be intellectually enlightening but also provide a practical foundation for human life in socializing by applying the values of education itself.

The application of various philosophies of science in education, particularly in the context of character education, is crucial for shaping individuals who are not only academically intelligent but also possess strong morals and ethics. Below are several philosophies of science that can be applied in schools to support character education:

(i) Philosophy of idealism

Idealism is a philosophical system that emphasizes the importance of the supremacy of the mind, spirit, or soul over material or physical things. The essence of a human being is their soul or spirit, which is referred to as "mind." The mind is the entity capable of perceiving the world and serves as the driver and motivator of all human behavior (Tebes, 2005). Idealism plays an important role in character education by emphasizing the formation of noble moral and spiritual values as the core of human development. In the view of idealism, education aims to build a noble personality through the instillation of universal values such as truth, justice, and virtue. This approach sees humans as rational and spiritual beings who need to be directed toward achieving moral perfection through reflection, contemplation, and internalization of ideal values. In the context of character education, idealism encourages the formation of behavior based on values that are higher than material interests, leading to individuals who have integrity, responsibility, and commitment to the common good.

(ii) Philosophy of realism

Realism in Islamic educational philosophy focuses on the role of the senses (touch, sight, smell, hearing) as both the source and the means to acquire knowledge. In the context of Islamic philosophy, this realism emphasizes the importance of direct experience and sensory data in understanding the world, unlike idealism which places greater emphasis on the role of reason and ideas in the knowledge process. Realism in Islamic educational philosophy can also be seen as part of Islamic epistemology, which maintains the role of the senses in understanding and acquiring knowledge while distinguishing between what is visible (phenomena) and what is real (noumena) (Dewi & Aprison, 2024). The philosophy of realism in character education emphasizes the importance of real-world experiences and direct engagement with the concrete world as the foundation for character development. Realism believes that education should equip students with an understanding of the laws of nature and social reality, enabling them to act according to reality. In the context of character education, realism encourages a practical-based approach, where students are taught values such as honesty, responsibility, and hard work through direct experiences, observation, and habituation. These values are internalized through interaction with the environment and solving real-life problems, resulting in individuals who are realistic, pragmatic, and capable of making a positive contribution to society.

(iii) Philosophy of essentialism

Essentialism is an educational philosophy that combines elements of idealism and realism. These two philosophies meet as supporters of essentialism, yet they do not

merge into one and retain their primary characteristics. This philosophy is based on cultural values that have existed since the early stages of human civilization, as well as on the social environment. In essence, essentialism has frictions. Philosophical disagreements cause these frictions. They have different perspectives on education and the universe. However, they are aligned in four main principles. First, learning: they agree that learning requires effort and pressure. Second, the teacher is responsible for education. Third, subjects should be placed at the center of the educational process and adapted to the social environment. Fourth, schools should maintain a traditional disciplinary approach, teaching basic concepts, but these concepts should be tailored to the intellectual and psychological capacities of the students

The core concept of essentialist education is how to structure and implement essentialist programs in schools. The main objectives of these programs include: (i) essentialist schools train and educate students to communicate logically; (ii) schools actively teach and train children in values such as discipline, hard work, and respect for authority figures; and (iii) schools offer practical education that prepares children for life (Hidayat, 2008).

The combination of idealism and realism in essentialism creates character education that is not only based on noble ideals but also relevant to the realities of everyday life. These three philosophical schools are easily integrated with character education in educational settings and institutions.

Character education is now a trend in the era of globalization. With its philosophical foundation, the world of education has overlooked its primary goal of character formation or has sought to match education abroad, where we see students with strong character from an early age. However, character education has been incorporated into the National Curriculum and implemented comprehensively. There are habits among students whose characters have already been built, such as maintaining cleanliness, not littering, and dressing neatly both in and out of school. There is a perception that there has been a significant shift in the quality of character from the past to the present, particularly in terms of the quality of student's character (Rahmadani *et al.*, 2021).

Ki Hajar Dewantara, a prominent figure in Indonesian education, had profound thoughts on character education. His ideas focused on character formation rooted in local culture and universal values, which are seen as essential in creating individuals who are both capable and useful in society. Dewantara emphasized the importance of integrating character values into education, such as religiosity, responsibility, honesty, respect and politeness, care, creativity, leadership, humility, and tolerance. These nine values are expected to shape students into individuals who are not only academically intelligent but also possess strong moral character (Rahmadani *et al.*, 2021).

Character education according to Ki Hajar Dewantara is highly relevant to the challenges of contemporary education. In the context of globalization and rapid social change, character values serve as the foundation for shaping a generation capable of facing various challenges. His thoughts on education are not solely focused on the transfer of knowledge but also character development and morality.

Over time, the national education curriculum has begun to integrate character education values. For example, in the 2013 curriculum (Thoyyibah *et al.*, 2019), the integration of character education in the 2013 curriculum aims to shape students who are devout, pious, have noble character, and possess good morals, with an approach based on religious values, Pancasila, culture, and national educational goals. This curriculum emphasizes character strengthening through thematic, contextual learning methods and integrates intra-curricular, co-curricular, and extra-curricular activities. Character values are applied holistically in every

subject, tailored to the relevance of its content, and reinforced through the Character Education Strengthening Movement (PPK), which focuses on religiosity, nationalism, independence, cooperation, and integrity, in line with the vision of shaping the Profile of Pancasila Students.

In addition to national figures, we also find international figures who highlight the importance of character education, especially philosophical thinkers who have strong connections to this area. Aristotle argued that moral virtue is not only determined by knowledge of what is good but also by the ability to act according to that knowledge (Rusmini, 2023). Therefore, character education according to Aristotle must involve the repetition of good actions until they become habits that are ingrained in the individual. This shows that character education is not just about transferring knowledge but also about shaping good attitudes and behaviors.

