

Implementation of Islamic Values-Based Deep Learning Approach in Natural and Social Science Learning in Elementary Schools

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Abstract

This study is grounded in the importance of implementing a deep learning approach within the Merdeka Curriculum, which emphasizes not only conceptual mastery but also character formation, spiritual awareness, and meaningful learning experiences, particularly in Natural and Social Sciences (IPAS) instruction at the elementary level. This study aims to describe the planning, implementation, and evaluation of IPAS learning through a deep learning approach grounded in Islamic values, to analyze the forms and processes of integrating Islamic values into that learning, and to examine its impact on students' learning experiences, conceptual understanding, and Islamic character formation at SDN 003 North Bontang. A qualitative case-study approach was employed. Data were gathered through observation, in-depth interviews, and documentation, then analyzed using the interactive model of Miles, Huberman, and Saldana comprising data condensation, data display, and conclusion drawing, with validity established through source, technique, and time triangulation as well as member checking. The findings show that deep learning was implemented systematically through the preparation of Deep Learning Lesson Plans (RPPM), the application of Problem Based Learning and Inquiry/Discovery Learning strategies, and meaningful reflection grounded in Islamic values; the integration of tawhid and akhlak values occurred at every stage of learning, from apperception to reflection, across the topics of the water cycle, light, the respiratory system, environmental preservation, and cultural heritage; and this implementation positively affected students' engagement, enthusiasm, conceptual understanding, problem-solving ability, and the strengthening of Islamic character traits such as responsibility, care, cooperation, tolerance, and gratitude. This study concludes that a deep learning approach grounded in Islamic values can produce IPAS instruction that is more meaningful, contextual, and reflective, and oriented toward the intellectual, spiritual, and character development of students.

Keywords

Deep Learning, Islamic Values, Natural And Social Sciences, Merdeka Curriculum



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INTRODUCTION

21st century education demands the education system to produce human resources who are not only academically superior, but also have strong skills and character in the face of the development of science, technology, and globalization. Education is no longer sufficiently oriented to the mastery of factual knowledge, but is directed towards the development of critical thinking skills, creativity, communication, collaboration, and the formation of students' character as a whole, as affirmed through the implementation of the Independent Curriculum which focuses on developing potential, 21st century skills, and strengthening students' character (Mongkau & Pangkey, 2024). In line with these demands, the learning paradigm has shifted from a teacher-centered approach to a student-centered approach, where students are positioned as active subjects who are directly involved through exploration, discussion, and reflection on their learning experiences, while the role of teachers shifts to facilitators who guide the development of learning independence and responsibility (Hidayati, Syarif, & Gusmaneli, 2024).

This change is also marked by a shift from surface learning to deep learning, which emphasizes conceptual understanding, interconnectedness, reflection, and the ability to apply knowledge in real-life contexts, and is believed to be able to produce more sustainable and meaningful learning than superficial learning that is oriented towards mere memorization (Fullan, Quinn, & McEachen, 2018). However, technological advances and globalization also bring serious challenges in the form of the degradation of moral and spiritual values of students, because education that overemphasizes cognitive aspects and technical skills risks neglecting its affective and spiritual dimensions (Kusumah et al., 2024). In the perspective of Islam, true knowledge should give birth to piety and moral awareness, as affirmed by Allah SWT. in Q.S. Fāṭir/35: 28 that among His servants, only the scholars that is, those who are knowledgeable about the shari'a and natural and social phenomena truly have fear of Him (Ministry of Religious Affairs of the Republic of Indonesia, 2019). This verse affirms that true knowledge not only produces intellectual intelligence, but also forms ethical and spiritual awareness that is reflected in human attitudes and behavior.

In the national context, the Independent Curriculum policy responds to these challenges through an emphasis on meaningful learning, flexibility, and character strengthening through the Pancasila Student Profile (Mulyasa, 2022). Deep learning in the Independent Curriculum is directed to form a complete graduate profile through eight dimensions faith and piety, citizenship, critical reasoning, creativity,

collaboration, independence, health, and communication which are understood as a unit of competencies that are integrated into the learning experience (Ministry of Education and Education, 2025). The principle of deep learning emphasizes the creation of a mindful, meaningful, and joyful learning process through the active involvement of students in authentic, reflective, and collaborative learning experiences, so that students experience the process of understanding, applying, and reflecting on knowledge for themselves instead of just passively receiving information.

