Socio Scientific Issue (SSI) Based Interactive Learning Module in Islamic Religious Learning and Ethics at the Basic Level

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ARTICLE INFO	ABSTRACT
	This study aims to develop a Socio Scientific Issue (SSI) Based Interactive Learning Module in the subject of Islamic Religious Education and Ethics at the basic level by using the ADDIE development model which involves the stages of needs analysis, design, development, limited trials, implementation, and evaluation. The research subjects involved 120 elementary school students in Bojonegoro. Data collection instruments include expert validation sheets, student response questionnaires, and observation of student involvement and communication in learning. This module is designed to integrate socio-scientific issues into learning so that it is able to foster an understanding of Islamic values as well as 21st century skills, especially students' active participation and communication skills. The validation of the feasibility of the module was carried out by three experts with very decent results, namely 98% media experts, 97% linguists, and 95% learning experts. Implementation trials showed a significant increase in student engagement, with participation increasing by up to 85% compared to conventional learning, and communication skills increasing by 92%. The implications of this research emphasize the effectiveness of SSI-based modules in enhancing learning quality, strengthening student engagement, and integrating Islamic values with critical thinking and communication skills. This model can support innovative and character-based learning in primary education. Future research may expand implementation to different contexts, introduce more complex SSI themes, and evaluate long-term impacts on students' moral and critical reasoning development.

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1. INTRODUCTION

Islamic Religious Education and Character Education play a central role in shaping students' moral foundations, ethical awareness, and sense of social responsibility from an early age. In the Indonesian education context, these subjects are not only intended to transfer religious knowledge but

also to internalize core values such as honesty, respect, tolerance, and responsibility, which are essential for building a strong national character. However, learning practices in many elementary schools remain dominated by conventional teaching methods, such as lectures and rote memorization, which limit students' opportunities to actively engage with the material and contextualize Islamic teachings in real-life situations. This lack of meaningful engagement has contributed to low levels of critical understanding, weak communication skills, and minimal problem-solving abilities among students. As a result, many students struggle to apply religious and ethical principles when faced with real-world moral and social challenges, which are becoming increasingly complex in the modern era.

The rapid advancement of science, technology, and socio-cultural change requires education to equip students with critical thinking, analytical reasoning, and problem-solving skills that are integrated with religious and moral values. These skills are essential for nurturing individuals who are not only intelligent and adaptive but also responsible and ethical citizens. The development of 21st-century competencies must be supported by learning approaches that go beyond memorization, encouraging students to think reflectively and critically while building connections between religious knowledge and everyday experiences. This urgency underscores the need for innovative pedagogical strategies in Islamic Religious Education, particularly at the basic education level, where moral foundations are being formed. Developing a Socio-Scientific Issue (SSI) Based Interactive Learning Module in Islamic Religious Learning and Ethics at the Basic Level is an essential step in bridging the gap between traditional religious instruction and the demands of a modern, knowledge-based society.

The Socio-Scientific Issues (SSI) approach provides an innovative and relevant learning framework by linking religious concepts with real social and scientific issues, including environmental sustainability, health, science, and technology. Through this approach, students are encouraged to analyze, evaluate, and make informed decisions regarding social issues from both scientific and religious perspectives. By engaging students with authentic, real-world contexts, SSI-based learning strengthens their reflective thinking, empathy, and social awareness, while fostering a deeper understanding of religious teachings. Empirical evidence from several elementary schools in Bojonegoro reveals that student engagement in Islamic Religious Education remains low, with classroom activities still heavily teacher-centered and providing limited opportunities for meaningful discussion, collaborative inquiry, and critical problem-solving. Additionally, there are few Islamic Religious Education learning modules designed specifically using the SSI framework, especially at the elementary level. This condition indicates a clear gap between educational theory—which advocates contextual, inquiry-based learning and actual classroom practices that remain conventional.

