

Integration of Human Values in Science Learning



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Abstract

This research aims to explain the integration of human values in science learning in elementary schools. The literature study research method is a data collection technique carried out by examining various literature related to a problem or issue. This method is also known as library research. By analyzing several studies related to the discussion of basic education and human values. Natural Science education at the elementary school level has an important role in forming students' basic understanding of nature and the phenomena around them. However, often the focus of science learning is too heavy on cognitive aspects and pays little attention to the development of human values which are important for student character growth. By integrating human values in science learning in elementary school, it is hoped that a solid foundation can be created for students to become knowledgeable, ethical individuals and ready to face global challenges in the future. This approach is in line with the broader educational goals of preparing the young generation to become responsible citizens and contribute positively to society.

Keywords: *human values; science learning; elementary schools*

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INTRODUCTION

Education is a long process in the history of a nation's civilization. With education, a nation will become more advanced, this is the role of education in shaping human resources to become more advanced and developed. As stated in Tap MPRS No. XXVI / MPRS / 1966 concerning Religion, Education and Culture, it can be formulated that the purpose of education is to form a true Pancasila human being based on the opening of the 1945 Constitution. The purpose of education to become a Pancasila human being is to make every Indonesian citizen loyal and in love with Pancasila, and firmly guided by Pancasila.

Furthermore, Law No. 2 of 1989 emphasizes that national education aims to educate the life of the nation and develop the whole Indonesian human being, namely a human being who believes in and is devoted to God Almighty and has noble character, has knowledge and skills, physical and spiritual health, a solid and independent personality and a sense of social and national responsibility.

Natural Science education at the Elementary School level has an important role in forming students' basic understanding of nature and the phenomena around them. However, often the focus of science learning is too heavy on the cognitive aspect and pays less attention to the development of human values that are important for the growth of students' character. In the era of globalization and rapid technological advances, there is concern that education is increasingly ignoring the human aspect. Students tend to be directed to pursue academic achievement alone, while the development of empathy, concern for the environment, and other moral values receive less attention.

The integration of human values in elementary school science learning is important for several reasons, namely: forming character science learning can be a forum for instilling values such as honesty in conducting experiments, cooperation in groups, and responsibility for the environment; increasing relevance and linking science concepts with human values makes learning more meaningful and relevant to students' daily lives; developing emotional intelligence and intellectual intelligence, students also need to develop their emotional intelligence through integrated learning; preparing the future generation, students who understand human values will be better prepared to face global challenges in the future, such as environmental and social issues; realizing the goals of national education and integrating in line with the goals of national education to develop the potential of students to become people who are faithful, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. Considering this background, it is important to develop strategies and methods for learning science in elementary schools that do not only focus on mastering concepts, but also integrate human values. This is expected to create holistic and meaningful learning for students, and contribute to the formation of a generation that is not only intellectually intelligent, but also has high social and moral sensitivity.

METHOD

Qualitative research is a research that holistically aims to understand the phenomenon of what the research subject experiences, be it their behavior, perception, motivation or actions, and in a descriptive form in the form of words and language, in a specific natural context and by utilizing various natural methods. The literature study research method is a data collection technique that is carried out by reviewing various literature related to a problem or issue. This method is also known as library research. By analyzing several studies related to the discussion of basic education and human values. The reference sources that are the main topic of discussion are: books, journals, articles, proceedings, and so on. This is intended to analyze the forms and human values contained in science education in elementary schools.

RESULTS AND DISCUSSION

Values are normative benchmarks that influence humans in determining their choices among alternative ways of action (Mulyana, 2004). Like sociologists in general, Kuperman (1983) views norms as one of the most important parts of social life because by enforcing norms a person can feel calm and free from all accusations from society that will harm him. Values are beliefs that make someone act based on their choices (Mulyana, 2004). According to Gordon Allport, values occur in the psychological area called beliefs. Beliefs are placed as a higher psychological area than other areas such as desires, motives, attitudes, desires, and needs. Values as conceptions (implicit or explicit which are of a nature that distinguishes individual or group characteristics) of what is desired that influences choices regarding methods, intermediate goals and final goals of action.

Values are references and beliefs in determining choices. This understanding is a conclusion from several understandings of values above, intended as a measure of humans as whole individuals or values related to the concept of right and wrong adopted by certain

groups or communities. Human values are values concerning human dignity and worth. Humans are the highest creatures among God's creatures, so these human values reflect the position of humans as the highest creatures among other creatures. A person who has high human values wants society to have attitudes and behaviors as befits humans. On the other hand, he does not like attitudes and behaviors that are demeaning to other humans.