At the elementary school level, the Independent Curriculum integrates Natural and Social Sciences (IPAS) subjects as a means of building students' understanding of natural and social phenomena in an integrated manner, which not only aims to develop scientific and social literacy, but also fosters environmental awareness, social responsibility, and awareness as part of society and God's creation (Faiz, Purwati, & Kurniawaty, 2022). Therefore, IPAS learning requires a strong foundation of values so that it is not morally neutral. Islamic values such as monotheism, trust, adab, honesty, responsibility, and social concern are very relevant to be integrated in deep learning, because deep learning in an Islamic perspective is not only oriented to understanding concepts, but also to the process of internalizing values that encourage students to think reflexively (*tadabbur*) and behave according to Islamic teachings (Nurdin, 2020). The natural and social phenomena studied in IPAS can be understood as signs of the power of Allah (*āyāt kauniyyah*) that strengthen the value of monotheism, as affirmed in Q.S. *Āli 'Imrān*/3: 190, as well as instilling an awareness of human responsibility as a caliph on earth as Q.S. *Al-Baqarah*/2: 30 and the prohibition of doing damage on earth in Q.S. *Al-A'rāf*/7: 56 (Ministry of Religious Affairs of the Republic of Indonesia, 2019). Islam places humans as caliphs with the responsibility of preserving the environment, as emphasized by the Prophet Muhammad (saw) that the activity of planting and preserving nature is worth alms (H.R. al-Bukhari and Muslim), so that IPAS learning has a strategic role in instilling ecological awareness based on Islamic values.

Empirically, the learning conditions of science at SDN 003 Bontang Utara still tend to be oriented towards cognitive achievement, where the learning process emphasizes more mastery of material and academic learning outcomes, while aspects of meaning and internalization of values have not been optimally integrated. The integration of Islamic values in science learning in the school has not been structured in an in-depth learning approach; Islamic values are often conveyed normatively and have not been systematically integrated in the planning, implementation, and

evaluation of learning, so that IPAS has not fully functioned as a means of forming students' character and spiritual awareness. In addition, there has not been a qualitative study that has in-depth examined the process, strategies, and challenges of implementing an in-depth learning approach based on Islamic values in IPAS learning in elementary schools.

Islamic education emphasizes holistic human development which includes thinking, feeling, heart, and sports, so that the goal is not only to produce intellectually intelligent human beings, but also to have noble and responsible character in social life (Nata, 2021; Muhaimin, 2021a). The characteristics of deep learning according to the Ministry of Education (2025) namely being student-centered, encouraging active engagement, developing critical and creative thinking, connecting learning with real contexts, integrating knowledge, skills, and character, developing reflection skills, fostering curiosity, and providing a pleasant learning experience show a fundamental conformity with the principles of Islamic education that also place the learning process as a means of forming knowledge, awareness, and wisdom. This conformity is also reflected in Q.S. Al-Baqarah/2: 31 about the teaching of names to the Prophet Adam (a.s.), which shows that the first educational process in Islam takes place through the stages of introduction, understanding, and testing of knowledge, not just the delivery of one-way information (Ministry of Religion of the Republic of Indonesia, 2019).

A number of previous studies have examined adjacent themes. Hasanuddin, Rohmad, and Wachidah (2025) show that the application of deep learning in Islamic Religious Education (PAI) learning in high school is able to increase student interaction and engagement. Nurhayati, Sahra, Hidayat, and Selfianugrah (2025) found that the deep learning approach increases the active participation and critical thinking, creativity, and reflective thinking skills of high school students, while Astuti (2025) explains that deep learning is able to transform PAI learning that was originally memorization-oriented into learning that emphasizes experience and reflection. Della, Attamimi, Hasanah, Khairunnisa, and Noor (2025) showed that deep learning-based PAI teaching materials are able to strengthen conceptual understanding as well as the practice of Islamic values, and Rahmawati (2026) found that the application of mindful, meaningful, and joyful learning principles improves the quality of PAI learning. Wijaya, Wahab, and Kurniawan (2024) show that the Independent Curriculum provides a wider space for teachers to develop contextual learning that is oriented towards strengthening character. The six studies are relevant because they both examine in-depth learning and/or the Independent Curriculum,

but generally focus on PAI subjects at the secondary level, the development of teaching materials, or the implementation of the curriculum in general, so that no research has been found that specifically examines the implementation of deep learning based on Islamic values in science subjects in elementary schools, especially those that focus on the integration of monotheistic values and morals through the Problem strategy Based Learning, Inquiry Learning, and meaningful reflection and discussion.