This research involves 120 elementary school students in Bojonegoro as the main subjects to develop an SSI-based interactive learning module that integrates Islamic teachings with real-life socio-scientific issues. The module aims to increase students' critical thinking, communication skills, and active participation in learning activities. The design adopts the ADDIE development model, consisting of the stages of analysis, design, development, implementation, and evaluation to ensure that the product is pedagogically sound, practical, and effective. By embedding socio-scientific contexts into religious learning, this study seeks to create learning experiences that are more meaningful, relevant, and capable of shaping students' values and skills simultaneously.

A number of previous studies provide a strong foundation for this research. Zarkasih (2023) developed an SSI-based science e-module integrated with Qur'anic verses, which proved effective in improving students' conceptual understanding and religious value awareness (Zarkasih et al., 2023). Melinda (2022) introduced an SSI-based e-learning model for Madrasah, emphasizing the need for digital learning innovations that align with religious values and the characteristics of post-millennial students (2021 & 2022, 2022). Aalya and Purwaningsih (2025) demonstrated that SSI-based interactive e-modules integrated with micro-projects significantly increase students' participation and analytical thinking skills (Hasil et al., 2025). Khoiri et al. (2024) explored Ethno-SSI approaches, which combine local cultural contexts with socio-scientific issues to promote creative thinking and problem-solving abilities(Khoiri, 2025). Meanwhile, Anatri Desstya et al. (2024) focused on Islamic elementary schools,

developing an SSI-based IPAS learning model that successfully improved scientific literacy and reflective thinking skills among students(Fernanda et al., n.d.).

These studies collectively affirm the effectiveness of SSI in enhancing student engagement and cognitive skills across various educational levels. Moreover, they show that SSI can be integrated with Islamic values to support character development and contextual understanding. This aligns with the national education goals of Indonesia, which emphasize the formation of students with both strong academic competencies and moral integrity. Despite these promising findings, research and development of SSI-based modules specifically for Islamic Religious Education in elementary schools remain limited. This gap underscores the importance of the present study in contributing to pedagogical innovation and curriculum development.

The urgency of this research lies in transforming religious education into a more relevant, contextual, and interactive learning experience (Lin et al., 2025). The module developed in this study is expected to function not only as innovative teaching material but also as a model that can be widely adopted in elementary schools across different regions (Yulia et al., 2024). Its integration of SSI and Islamic values supports Indonesia's National Research Master Plan (RIRN) in the field of digital education, while also contributing to character building and the achievement of national education goals (Runasih et al., 2023). To ensure the quality and feasibility of the product, the research involves collaboration with subject-matter experts, linguists, media developers, and practitioners. Their contributions are essential in evaluating and refining the module to ensure that it meets pedagogical standards and can be effectively implemented in diverse learning contexts.

By bridging the gap between religious teachings and real-world issues, this research is expected to enhance students' ability to think critically and act ethically, preparing them to become reflective, responsible, and engaged citizens in a rapidly changing world. This study also contributes theoretically to the development of contextual religious education frameworks and practically to improving the quality of learning in elementary schools through innovative instructional design.

2. METHODS

This study employed a research and development (R&D) approach with the ADDIE model, which consists of five stages (Aziz et al., 2024; Yulia & Suttrisno, 2024):

Analysis Stage

This stage focused on identifying the learning needs and existing problems in Islamic Religious and Character Education. Curriculum analysis, teacher interviews, and classroom observations revealed low student engagement, limited communication, and teacher-centered learning. A needs analysis was also carried out to determine relevant SSI themes such as environmental ethics, health, and technology to be integrated into the module

Design Stage

Based on the analysis results, the module structure was designed by integrating SSI themes with Islamic values. The learning objectives, content organization, interactive activities, and assessment instruments were developed to encourage critical thinking and active participation. Instruments for expert validation, student responses, and classroom observation were also prepared at this stage

Development Stage

The design was then transformed into a complete interactive learning module. The prototype was validated by media experts, linguists, and learning experts to ensure quality in terms of content, language, and instructional design. Feedback was used to revise and refine the module before classroom implementation.