Based on research journals on this issue, as well as observations and interviews with teachers and parents at SDIT Attaqwa Nurul Fahmi, our findings show that character education at this school is shaped through several instruments, including (i) using the national education curriculum that integrates character education, starting from the 2013 curriculum to the Merdeka curriculum; (ii) instilling Islamic values by integrating a local curriculum; and (iii) incorporating cultural values that uphold ethics.

In practice, the school implements several steps: (i) making character education a vision, mission, and goal of the school; (ii) making teachers the main role models in character education; (iii) integrating all subjects with moral values; (iv) organizing character-building events, such as weekly Friday literacy sessions featuring stories of the Prophets and righteous people, and Night of Faith and Taqwa (MABIT); and (v) conducting regular evaluations on aspects such as faith and worship, cleanliness and tidiness, and independence; 6) creating communication books and reports between teachers and parents to track students' activities.

Teachers are a crucial component in the success of character education at school, and they significantly influence whether students succeed in developing their overall character. This is because teachers serve as primary role models for students. Therefore, in education, teachers must start with themselves, so that their effective actions can positively impact students. It is difficult for educators to be good teachers if they are not good themselves. Thus, teachers must understand the potential, abilities, interests, hobbies, attitudes, personalities, habits, family backgrounds, and school activities of their students (Mufida, 2024).

Teachers at SDIT Attaqwa Nurul Fahmi regularly receive reinforcement on the school's vision and mission, particularly regarding the main educational goal, which is religious-based character education. Understanding their role and its importance in education aligns with the philosophy of essentialism (Hidayat, 2008), where essentialists believe that teachers should be active, and responsible, manage the learning environment, be effective knowledge transmitters, determine the curriculum, methods, evaluations, and be responsible for all aspects of learning. According to essentialists, teachers are seen as specialists in their fields and role models who are morally trustworthy. Schools have the responsibility to preserve and convey cultural and historical legacies to the current generation of students through traditional discipline and the wisdom and experience accumulated over time. However, technically, teachers must have the ability to guide the teaching process. In school, all students gain the knowledge, skills, attitudes, and values necessary to become human beings who can participate in society.

In the context of idealism, the goal of education is to help individuals attain wisdom and unity with the absolute, as education in this view is not only aimed at transmitting knowledge and practical skills but also at guiding individuals toward a deeper understanding of truth,

beauty, and higher values. Every individual has potential and capability, and the purpose of education is to help develop that potential, both intellectually and personally, according to each individual's abilities (Rohman Nur & Satria, 2024).

Education at SDIT Attaqwa Nurul Fahmi follows a similar philosophical framework, teaching students about the essence of being human and their purpose in this world, which is not just about materialism and the physical world but also the spiritual aspect that must always be nurtured, such as through reading the Qur'an, practicing obligatory and voluntary worship, and continually humbling oneself, respecting others, and this is implemented both in the school environment with guidance and persuasive learning and at home with documented reports.

The philosophy of realism also plays an important role in the SDIT Attaqwa Nurul Fahmi program, as students are made aware of the real world before them, understanding that they do not live in isolation, and their future depends on their actions today. At the beginning of each academic year, students are guided in setting their goals and the steps, activities, and habits that will help them achieve those goals. All of this is encapsulated in the Building Learning Power (BLP) program.

BLP stands for Building Learning Power. It is a self-management approach that helps students harness their inner strength to achieve their goals in a more focused and directed way, concentrating on self-development and strengths that are formulated in five key areas of reinforcement: 1D 4R. Devoutness (worship), Resilience, Resourcefulness (intelligence), Reflectiveness (planning), and Reciprocity (independence).

Positive impacts on students are already noticeable, with several habits they have developed under the guidance of teachers and the school. For example, in the case of Shalat Dhuha, some groups now organize themselves and start praying properly without needing guidance or instructions beforehand. This is the result of habit formation, consistent motivation from teachers and the school, and an awakening to the importance of personal responsibility, which is a crucial factor in achieving happiness in the future.

With the integration of the philosophy of knowledge in character education, education at this school becomes more directed and holistic within the desired scope. It provides comprehensive guidance for teachers and schools to develop theories and practices in implementing education and pedagogy. With this integration, education becomes something that is systematically designed and carried out to help students understand human behavior values related to God, oneself, others, and the environment. Character education involves knowledge, feelings, and actions, and when these three elements work in tandem, they shape a person's character, whether good or bad (Indramawan, 2020).

4. CONCLUSION

The integration of the philosophy of science into character education at SDIT Attaqwa Nurul Fahmi demonstrates the relevance of a philosophical approach in shaping a generation that is not only knowledgeable but also has a strong character. The ontological, epistemological, and axiological approaches provide a solid foundation for the school to design a curriculum that instills moral, ethical, and spiritual values holistically. The educational process is not only focused on the cognitive aspect but also on the formation of student's attitudes and behaviors through the internalization of religious, cultural, and nationalist values.

The implementation of programs such as BLP, MABIT, and religious habituation shows the effectiveness of this integration in students' daily lives. The role of teachers as role models and facilitators is key in conveying the character education values based on the philosophy of

science. As a result, students can exhibit positive behaviors, such as initiative in worship and responsibility for their tasks, which is reflected in both the school environment and their home lives.

The conclusion of this study affirms that a philosophical approach can strengthen character education, particularly in the context of integrated Islamic schools. This model provides strategic guidance for other schools that wish to adopt a similar system, while also demonstrating that character education based on the philosophy of science can address the challenges of modern education. Thus, this integration is not only relevant but also offers a long-term solution for shaping a generation that excels both morally and intellectually.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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