The novelty of this research lies in the integration of three aspects in one study, namely deep learning based on mindful, meaningful, and joyful learning; integration of Islamic values focused on the values of tauhid and morals; and IPAS learning in Phase C of elementary schools in the context of the Independent Curriculum, which is analyzed through aspects of planning, implementation, and evaluation of learning and its impact on students' learning experiences and the role of teachers. Based on this description, this study aims to: (1) describe the planning, implementation, and evaluation of social studies learning with an in-depth learning approach based on Islamic values at SDN 003 Bontang Utara; (2) analyze the form and process of integrating Islamic values in social studies learning through an in-depth learning approach; and (3) analyze the impact of the implementation of the approach on the learning experience, conceptual understanding, and formation of students' Islamic character.

METHODS

This research is a field research with a qualitative approach of the type of case study, which was chosen because it aims to understand and describe in depth the phenomenon of the implementation of an in-depth learning approach based on Islamic values in learning social studies in natural situations and contexts (Moleong, 2023; Sugiyono, 2023). The research was carried out at SDN 003 Bontang Utara, Bontang City, East Kalimantan, with the consideration that the school has implemented the Independent Curriculum and developed learning that integrates Islamic values. The research was carried out in the Even Semester of the 2025/2026 Academic Year for approximately four months, starting from February to May 2026.

The data source consists of primary data and secondary data. Primary data was obtained directly from the principal of SDN 003 North Bontang, grade V teachers who teach social studies learning, and 33 students in class V. Secondary data was obtained through the IPAS Deep Learning Implementation Plan (RPPM), Learning Objectives (ATP) and Learning Objectives (TP) flows, Education Unit

Operational Curriculum (KOSP) documents, learning photos and documentation, as well as relevant books, journals, and research (Bungin, 2022). In qualitative research, researchers are positioned as the main instrument (human instrument) that plays a role in planning, collecting, analyzing data, and drawing conclusions, assisted by supporting instruments in the form of observation guidelines, interview guidelines, documentation guidelines, and field notes (Sukmadinata, 2022).

The data collection technique is carried out in three ways. First, observations are carried out to directly observe the application of Problem Based Learning, Inquiry Learning, meaningful reflection and discussion, as well as the integration of monotheistic values and morals in learning. Second, in-depth interviews were conducted with school principals, class V science teachers, and students to explore data on planning, implementation, learning evaluation, integration of Islamic values, and learning impacts. Third, documentation is carried out on teaching modules, student worksheets (LKPD), learning assessments, activity photos, school program documents, and student reflection results.

Data analysis uses the interactive model Miles, Huberman, and Saldana which includes three stages, namely data condensation by selecting, focusing, and simplifying field data; data presentation (data display) in the form of descriptive narratives, matrices, tables, and charts according to the focus of the research; as well as drawing conclusions and verifying that are carried out continuously until credible findings are obtained. To ensure the validity of the data, this study uses source triangulation by comparing data from principals, teachers, and students; triangulation of techniques by comparing the results of observations, interviews, and documentation; time triangulation by collecting data at different times; and member check by reconfirming data and findings to informants.

RESULTS AND DISCUSSION

Planning, Implementation, and Evaluation of Social Science Learning with an Approach to Deep Learning Based on Islamic Values

The results of the study show that the social science learning planning at SDN 003 Bontang Utara is prepared based on the Independent Curriculum, Learning Outcomes (CP), Learning Objectives (TP), and the Operational Curriculum of the Education Unit (KOSP) of the school. Teachers systematically prepare the Deep Learning Implementation Plan (RPPM) by selecting five materials that are close to the lives of students, namely water cycle, light, human respiratory system, environmental conservation efforts, and cultural heritage, while integrating the three

main dimensions of deep learning mindful learning, meaningful learning, and joyful learning as the framework of the learning design (Ministry of Education and Education, 2025).

In the implementation stage, the mindful learning dimension appears through the teacher's steps to start each material with real experiences or problems around students, in line with Ellen J. Langer's theory that learning awareness is formed when individuals are open to new things and are able to connect knowledge with the surrounding reality. In the water cycle material, students are invited to observe the phenomenon of rain and flood through triggering questions such as "why can rain fall" and "why floods often occur during heavy rains", so that learning awareness is built from experience, not from mere theory. In light materials, awareness is built when the teacher turns off the classroom lights so that students directly feel the importance of light in their activities. In the respiratory system material, students are invited to run a little in place and observe changes in their breathing, so that they realize that breathing is an important process that takes place without them realizing it. In the environmental conservation material, the teacher showed pictures of the dirty environment and flooding due to garbage, which raised awareness that environmental problems were close to students' lives. In cultural heritage materials, the screening of images of traditional clothing, traditional houses, songs, and regional dances builds students' awareness of culture as the nation's identity.