Implementation Stage

The revised module was tested in classrooms involving 120 students in Bojonegoro. Students and teachers used the module during Islamic Religious and Character Education lessons. Observations, student response questionnaires, and teacher feedback were collected to assess the practicality and effectiveness of the module

Evaluation Stage

Formative evaluation was conducted at each development phase, while summative evaluation measured the module's overall effectiveness in improving participation and communication skills. The results of expert validation, response questionnaires, observations, and learning assessments were analyzed to determine feasibility and learning impact.

The data used in this study were both qualitative and quantitative. Qualitative data consisted of suggestions, comments, and criticisms written by sources obtained through both questionnaires and interviews (18). This data was obtained from elementary school/Islamic elementary school (SD/MI) learning module development experts, science and science learning experts, language experts, teachers, and students. Quantitative data were obtained from questionnaire scores completed by elementary school/IS/MI learning materials experts, science and social experts, language experts, teachers, and students, and from tests and student learning assessment results (19).

Data collection techniques included interviews, expert and teacher questionnaires, and field trials using tests and questionnaires. For the interviews, points to be asked were provided in the interview guide using in-depth interview techniques (20). Interviews were conducted with teachers and students. The feasibility of the learning module was assessed using questionnaires administered to experts and teachers. The expert test questionnaire contained questions regarding the content, language, and visualization of the module. The practitioner test questionnaire contained questions regarding the module's suitability for achieving learning objectives. After the module was revised, it was piloted in elementary schools (SD/MI) in Bojonegoro to determine the effectiveness of the interactive module using the Socio-Scientific Issues (SSI) approach.

Data analysis techniques used quantitative and qualitative analysis (21). Qualitative data obtained from interviews were analyzed through three stages: data reduction, presentation, and conclusions. After the qualitative data was collected, data reduction was carried out by selecting data that matched the desired product specifications. The data was then presented in tabular form for clarity during analysis. Finally, conclusions were drawn from the data.

3. FINDINGS AND DISCUSSION

Analysis

At the analysis stage, the researcher identified needs related to the learning of Islam and Ethics in elementary schools. The results of the analysis show that the learning process is still dominated by conventional methods with the use of textbooks as the main source. This has an impact on the low active participation of students in discussions and class activities. In addition, it was also found that there are limitations in learning media that are able to stimulate students' communication skills, even though this skill is very important to form a critical, collaborative, and characterful attitude according to Islamic values. From the teacher's side, there are still obstacles in presenting material with a contextual approach that links religious teachings with real social issues in the environment around students.(Hermawan, 2019)(Agus Zaenul Fitri et al., 2020; Salahudin, 2024)

The analysis of students' needs also shows that they are more interested in learning media that are interactive and applicative, especially those that associate daily life with religious values. This condition shows the need to develop learning modules that not only present material in an informative manner, but are also able to present a learning experience based on (Aziz et al., 2024)*Socio Scientific Issues* (SSI). Therefore, the results of this analysis are an important basis in designing interactive modules that are

expected to be able to increase students' participation and communication skills in learning Islam and Ethics.

Analysis Aspect	Key Findings	Implications of Module Development
Learning Conditions	Learning is still predominantly conventional, teachers focus on textbooks.	Interactive media is needed to support a variety of strategies.
Student Participation	Low participation, students tend to be passive in class discussions and activities.	Modules must contain SSI-based activities that encourage student activity.
Communication Skills	Students are poorly trained to express opinions, arguments, and reflections.	Modules need to provide communication practice spaces, such as discussions, questions and answers, and presentations.
Teacher Needs	Teachers have difficulty relating the material to contextual issues around students.	The module must integrate socio-scientific issues relevant to Islamic values.
Student Interests	Students are more interested in digital media and interactive activities.	The modules are designed to be digitally interactive to suit students' learning styles.

Design

The design stage is carried out after obtaining an overview of needs through initial analysis. The results of the design stage show that the design . (Sadam Fajar Shodiq, 2023)*The Interactive Learning Module Based on Socio Scientific Issue (SSI)* is prepared by paying attention to the basic competencies of Islamic Religion and Ethics subjects, especially those related to strengthening moral values, worship, and social attitudes. The modules are designed in an interactive digital form to attract students' interest, while also being equipped with learning activities that require active student involvement through discussions, case studies, and reflection based on contextual socio-scientific issues.