Cultural values are values that exist and develop in society. Koentjoroningrat (1984) stated that cultural values are the first level of ideal or customary culture. Cultural values are the most abstract and broad-ranging layer. So, cultural values are something that is considered very influential and used as a guideline for a society in determining whether someone is humane or not.

Furthermore, Koentjoroningrat (1984) stated that a system of cultural values consists of conceptions that live in the minds of most citizens regarding things that they should consider very valuable in life. Therefore, a system of cultural values usually functions as the highest guideline for human behavior. The human behavior system that is more concrete, such as special rules, laws, and cultural values.

Koentjoroningrat (1984) stated that cultural values are grouped into five relationship patterns, namely: (1) cultural values in the relationship between humans and God, (2) cultural values in the relationship between humans and nature, (3) cultural values in the relationship between humans and society, (4) cultural values in the relationship between humans and other people or fellow humans, (5) cultural values in the relationship between humans and themselves.

In reality, humans do not live in a vacuum. Humans live as humans in society, it is impossible without cooperation with other people. Outwardly and inwardly, humans are the most perfect creatures of God compared to other creatures, because in addition to life, humans also have the ability to think and work.

Society is a group of people, among whose members there is communication, connection, and ultimately mutual influence between one another. This is done by members of society in a group because humans cannot live alone. In the old society, a group of people was formed by binding or interactively. In a society like this, humans submit to the rules and customs of the group in which they live. This is done because they want a stable, solid, and harmonious life. If that is achieved, humans in that society do not have a visible role, what is more clearly seen is their togetherness. All kinds of problems become common problems and must be solved together.

Cultural values in human relations with society are values that relate to the interests of members of society, not values that are considered important in one member of society as an individual, as a person. Individuals or individuals try to comply with the values that exist in society because they try to group themselves with existing members of society, who prioritize common interests rather than self-interest.

Values are ideas or concepts, a person's concept of something that is considered important in life. Values are something valuable, both according to logical standards (right-wrong), aesthetics (good-bad), ethics (fair, proper-unfit), religion (sin and haram-halal), and law (valid-valid) and become a reference and/or belief system for oneself and one's life. Values can be divided into two groups, namely: (1) values of conscience, and (2) values of giving. Values of conscience are values that exist within humans which then develop into behavior and ways of treating others. Examples: honesty, courage, love of peace, self-reliability, etc. While values of giving are values that need to be practiced or given which will then be received as much as given. Examples: loyalty, trustworthiness, respect, love, affection, and others. Values as values are beliefs, missions, or meaningful philosophies. The definition of value can be concluded as follows: value is a human capacity that can be manifested in the form of ideas or concepts, psychological conditions or valuable actions (subject value), and the value of an idea or concept, psychological condition or action (object

value) based on religious standards, philosophy (ethics and aesthetics) and community norms (value references) that are believed by individuals so that they become the basis for considering, behaving and behaving for individuals in personal and social life. Thus, value can be interpreted as something that is related to the psychological dimension (feelings), the dimension of taste (taste), the dimension of thinking (psychic), and the dimension of the body (physical) and other dimensions that are considered valuable for the creation of whole behavior and morals so that humans can live in society. According to Koenjaraningrat, human values (ethical or moral values) are something that concerns human behavior and actions that are in accordance with norms and respect human dignity. The values of truth are the same as human values, namely important or useful traits (things) in life (Nurgiyantoro, 2010).

Sada (2011) stated that human values have the word human which means that these values are unique to mankind and not to animals, and human values must be universal which means they do not depend on race, group, tradition and culture. Therefore, human values are values that must be understood and practiced by all mankind.