The dimension of meaningful learning appears when students are guided to relate the concept of IPAS with Islamic experiences and values, in line with David P. Ausubel's theory that meaningful learning occurs when new information is associated with the cognitive structure that students already have. In the water cycle material, students relate the stages of evaporation, condensation, precipitation, and infiltration to the causes of flooding in the surrounding environment, as well as interpreting water as a blessing of Allah that must be maintained. In light material, students relate the nature of light to direct propagation and reflection with the use of windows, mirrors, and mirrors in daily life, and interpret light as a blessing from Allah. In the respiratory system material, students relate the function of the respiratory organs to the experience of shortness of breath when tired or coughing when exposed to dust, and interpret body health as a form of gratitude. In the environmental conservation material, students relate the concept of 3R (reduce, reuse, recycle) to the condition of waste in their environment through ecobrick practices, and in the cultural heritage material, students interpret cultural diversity as part of the identity and diversity of God's creation.

The joyful learning dimension is realized through experimental activities and direct practice that fosters students' enthusiasm, in line with Ki Hadjar Dewantara's view that education must provide a sense of pleasure so that students develop optimally. For example, simple experiments of evaporation and condensation on water cycle materials, experiments on the properties of light using flashlights and mirrors, making simple lung models from bottles and balloons on respiratory system materials, ecobrick practices on environmental conservation materials, and performances of regional songs and dances on cultural heritage materials.

Operationally, the implementation of learning applies two main strategies, namely Problem Based Learning (PBL) and Inquiry/Discovery Learning, which are complemented by meaningful reflection and discussion based on Islamic values. PBL is applied consistently through the stages of problem orientation, student organization, investigation, solution development, and evaluation and reflection on each material, so that students are placed as active subjects in finding solutions to contextual problems (Arends, 2018; Rusman, 2022). Inquiry/Discovery Learning is directed at independent investigation, observation, and experiment activities so that students can relate scientific phenomena to the greatness of Allah SWT., for example in water cycle experiments and experiments on the properties of light. Meanwhile, meaningful reflection and discussion are focused on strengthening the spiritual and affective dimensions through the association of IPAS material with Islamic teachings in daily life, which is carried out at the final stage of each meeting.

The application of Inquiry/Discovery Learning in each material shows a consistent pattern, namely students are directed to discover the concept of IPAS themselves through observation and experimentation before the teacher provides reinforcement of the concept. In the water recycling material, students made simple observations of the process of evaporation of hot water that turned into dew points on cold plastic surfaces, so that they discovered the concept of condensation for themselves before the term was formally explained by the teacher. In light materials, students conduct experiments using flashlights, mirrors, perforated cardboard, and glasses filled with water to find the properties of light such as propagating straight, reflectable, and refractorable, so that understanding is formed through direct experience, not memorization of definitions. In the human respiratory system material, students observed a simple lung model made from plastic bottles and balloons to find the relationship between diaphragm movement and the process of air in and out. In the environmental conservation effort material, students conduct a simple investigation of the types of waste in the school environment to find for

themselves the categories of organic and inorganic waste as the basis for the 3R practice. In the cultural heritage material, students searched for information about a variety of traditional clothing, traditional houses, and regional dances from various regions of Indonesia, then presented their findings in front of the class. This kind of inquiry pattern is in line with the view that independent inquiry strengthens memory and conceptual understanding compared to passive receiving information (Rusman, 2022; Sanjaya, 2016).

Meaningful reflection and discussion based on Islamic values are carried out consistently in the final stages of each meeting through reflective questions that connect the IPAS material with Islamic teachings, for example "what lessons can be drawn from the water cycle process for human life" or "what is our attitude as caliphs towards environmental sustainability". Through this kind of question, students are not only asked to repeat the scientific concepts that have been learned, but also encouraged to reflect on the spiritual meaning and behavioral implications of this knowledge in daily life, so that social studies learning doubles as a cognitive reinforcement as well as a reinforcement of values.

A summary of the implementation of the three dimensions of deep learning and learning strategies in the five materials is presented in Table 1.