The structure of the module includes introduction, material description, interactive activities, reflection, and learning evaluation. The learning design uses (Yulia & Suttrisno, 2024)*a student-centered learning approach* so that students are encouraged to explore Islamic values through the real issues around them, such as environmental cleanliness, tolerance, and social justice. In addition, modules are structured with a simple visual display, communicative language, and interactive features that support students' communication skills. The results of this design then became the basis for the product development stage which was subsequently validated by experts.(Garzón et al., 2020)

Table 2. Results of the Design Stage of SSI-Based Interactive Learning Modules

Design Components	Design Results	Purpose/Implications
Learning Objectives	Adjusted to the Basic Competencies of PAI & Ethics and focuses on strengthening morals.	Direct learning activities to be relevant to curriculum achievements.
Structure Module	It consists of an introduction, material description, interactive activities, reflection, and evaluation.	Provide a systematic and easy-to-understand learning flow for students.
Pendekatan	*Student Centered Learning* with the integration of social-scientific issues (SSI).	Encourage students to be active, think critically, and be able to relate knowledge to reality.

Content/Materials	Islamic values are combined with contextual issues (e.g., cleanliness, tolerance, social justice).	Develop reflective thinking skills and Islamic character.
Interactive Activities	Class discussions, case studies, Q&A, digital quizzes, and communication exercises.	Practice student communication, collaboration, and participation skills.
Language	Using communicative and simple language, according to the age of elementary school students.	Helps understand the material without linguistic barriers.
Visual Display	Attractive design with illustrations, simple colors, and interactive navigation.	Attract students' interest in learning and make it easier to use modules.

Development

The development stage is carried out by realizing the module design into an SSI-based interactive learning product. The module is designed in digital form that contains text, images, illustrations, and interactive activities according to a pre-arranged structure. At this stage, the modules are validated by experts to ensure the quality of the media, language, and suitability of the learning content. Validation is carried out by three categories of experts, namely media experts, linguists, and learning experts. The validation results showed that the module was included in the (Suryanti et al., 2021) very feasible category with a percentage of media expert eligibility of 98%, linguist 97%, and learning expert 95%. The assessment of these experts confirms that the modules developed have met the aspects of appearance, readability, and relevance to the learning objectives of Islam and Ethics. These findings are the basis for continuing the implementation stage in the classroom trial.

Aspects Assessed	Validator	Validation Results	Category	Implications
Media/Display	Media Member	98%	Highly Worth It	Interactive display, interesting illustrations, easy navigation to use.
Language/Linguistics	Linguist	97%	Highly Worth It	Language is communicative, simple, and according to the level of development of elementary school students.
Learning Content	Learning Expert	95%	Highly Worth It	Materials are curriculum-appropriate, relevant to SSI, and support 21st century skills.

Implementation

The implementation stage was carried out by piloting *the Socio Scientific Issue (SSI) Based Interactive Learning Module* in Islamic Religion and Ethics learning in elementary schools. The modules are used by teachers and students in learning activities to determine their effectiveness on student participation and communication skills. The results of the implementation show a significant increase compared to conventional learning. Students seem to be more active in discussions, able to express opinions with confidence, and more responsive to socio-scientific issues associated with Islamic values.(Carroll et al., 2024)

Quantitatively, the results of observations and surveys show that student participation increased by 85% compared to ordinary learning. In addition, students' communication skills also increased by 92%, which was shown through their ability to dialogue, ask questions, answer, and give arguments in

sequence. This improvement shows that SSI-based interactive modules are effective in creating an active, communicative, and contextual learning atmosphere.

Observed Aspects	Early Conditions (Conventional Learning)	After the Implementation of the Module	Improvement	Implications
Student Participation	Low, only some students are active.	High, almost all students are actively involved.	+85%	Modules encourage students to participate in discussions, questions and answers, and class activities.
Communication Skills	Limited, students find it difficult to express opinions and arguments.	Increasingly, students are more fluent in dialogue, questions, and reflections.	+92%	The module trains students to develop effective communication skills based on social context and Islamic values.