The Institute of Sathya Sai Education quoted by Chibber (in Clarry Sada) stated five types of human values, namely: (1) Truth Values, (2) Peace Values, (3) Love Values, (4) Correct Behavior Values or virtues, and (5) Non-Violence Values. In more detail, these human values are defined as follows:

1. Truth is something that does not change and is eternal. Truth may be expressed or stated through various paths, names and forms but the truth is always one. The elements of truth values, among others, are always curious, not discriminating, intuition, seeking knowledge, the spirit of investigating or finding, liking the truth.
2. Peace is joy and serenity that comes from within. Peace requires a person's ability to introspect and be self-aware so that people will be able to organize their thoughts, words and needs. A clear mind requires discipline to introspect and reflect on their experiences. Therefore, true peace requires an effort without having to calculate profit or loss, success or failure, pain or happiness. The elements of peace include calmness, concentration, endurance, fortitude, purity, self-discipline, and self-respect.
3. Love or Affection is pure compassion that motivates selfless service for the good of others. Love may be better expressed or stated as an energy that permeates the entire human soul. Therefore, love or affection is not just a feeling of emotion or lust, but something deeper and more fundamental than human nature. In the history of mankind, love plays a major role in uniting the diversity that exists in this world. Love is not only possessed by humans, but love is also possessed by all living creatures in this world. The elements of the Values of love include tolerance, caring, empathy, and affection. Love can be interpreted as the act of giving and forgiving. Other elements of Love are caring, surrender, empathy, patience, friendship.
4. Right behavior or virtue is behaving correctly or having the right attitude. This behavior is a trait derived from a person's generosity and love for others. Right behavior in an action will become virtue. Right behavior comes from the Sanskrit word "Dharma" which includes a number of codes of ethics, ethical and moral traits of honesty and justice. All of which mean "do good, see good and behave well". Right behavior or virtue as an "umbrella" of human behavior is intended to be a guide for humans in achieving their desires. For example, people must be able to use time, energy, money, food consciously and correctly. Thus, right behavior will be formed through a long educational process. The elements of the values of right behavior or virtue are cleanliness, fighting spirit, purpose, obligation, honesty, and service to others.

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5. Non-violence is the culmination of all the human values mentioned above. The manifestation of non-violent values is to obey and respect the laws of nature, and laws and regulations. Non-violent values are a reflection of the manifestation of morality and integrity so that world peace and global harmony will be achieved if non-violent ethics can be realized in world life. The elements of non-violent values are awareness of responsibility as citizens, compassion, consideration of others, harmlessness, helpfulness, and justice.

Science Education in Elementary School

IPA is an abbreviation of "Natural Science" which is a translation of the English "Natural Science". Natural means natural or related to nature. Science means knowledge. So according to its origin, IPA means science about nature or science that studies events in nature (Srini M. Iskandar, 1996). IPA is rational and objective knowledge about the universe and all its contents (Hendro Darmodjo, 1992). According to Nash 1963 (in Hendro Darmodjo, 1992) IPA is a way or method to observe nature that is analytical, complete, accurate and connects one natural phenomenon with another natural phenomenon. Meanwhile, according to Powler (in Winaputra, 1992) IPA is a science related to natural phenomena and systematic objects that are arranged regularly and generally applicable in the form of a collection of observation and experiment results.

IPA is also often referred to as science. Science is a translation of the word science which means natural problems (nature). Science is knowledge that studies natural phenomena (Usman Samatowa, 2010). Science is knowledge whose truth has been empirically tested through scientific methods (Uus Toharrudin, Sri Hendrawati 2011). Science is a way of investigation to obtain data and information about the universe using observation methods and hypotheses that have been tested (Uus Toharrudin, Sri Hendrawati 2011). Science learning in elementary schools is intended to provide students with the opportunity to cultivate a natural curiosity, develop the ability to ask questions and find answers to natural phenomena based on evidence, and develop scientific thinking. The objectives of science subjects in elementary schools/Islamic elementary schools based on the School Level Curriculum are:

- 1) to gain confidence in the greatness of God Almighty based on the existence, beauty and order of His creations
- 2) to develop knowledge and understanding of science concepts that are useful and can be applied in everyday life
- 3) to develop curiosity, positive attitudes and awareness of the mutually influential relationship between science, technology and society
- 4) to develop process skills to investigate the surrounding environment, solve problems and make decisions
- 5) to increase awareness to participate in maintaining, protecting and preserving the natural environment
- 6) to increase awareness to appreciate nature and all its order as one of God's creations, and
- 7) to obtain knowledge, concepts and science skills as a basis for continuing education to a higher level (Mulyasa, 2006).

In accordance with the learning objectives and the nature of science, that science can be viewed as a product, process and attitude, then in science learning in elementary school must include the 3 dimensions of science. Science learning not only teaches mastery of facts, concepts and principles about nature but also teaches methods of solving problems, trains critical thinking skills and draws conclusions, trains objective attitudes, cooperates and respects the opinions of others. The appropriate science learning model for elementary school

children is a learning model that adapts students' learning situations to real life situations in society. Students are given the opportunity to use the tools and learning media available in their environment and apply them in everyday life (Usman Samatowa, 2006).