Table 1. Summary of the Implementation of Deep Learning in Five IPAS Materials

IPAS Materials	Mindful Learning Activities	Meaningful Learning Activities	Joyful Learning Activities
Water Cycle	Observing the phenomenon of rain and flooding	Linking the stages of the water cycle to the causes of flooding	Evaporation and condensation experiments
Light	Experiencing a dark space without light	Linking the nature of light to domestic activities	Experiments with flashlights, mirrors, and perforated cardboard
Respiratory System	Observing changes in breath after running	Linking organ function to physical experience	Making a model of the lungs from bottles and balloons
Environmental	Observing images	Connecting the 3R	Ecobrick

Conservation	of polluted environments	concept with the surrounding waste	manufacturing practices
Cultural Heritage	Observing the cultural image of the region	Interpreting culture as the identity of the nation	Featuring regional songs and dances

In the evaluation stage, teachers carry out initial assessments, process assessments, and final assessments that include cognitive, affective, psychomotor, and spiritual aspects to see the development of concept understanding, practical skills, social attitudes, and strengthening Islamic values in students. Cognitive assessments are carried out through oral and written questions on the Student Worksheet (LKPD) to measure the understanding of the concept of social studies in each material, affective and spiritual assessments are carried out through attitude observation sheets that record students' participation, cooperation, and responses to reflective questions based on Islamic values, while psychomotor assessments are carried out through the observation of practical skills such as assembling a simple lung model or arranging ecobricks. The three forms of assessment complement each other so that learning evaluation not only measures academic achievement, but also describes the development of students' character and spiritual awareness as a whole, in line with the principles of holistic evaluation in the Independent Curriculum (Kemendikbudristek, 2022c). Thus, the implementation of deep learning in social studies learning at SDN 003 Bontang Utara has been carried out in a structured and systematic manner, and is in line with the objectives of the Independent Curriculum and Islamic education.

Form and Process of Integration of Islamic Values (Tauhid and Akhlak) in IPAS Learning

The results of the study show that the integration of Islamic values in social studies learning at SDN 003 Bontang Utara is focused on strengthening the two main values, namely monotheism and morality, which are internalized at each stage of learning starting from perception, delivery of material, discussion, practice, to reflection, rather than being taught as separate material.

The integration of the value of monotheism is realized through the association of IPAS material with the verses of the Qur'an and natural phenomena as signs of the greatness of Allah SWT. In the water cycle material, students are guided to understand that water is Allah's grace for all living things and that the regularity of

the water cycle reflects sunnatullah, referring to Q.S. Al-A'rāf/7: 56 regarding the prohibition of doing damage on earth. In light material, students understand light as a blessing of Allah and part of the order of the natural laws of His creation, in line with Q.S. Āli 'Imrān/3: 190 about the signs of Allah's greatness for the intellectual. In the material on the human respiratory system, students are guided to appreciate the perfection of God's creation in the human body through the observation of the process of inspiration and expiration. In the material on efforts to preserve the environment and cultural heritage, students understand that the earth, nature, and cultural diversity are the mandate and gifts of Allah that must be maintained, referring to the concept of human caliphate on earth in Q.S. Al-Baqarah/2: 30.

The integration of moral values is carried out through habituation of attitudes and behaviors during the learning process. Students are accustomed to having responsibilities in protecting the environment, discipline in learning, working together in groups, respecting the opinions of friends, and fostering tolerance in cultural diversity. These moral values are strengthened through real activities such as the practice of making ecobricks, group discussions, experiments, and presentation of learning results, so that morals are not only taught normatively but are trained directly in learning experiences. A summary of the form of integration of tauhid and moral values in the five IPAS materials is presented in Table 2.

Table 2. Forms of Integration of Tauhid and Moral Values in IPAS Learning

IPAS Materials	Strengthening the Value of Tawheed	Strengthening Moral Values
Water Cycle	Water as mercy and sunnatullah (Q.S. Al-A'rāf/7:56)	Responsibility to maintain environmental cleanliness
Light	Light as a blessing and a sign of Allah's greatness (Q.S. Āli 'Imrān/3:190)	Discipline and rigor in experimenting
Respiratory System	The perfection of God's creation in the human body	Gratitude and maintaining personal health
Environmental Conservation	The earth as the trust of the caliphate (Q.S. Al-Baqarah/2:30)	Environmental concern and group cooperation

Cultural Heritage	Diversity as a gift and creation of God	Tolerance and respect for differences
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However, the results of the study also reveal challenges in the integration process. Teachers face limited time in compiling the right relationship between each IPAS sub-material with the relevant values of monotheism and morals, considering that not all science concepts have explicit equivalent verses or hadiths so teachers need to carry out contextual interpretation independently. In addition, the level of understanding of grade V students to the abstract concept of monotheism still varies, so teachers need to simplify explanations through analogies and concrete experiences so that these values can be understood according to the stages of cognitive development of elementary school-age children. This obstacle is in line with the finding that the implementation of deep learning in elementary schools still faces various technical obstacles and teacher readiness (Wibowo, Gunawan, & Mardiana, 2025), so continuous assistance and strengthening of teachers' competence in designing systematic value integration are needed.