Evaluation

The evaluation stage was carried out to assess the success of the development and implementation *of the Socio Scientific Issue (SSI) Based Interactive Learning Module* as a whole. Evaluation is carried out in two forms, namely formative and **summative**. Formative evaluations are carried out at each stage of development, including revisions based on input from media experts, linguists, and learning experts. This revision aims to improve the appearance of the module, improve the language to be more communicative, and adapt the material to the learning needs of PAI and Ethics in elementary schools.(Dusturi et al., 2024)

Meanwhile, summative evaluation is carried out after classroom implementation to assess the effectiveness of the module on improving student participation and communication skills. The results of the summative evaluation showed that the module succeeded in creating a more interactive and contextual learning atmosphere. Quantitative data showed that student participation increased by 85% and communication skills increased by 92%. These findings reinforce the conclusion that SSI-based interactive modules are feasible to be used as innovative learning media and can be integrated in PAI and Ethics learning at the elementary level.

Table 5. Results of the Evaluation Stage of SSI-Based Interactive Learning Modules

Types of Evaluation	Assessment Focus	Results	Implications
Formative Evaluation	Revisions from media, language, and learning experts.	The module is improved on the visual aspect, the language is more communicative, and the material is more according to the needs of the students.	Modules become more feasible, engaging, and easy for students to understand.
Summative Evaluation	The effectiveness of the module on student participation and communication.	Student participation increased by 85% and communication skills increased by 92%.	The module has been proven to be effective in improving the quality of PAI learning & Ethics.

The results of the research on the development *of Socio Scientific Issue (SSI) Based Interactive Learning Modules* in the subject of Islam and Ethics show that the products developed meet the criteria that are very feasible to use. The validation process carried out by three experts gave the following results: media experts gave a feasibility score of 98%, linguists 97%, and learning experts 95%. This percentage indicates that SSI-based interactive modules are included in the category *of very feasible* in terms of appearance, language, and suitability of materials and learning strategies.

In addition, the results of the implementation trial in the elementary classroom showed a significant increase in student involvement. Compared to conventional learning, student participation increased by 85%, showing that the use of modules was able to attract interest in learning while encouraging active involvement in the learning process. Not only that, students' communication skills have also experienced a fairly high development, namely with an increase of 92%. This proves that SSI-based interactive learning not only helps students understand Islamic Religion and Ethics material more deeply, but also trains 21st century skills such as critical thinking, communication, and collaboration.

Thus, the results of this study confirm that the SSI-based interactive learning module developed is suitable for use as an innovative medium to improve the quality of learning about Islam and Ethics at the elementary school level.

Discussion

This research aims to develop a Socio-Scientific Issue (SSI) class V science learning module that is integrated with Islamic values, as well as test its feasibility and effectiveness in improving concept understanding, critical thinking skills, and strengthening students' spiritual character. Based on the stages of development of the ADDIE model, especially in the analysis, design, development, implementation, and evaluation phases, a number of important findings were identified that showed the success and contribution of the module to the practice of science education in Islamic madrasas/elementary schools

1. Integration of SSI and Islamic Values Enriches the Learning Context

SSI-based learning brings challenging and complex real-world contexts into the classroom. In this module, issues such as environmental pollution, climate change, and ecosystem damage are used as teaching materials that are directly connected to the topic "Bumiku Sayang, Bumiku Malang". When these issues are integrated with Islamic values, such as the mandate to protect the earth (QS. Ar-Rum: 41), the prohibition of destroying the environment, and the concept of human beings as caliphs, students not only learn the cognitive aspect, but also form an understanding of social values and responsibilities. These findings are in line with the results of research by Sadler (2020) and Zeidler (2021) which emphasized that SSI-based learning encourages moral reasoning and reflective thinking. In the context of Islamic education, learning that combines science and religious values encourages the creation of knowledgeable and moral students.