Science learning should be carried out through inquiry and action to gain a deep understanding of nature and foster the ability to think, work and behave scientifically (Mulyasa, 2006). So, science learning in elementary school/MI emphasizes more on providing direct experience according to reality in the environment through inquiry activities to develop scientific process skills and attitudes. Science process skills given to elementary school children must be modified and simplified according to their cognitive development stage. The cognitive structure of children is different from the cognitive structure of scientists. The learning process and development of elementary school children tend to learn from concrete things, viewing something learned as a whole, integrated and through a manipulative process. Therefore, science process skills given to elementary school children must be modified and simplified according to their cognitive development stage.

Science process skills that must be developed include: (1) observation, (2) classification, (3) interpretation, (4) prediction, (5) hypothesis, (6) controlling variables, (7) planning and implementing research, (8) inference, (9) application, and (10) communication (Hendro Darmodjo and Kaligis, 2006). According to Rezba et.al 1995 (in Patta Bundu, 2006) basic science process skills for elementary school level include observing, classifying, measuring, communicating, predicting, and inferring.

Meanwhile, according to Paolo Marten (in Usman Samatowa, 2006: 12) defines children's process skills as observing, trying to understand what is observed, using new knowledge to predict what will happen and testing the truth of the prediction. An important aspect that teachers must pay attention to in implementing science learning in elementary schools is to actively involve students in learning to develop their thinking skills. Science learning begins by paying attention to students' initial conceptions/knowledge that are relevant to what will be learned. Furthermore, learning activities are designed through various real activities with nature. These real experience activities with nature can be carried out in the classroom or laboratory with teaching aids or carried out directly in the open air. Through these real activities with nature, students can develop process skills and scientific attitudes such as observing, trying, concluding the results of activities and communicating the conclusions of their activities.

Science learning activities are also designed to provide as many opportunities as possible for students to ask questions. By asking questions, children will practice expressing ideas and responses to the problems they face so that they can develop science knowledge. In addition to asking questions, students are also given the opportunity to explain a problem based on their thoughts.

Human Values in Science Learning in Elementary Schools

Efforts to integrate human values into the Natural Science (IPA) learning process at the Elementary School level. This is an educational approach that aims to not only teach scientific concepts to students, but also instill moral and ethical values that are important for their character development. In this context, human values include aspects such as empathy, concern for the environment, social responsibility, scientific ethics, cooperation, and healthy curiosity. This approach seeks to bridge the gap between scientific knowledge and moral values, with the aim of forming students who are not only academically intelligent but also have social and environmental sensitivity.

Science learning in elementary schools by integrating human values can involve various methods, such as project-based learning related to social or environmental issues, ethical discussions in the context of scientific experiments, or field activities that foster concern for nature. For example, when learning about ecosystems, students not only learn

about biological concepts, but are also invited to understand the importance of maintaining environmental balance and the impact of human actions on nature. This approach also considers the important role of teachers as models and facilitators in instilling human values. Teachers are required to design learning experiences that are not only informative but also inspiring and reflective.

Although it has great potential in forming a more responsible and caring generation, this approach also faces challenges in its implementation. This includes the need for curriculum adjustments, teacher training, and the development of evaluation methods that can measure not only conceptual understanding but also the development of student character.

By integrating human values into science learning in elementary schools, it is hoped that a strong foundation can be formed for students to become individuals who have good scientific knowledge as well as strong character and sensitivity to social and environmental issues. This approach is in line with the broader goal of education, namely preparing the younger generation to become responsible citizens and contribute positively to society and the environment.

CONCLUSION

Integration of human values in science learning in elementary schools is a holistic educational approach that aims to develop not only students' cognitive abilities, but also their character and social sensitivity. This approach combines the teaching of scientific concepts with the instillation of values such as empathy, environmental responsibility, scientific ethics, and cooperation. Through innovative learning methods such as problem-based projects, ethical discussions, and field activities, students are invited to understand the relationship between science and its impact on society and the environment. The role of teachers as facilitators and role models is crucial in realizing meaningful learning. Despite facing challenges in implementation, such as the need to adjust the curriculum and develop comprehensive evaluation methods, this approach has great potential in forming a generation that is not only academically intelligent, but also has a strong character and cares about others and the environment.

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