The process of internalizing Islamic values takes place thoroughly at each stage of learning: at the stage of perception, the teacher associates the observed phenomenon with the greatness of Allah; At the stage of delivering the material, scientific concepts are explained along with relevant Islamic values; at the discussion stage, students are encouraged to relate the findings with Islamic teachings in daily life; at the practical level, moral values are trained through cooperation and group responsibility; And at the reflection stage, students are invited to reflect on the spiritual meaning of the material studied. Thus, Islamic values become an integral part of the overall IPAS learning experience, not just a complement to the material.

The Impact of the Implementation of Deep Learning Based on Islamic Values on Students' Learning Experience, Conceptual Understanding, and Islamic Character

The results of the study show that the implementation of an in-depth learning approach based on Islamic values has a positive impact on three main aspects, namely learning experience, conceptual understanding, and the formation of students' Islamic character. In the aspect of the learning experience, students show increased activeness, enthusiasm, and focus during the learning process. Students become more courageous to ask questions, express opinions, discuss, and participate in practical activities and experiments than when learning only takes place in one direction. These findings are in line with the research of Nurhayati, Sahra, Hidayat, and Selfianugrah (2025) which found that a pleasant learning atmosphere has a

positive impact on student engagement, as well as the research of Hasanuddin, Rohmad, and Wachidah (2025) which confirms that the joyful learning dimension is able to increase students' motivation and active participation.

In the aspect of conceptual understanding, students are able to understand IPAS material more deeply because learning is always associated with real experiences and Islamic values. Students not only know the concept theoretically, but are also able to connect, analyze, and solve contextual problems, for example explaining the relationship between high rainfall, the habit of littering, and flooding. These findings support the research of Fatma and Rahmanita (2023) who show that deep learning is able to improve the quality of students' conceptual understanding because the material is always associated with the real context, as well as the research of Astuti (2025) which emphasizes that meaningful learning improves students' ability to connect knowledge with life experiences.

In the aspect of Islamic character formation, deep learning based on Islamic values has an impact on the growth of discipline, responsibility, cooperation, tolerance, concern for the environment, and gratitude to Allah SWT. These values develop through habituation during the learning process and are strengthened through reflection based on Islamic values at the end of each meeting. This finding is in line with the research of Della, Attamimi, Hasanah, Khairunnisa, and Noor (2025) which shows that Islamic value-based learning is able to strengthen the practice of values as well as the formation of students' character. In more detail, the improvement in the learning experience aspect is also seen in the ability of students to stay focused and not easily distracted during the activity, especially in sessions that involve experiments and hands-on practices such as making lung models and ecobricks. Teachers reported that students who previously tended to be passive began to show initiative to ask questions and propose ideas in group discussions, a change not apparent when learning relied solely on lectures and written assignments.

In terms of conceptual understanding, students' problem-solving ability is also seen in their ability to relate one concept to another across materials, for example, connecting the importance of a balanced water cycle with environmental conservation efforts, or connecting the function of the respiratory organs with the importance of maintaining clean air in the surrounding environment. The ability to relate across such concepts shows that students' understanding does not stop at mastering a single fact, but develops into a structured and meaningful understanding. In the aspect of Islamic character, the growth of students' attitudes

seems consistent in all the material taught, as summarized in Table 3.

Table 3. The Impact of the Implementation of Islamic Value-Based Deep Learning on Students

Impact Aspects	Observed Indicators	Key Supporting Materials
Learning Experience	Increased asking activity, enthusiasm, and focus	Light, respiratory system
Conceptual Understanding	Able to connect cause and effect and cross concepts	Water cycling, environmental preservation
Character of Islam	Discipline, responsibility, cooperation, tolerance, gratitude	Environmental preservation, cultural heritage

These findings confirm that the impact of deep learning based on Islamic values is comprehensive, not only limited to one material or one aspect of development, but is consistently observed across materials and across dimensions of student development, both cognitive, affective, psychomotor, and spiritual. Overall, the results of this study strengthen the theory that deep learning based on the principles of mindful learning, meaningful learning, and joyful learning can be effectively integrated with Islamic values in science learning in elementary schools. This integration not only has an impact on strengthening academic aspects, but also forms more complete students intellectually intelligent, emotionally mature, spiritually strong, and noble.

This research has limitations that need to be put forward as a consideration for future research. First, this study is only focused on one class, namely class V of SDN 003 Bontang Utara, so the findings obtained are contextual and cannot necessarily be generalized to other educational units with different characteristics of teachers, students, and school cultures. Second, this research only focuses on five IPAS materials, namely water cycle, light, human respiratory system, environmental conservation efforts, and cultural heritage, so that it has not reached all IPAS materials in Phase C of elementary school. Third, this study uses a descriptive qualitative approach so that it has not been able to quantitatively measure how much there is a measurable and standardized increase in conceptual understanding and character development. These limitations open up space for further research that can

expand the scope of locations, materials, and research approaches to enrich the study of the integration of deep learning and Islamic values in science learning in elementary schools.