2. Increased Student Engagement and Critical Thinking

The implementation of the module showed a significant increase in students' active participation, courage in discussion, and critical thinking skills. Students not only memorize the definition of pollution, but are able to analyze its causes, evaluate their impacts, and offer solutions from a scientific and moral point of view. This shows the success of SSI's approach in developing scientific literacy that includes the dimensions of knowledge, thought processes, and value awareness. These findings are reinforced by a study by Dawson & Venville (2019), which states that SSI encourages students to study science in depth because they are faced with real dilemmas that demand cross-faceted understanding. The advantages of this approach can be seen in the student argumentation process during group discussions, mini-debates, and when compiling personal reflections related to environmental issues in the module.

3. Strengthening Islamic Character and Environmental Awareness

This module also makes a significant contribution to strengthening students' Islamic character. Reflection on the verses of the Qur'an and hadith presented in the module is not dogmatic, but is transformed in the form of concrete actions, such as a commitment to maintain cleanliness, plant trees, or not littering. With this approach, Islamic values do not only become memorization, but also living values that are manifested in daily behavior. A similar study by Isnawati et al. (2022) in the journal JPII shows that integrating character education in the context of science has a positive effect on students' ethical awareness and decision-making. This module reinforces the idea that science education is not solely rational, but also ethical and spiritual, particularly in the context of madrasas.

4. Transformation of IPAS Materials from Conventional to Contextual-Progressive

Comparisons between pre- and post-development modules show a significant transformation from learning that was originally informative and one-way to contextual, participatory, and reflective learning. IPAS material, which previously only contained facts and definitions, is now packed with real-life scenarios, spark questions, value reflections, and simple project activities. This shows that SSI's approach not only improves the quality of content, but also changes the learning paradigm to be more meaningful and humanistic. This is what deep learning is all about, where students not only "learn science" but also "learn to be human".

The development of interactive learning modules based on Socio Scientific Issue (SSI) in Islamic Religious Education and Ethics learning is based on the need for contextual and meaningful learning for elementary school students. The results of the needs analysis show that PAI learning still tends to focus on the delivery of normative material, so that students do not have the opportunity to relate religious values to the social reality around them (Suryadi, 2015; Suryadi S., 2017).

The SSI approach was chosen because it provides space for students to understand social issues through the perspective of values and knowledge. This approach emphasizes students' active involvement in value-based discussions and decision-making, which is relevant to the goals of character education in PAI (Owens et al., 2024). In the context of elementary school, the SSI approach needs to be tailored to the student's level of cognitive development to remain easy to understand.

The results of the module design show that the learning structure based on social issues is able to increase the integration between religious materials and ethical values. The presentation of social issues that are close to students' lives facilitates the process of internalizing religious and social values (Anwar, 2017, 2018). This is in line with the view that contextual learning is able to increase the meaning of student learning (A. Sanjaya, 2022; W. Sanjaya, 2008).

Expert validation shows that the developed modules have a content fit with PAI learning competencies in elementary school. Subject matter experts consider that the integration of religious values and social issues has been systematically arranged and does not deviate from the learning objectives (Andriani & Ramadani, 2022; Widiara, 2020). These findings reinforce the importance of validation in teaching material development research.

From the language aspect, the module is considered quite communicative but still needs simplification in some parts. This corroborates previous findings that the language in elementary school teaching materials must be adjusted to students' initial literacy skills (Rahma et al., 2022; Rahmawati et al., 2023). Language revision is one of the main focuses in improving the module.

Field trials showed that students were more enthusiastic about learning using SSI-based modules than conventional learning. Social issue discussion activities encourage students to dare to express their opinions and listen to the views of their peers. These findings are in line with the results of research by Sadler et al. (2021) which stated that issue-based learning increases student participation.

In terms of material understanding, students are able to relate religious teachings to examples of behavior in daily life. This shows that the SSI approach helps students understand religious values in an applicative way, not just memorizing concepts (Zubaedi, n.d.). This contextual understanding is important in PAI learning at the elementary level (Anwar & Mubin, 2022; Dacholfany, 2017).

Teachers responded positively to the module because it helped facilitate learning management and enriched the variety of teaching methods. The module is considered to support more dialogical and reflective learning, in accordance with the demands of 21st century learning (Ghasemi et al., 2025; Widyastuti et al., n.d.; Yulia & Suttrisno, 2022). This shows that the modules are not only beneficial for students, but also for teachers.