CONCLUSION

Based on the results of the research on the implementation of the deep learning approach based on Islamic values in learning science at SDN 003 Bontang Utara, three main things can be concluded. First, the planning, implementation, and evaluation of learning is carried out systematically based on the Independent Curriculum through the preparation of RPPM, the implementation of Problem Based Learning and Inquiry/Discovery Learning strategies, as well as meaningful reflection based on Islamic values, with evaluations that include cognitive, affective, psychomotor, and spiritual aspects. Second, the integration of Islamic values is carried out through the strengthening of the values of monotheism and morals that are internalized at all stages of learning from perception, delivery of material, discussion, practice, to reflection on materials that cycle water, light, respiratory systems, environmental conservation, and cultural heritage. Third, the implementation of this approach has a positive impact on increasing the activeness and enthusiasm of students, strengthening conceptual understanding, and forming Islamic character in the form of discipline, responsibility, cooperation, tolerance, environmental concern, and gratitude to Allah SWT.

Theoretically, this study strengthens the concept that deep learning based on the principles of mindful, meaningful, and joyful learning can be effectively integrated with Islamic values in science learning, while contributing to the development of the study of the integration of science and Islamic values in basic education in the context of the Independent Curriculum. Practically, the results of this study provide an idea that teachers can develop more contextual, active, and meaningful social studies learning through the integration of deep learning with Islamic values, while for schools, these results can be considered in developing learning policies that are oriented not only to academic achievement but also to strengthen the character and religious culture of the school. Further research is suggested to develop studies with a wider scope of material or use a quantitative approach to measure the effectiveness of Islamic value-based deep learning in a more measurable manner.

For students, the application of deep learning based on Islamic values provides a more meaningful learning experience while forming Islamic characters

such as responsibility, discipline, environmental concern, cooperation, and tolerance, so that students are expected to be able to understand that learning is not solely to acquire knowledge, but also as a form of worship and strengthening the relationship with Allah SWT. For teachers in particular, It is recommended to continue to develop IPAS learning based on deep learning by integrating Islamic values more systematically in the planning, implementation, and evaluation of learning, while for schools it is recommended to provide support in the form of strengthening programs that encourage the integration of science and Islamic values as part of the school culture in a sustainable manner.

REFERENCES

- Abdullah, A. (2020). *Integrasi interkoneksi keilmuan: Fiafat pendidikan Islam dan sains*. SUKA Press.
- Al-Albani, M. N. (2018). *Shahih Sunan Ibnu Majah* (A. T. Abdurrahman, Terj.). Pustaka Azzam.
- Arends, R. I. (2018). *Learning to teach* (10th ed.). McGraw-Hill Education.
- Arifin, Z. (2022). *Integrasi Islam dan sains dalam pendidikan*. PT Remaja Rosdakarya.
- Astuti. (2025). Pembelajaran bermakna dan penguatan pemahaman konseptual peserta didik. *Jurnal Pendidikan Dasar*, 5(1), 70–82.
- Bungin, B. (2022). *Penelitian kualitatif*. Kencana.
- Della, Attamimi, Hasanah, Khairunnisa, & Noor. (2025). Pengembangan bahan ajar PAI berbasis pembelajaran mendalam. *Jurnal Pendidikan Agama Islam*.
- Faiz, A., Purwati, & Kurniawaty, I. (2022). *Konsep dan implementasi pembelajaran IPAS dalam Kurikulum Merdeka*. CV Media Sains Indonesia.
- Fatma, N., & Rahmanita, N. (2023). Integrasi nilai-nilai pendidikan Islam dalam pembelajaran IPA meningkatkan hasil belajar siswa di sekolah dasar. *Al-Madrasah: Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah*, 7(3), 1288–1298.
- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world change the world*. Corwin Press.
- Hasanuddin, Rohmad, & Wachidah. (2025). Penerapan deep learning dalam pembelajaran Pendidikan Agama Islam di Sekolah Menengah Atas Negeri. *Jurnal Pendidikan Karakter*, 4(2), 50–60.
- Hidayati, S. S., & Gusmaneli. (2024). Strategi pembelajaran dengan model pendekatan pada peserta didik sekolah menengah pertama agar tercapainya tujuan pendidikan. *Jurnal Ilmiah dan Karya Mahasiswa*, 2(3), 1–11.
- Kementerian Agama Republik Indonesia. (2019). *Al-Qur'an dan terjemahannya edisi*

- penyempurnaan 2019. Lajnah Pentashihan Mushaf Al-Qur'an.
- Kementerian Pendidikan Dasar dan Menengah Republik Indonesia. (2025). *Naskah akademik pembelajaran mendalam (deep learning): Menuju pendidikan bermutu untuk semua*. Kemendikdasmen.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia. (2022a). *Capaian pembelajaran mata pelajaran IPAS Fase C*. Kemendikbudristek.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia. (2022b). *Kurikulum Merdeka: Karakteristik dan implementasi Kurikulum Merdeka*. Kemendikbudristek.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia. (2022c). *Panduan pembelajaran dan asesmen Kurikulum Merdeka*. Kemendikbudristek.
- Kusumah, M. W., et al. (2024). Hadith study on human "fitrah" in the hadith literacy and its implication in the Islamic education system. *Living Islam*, 9(2).
- Mangsi, R., & Juniati. (2023). *Manajemen pembelajaran berbasis fitrah*. LovRinz Publishing.
- Marzuki. (2022). *Pendidikan karakter Islam*. Amzah.
- Moleong, L. J. (2023). *Metodologi penelitian kualitatif*. PT Remaja Rosdakarya.
- Mongkau, J. G., & Pangkey, R. D. H. (2024). Kurikulum Merdeka: Memperkuat keterampilan abad 21 untuk generasi emas. *Journal on Education*, 6(4), 22018–22030.
- Muhaimin. (2021a). *Paradigma pendidikan Islam: Upaya mengefektifkan Pendidikan Agama Islam di sekolah*. Rajawali Pers.
- Muhaimin. (2021b). *Pengembangan pendidikan Islam*. Rajawali Pers.
- Mulyasa, E. (2022). *Pengembangan dan implementasi Kurikulum Merdeka*. PT Remaja Rosdakarya.
- Mulyasa, E. (2024). *Implementasi Kurikulum Merdeka*. PT Remaja Rosdakarya.
- Nata, A. (2017). *Perspektif Islam tentang strategi pembelajaran*. Kencana.
- Nata, A. (2021). *Ilmu pendidikan Islam*. Kencana.
- Nurdin. (2020). *Pendidikan tauhid dalam perspektif Islam kontemporer*. Alfabeta.
- Nurhayati, Sahra, Hidayat, & Selfianugrah. (2025). Joyful learning dalam pembelajaran sekolah dasar. *Jurnal Inovasi Pendidikan*, 6(1), 85–95.
- Nurhidayah. (2023). Integrasi nilai tauhid dalam pembelajaran sains pada Kurikulum Merdeka. *Jurnal Pendidikan Islam Indonesia*, 8(2), 118–130.
- Nurhidayah. (2024). Integrasi nilai-nilai Islam dalam pembelajaran IPAS pada Kurikulum Merdeka. *Jurnal Pendidikan Islam Indonesia*, 9(1), 66–78.

- Rahmawati. (2026). Penerapan pembelajaran mendalam dalam pembelajaran PAI. *Jurnal Pendidikan Agama Islam*.
- Ramayulis. (2020). *Filsafat pendidikan Islam*. Kalam Mulia.
- Rusman. (2022). *Model-model pembelajaran: Mengembangkan profesionalisme guru*. Raja Grafindo Persada.
- Sanjaya, W. (2016). *Strategi pembelajaran berorientasi standar proses pendidikan*. Kencana.
- SD Negeri 003 Bontang Utara. (2025). *Kurikulum Operasional Satuan Pendidikan (KOSP) SDN 003 Bontang Utara Tahun Pelajaran 2025/2026*. SDN 003 Bontang Utara.
- Sufyadi, S., et al. (2021). *Pembelajaran paradigma baru*. Kemendikbudristek.
- Sugiyono. (2023). *Metode penelitian kualitatif*. Alfabeta.
- Sukmadinata, N. S. (2022). *Metode penelitian pendidikan*. PT Remaja Rosdakarya.
- Susanto, A. (2022). *Teori belajar dan pembelajaran di sekolah dasar*. Kencana.
- Wibowo, G., Gunawan, D., & Mardiana, D. (2025). Implementasi pendekatan pembelajaran mendalam (deep learning) dalam meningkatkan pemahaman konsep siswa di sekolah dasar. *Jurnal Pendidikan Dasar*.
- Wijaya, Wahab, & Kurniawan. (2024). Implementasi Kurikulum Merdeka dalam pembelajaran Pendidikan Agama Islam.