The integration of ethical values in the module is carried out through reflection and discussion activities. This activity encourages students to assess attitudes and behaviors that are in accordance with Islamic teachings. This approach is in line with the concept of character education which emphasizes the habituation of values through learning experiences (Hager & Sharma, 2023; Maciej Serda et al., 2013).

The results of the study also show that the SSI approach can be a means to instill the value of tolerance and social care from an early age. The social issues raised in the module help students understand diversity and the importance of living in harmony (UNESCO, 2020). This is relevant to the learning objectives of PAI and Ethics.

Module revisions are carried out based on the results of field trials, especially in the flow of discussions and student activity guides. This revision aims to allow students to participate in discussions in a more targeted manner and in accordance with their thinking skills. This revision process is an important part of development research (Arikunto, n.d.; Hari, 2022; Sugiyono, 2020)

After revision, the module is considered more systematic and easy to use. A clear learning structure helps students understand the stages of learning, from the introduction of issues to reflection on values. These findings support the view that structured modules increase learning effectiveness (Ihsan & Pahmi, 2022).

From a learning theory perspective, the use of SSI-based interactive modules supports constructivistic learning. Students build their understanding through discussion and reflection on social issues, not just passively receiving information (Tarma & Oktaviani, 2019). This is in accordance with the characteristics of student-centered learning. The SSI approach also contributes to the development of simple critical thinking skills in elementary school students. Discussion of social issues trains students to consider various points of view before drawing conclusions (Abrami et al., 2008; Yang et al., 2025). These skills are important to develop from primary education.

The results of this study are consistent with the findings of previous research which stated that social issue-based learning is effective in integrating values and knowledge (Khan et al., 2024; Nurcahyani et al., 2021)In the context of PAI, this integration helps students understand religious teachings more holistically. The modules developed also support national education policies that emphasize character strengthening and contextual learning. The integration of religious and social values in the module is in line with the policy direction of the elementary school curriculum.

From an implementation aspect, this module is relatively easy to implement in classes with limited resources. Teachers can use modules as main teaching materials or companions, according to learning conditions at school. This shows the flexibility of modules as a learning resource (Hidayati & Astuti, 2020). However, this study has limitations in the scope of the trial which is still limited to one school context. Therefore, further research with a wider range of subjects is needed to test the effectiveness of the modules more comprehensively (Miles, 2020).

The practical implication of this study is the availability of innovative and contextual alternative PAI teaching materials. SSI-based modules can be a reference for teachers in developing learning that is more meaningful and relevant to students' lives. Theoretically, this study strengthens the study of the application of the SSI approach outside of science learning. These findings suggest that SSI is also relevant for religious learning and character education in primary schools .

Thus, this discussion emphasizes that Socio Scientific Issue-based interactive learning modules have great potential in supporting the learning of Islamic Religious Education and Ethics that are contextual, reflective, and oriented towards the formation of students' character.

4. CONCLUSION

This study concludes that the development of the Grade V Integrated Science and Social Studies (IPAS) learning module based on the Socio-Scientific Issue (SSI) approach integrated with Islamic values in the chapter "Bumiku Sayang, Bumiku Malang" makes a significant contribution to creating contextual, meaningful, and empowering learning experiences both cognitively and affectively. The developed module successfully connects environmental issues with students' daily lives and relevant Islamic values, such as responsibility toward nature, social empathy, and awareness of human stewardship (khalifah fil ardh) on earth. Through the development process using the ADDIE model, the module proved to be valid in terms of content and design, and effectively enhanced students' active engagement, critical thinking skills, and understanding of Islamic values within a scientific context. The findings indicate that the integration of SSI and Islamic values not only strengthens the scientific dimension of IPAS learning but also supports the formation of students' character and moral sensitivity in responding to global issues. Therefore, this module has the potential to serve as an innovative learning resource that aligns with the objectives of the Kurikulum Merdeka and embodies the vision of Islamic education grounded in spiritual and ethical valuesAcknowledgment

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