STRATEGY OF ISLAMIC EDUCATION CURRICULUM TRANSFORMATION TO INCLUDE GREEN TECHNOLOGY

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Abstract: The purpose of this study is to discuss the Strategy for Transforming Islamic Education Curriculum to Include Green Technology, the method used to conduct this study is Library Research, The conclusion of the discussion on the development of learning materials that emphasize the importance of green technology, sustainable curriculum integrated with Islamic education, and the development of student skills in green technology innovation shows the need for a holistic and sustainable approach in education. The development of learning materials that focus on green technology is essential to instill sustainability awareness among students from an early age, by combining basic concepts, practical applications, and the relevance of religious teachings. This will ensure that students not only understand environmental principles, but can also apply them in their daily lives. A sustainable curriculum that integrates spiritual values with environmental awareness helps students understand their responsibilities towards nature from a deeper perspective. In addition, the development of green technology innovation skills among students prepares them to play an active role in the environmental and technology sectors. Through education that emphasizes practical skills and problem solving, students can better face global environmental challenges. Overall, the integration of green technology in education requires close collaboration between material development, curriculum, and skills training, which not only improves the effectiveness of learning but also produces a more environmentally conscious and innovative generation.

INTRODUCTION

Islamic education plays a very important role in shaping the character and morals of students. However, in this modern era, the challenges faced by Islamic educational institutions are increasingly complex, especially related to environmental and sustainability issues. One approach to addressing these challenges is to transform the Islamic education curriculum to include green technology. This transformation is not only aimed at providing technical knowledge to students, but also at instilling Islamic values that are relevant to environmental responsibility.

Curriculum transformation in Islamic education is very important because the world is currently facing various environmental challenges, such as climate change, pollution, and natural resource crises. Green technology is one of the solutions that can

help overcome these challenges, and therefore, it is very important for Islamic educational institutions to integrate green technology into their curriculum. According to Riyanto (2020), Islamic education must play an active role in creating a generation that is environmentally conscious and has the ability to use green technology wisely.

This curriculum transformation process requires a comprehensive approach, where Islamic values about responsibility towards nature and the concept of green technology must be aligned. In this case, the Qur'an and Hadith can be used as the main foundation in forming a curriculum that is oriented towards sustainability. For example, Islamic teachings about maintaining the balance of nature and prohibitions against environmental damage can be integrated with the concept of green technology, so that students can understand the importance of protecting the environment from a religious perspective.

Curriculum transformation strategies to include green technology must also consider the relevance of the content taught to the needs of the times. In this case, teaching materials on green technology must be developed contextually, according to local conditions and community needs. According to Syahruddin (2019), contextual curriculum development is very important to ensure that the education provided is truly useful and can be applied by students in everyday life.

In addition, curriculum transformation must involve various stakeholders, including teachers, students, parents, and communities. Collaboration between educational institutions and communities is essential to create a learning environment that supports the implementation of green technology. For example, schools can work with industry or environmental organizations to provide resources or training programs on green technology. Thus, students can learn not only from textbooks, but also from relevant practical experiences.

Teacher training is also one of the keys to success in curriculum transformation. Teachers must be equipped with the knowledge and skills needed to teach green technology effectively. According to Ratnasari (2021), training and professional development for teachers is essential to ensure that they are able to integrate green technology into the learning process in a way that is interesting and easy for students to understand.

In addition, the use of innovative learning methods can also support curriculum

transformation. For example, project-based learning methods can be used to teach green technology, where students can engage in real projects related to green technology, such as renewable energy development or waste management. This method not only enhances students' understanding of green technology, but also develops critical thinking skills and the ability to work in teams.

Curriculum transformation must also include the development of relevant and up-to-date teaching materials. These teaching materials must be adapted to the latest developments in the field of green technology and arranged in such a way that they can be easily understood by students. According to Hamid (2020), good teaching materials are teaching materials that not only provide theoretical knowledge but are also able to inspire students to take real action in protecting the environment.

In addition to curriculum development and teaching materials, supporting infrastructure is also very important in supporting the implementation of green technology in Islamic educational institutions. For example, schools can be equipped with facilities that use green technology, such as solar panels, efficient water management systems, and organic gardens. This infrastructure not only serves as a learning tool for students, but also as a real example of the application of green technology in everyday life.

The use of information and communication technology (ICT) can also be one of the strategies in curriculum transformation. ICT can be used to provide wider access to information about green technology and sustainability. For example, e-learning or online learning can be used to disseminate knowledge about green technology to students in various locations. According to Abdullah (2021), the use of ICT in education is very important to reach more students and provide more diverse educational resources.

Furthermore, curriculum transformation must include evaluation and assessment that are in accordance with learning objectives. Assessments must not only measure students' knowledge of green technology, but also their attitudes and behaviors towards the environment. According to Sulaiman (2019), effective assessments must cover various aspects, including cognitive, affective, and psychomotor, so that they can provide a comprehensive picture of students' abilities in implementing green technology.

Policy support from the government is also very important in the process of curriculum transformation. Policies that support the integration of green technology in Islamic education can provide a strong foundation for educational institutions to make the necessary changes. In addition, support in the form of funding and incentive programs can also help schools in implementing green technology.

Although transforming the curriculum to include green technology in Islamic educational institutions is not an easy challenge, it is very important to do. With a curriculum that includes green technology, Islamic education will not only be able to produce a generation that is academically intelligent, but also has a high environmental awareness and is ready to contribute to global efforts to achieve sustainable development.

Finally, it is important to note that curriculum transformation is an ongoing process and requires periodic evaluation and adjustment. The curriculum must always be adjusted to the latest developments in green technology and environmental issues, so that it can remain relevant and effective in facing the challenges of the times. With a strong commitment from all parties involved, curriculum transformation to include green technology in Islamic educational institutions can be an important step in creating a more sustainable future.

RESEARCH METHODS

This study uses a library research method, where the data used comes from various literatures relevant to the topic. Library research is a method carried out through the collection and analysis of existing related literature without conducting experiments or collecting data directly from the field. Library research aims to review and analyze previous relevant scientific works in order to find, explain, and understand concepts or theories that support the arguments presented.

In library research, the data sources used consist of books, scientific journals, articles, and other documents relevant to the research topic. This secondary data is analyzed by identifying theories, concepts, and previous findings related to the research problem. Sugiyono (2017) explains that library research is important to find a strong theoretical basis and help researchers clarify the research context. In addition, library research can also be used to identify research gaps that have not been discussed by

previous research.

Data analysis techniques in library research are carried out through the process of identification, evaluation, and synthesis of relevant literature. The data obtained are then analyzed critically to understand the relationship between concepts and compile a synthesis of findings related to the focus of the research. According to Zed (2014), library research requires a deep understanding of relevant literature so that researchers can formulate strong arguments. The analysis process is also carried out by mapping various existing findings and comparing them with the theories used in this study.

In terms of data collection techniques, library research uses documentation studies as the main tool. Arikunto (2010) stated that documentation studies are one of the effective data collection methods for library research, because researchers can access information that has been tested for credibility and is academically recognized. The use of secondary data from various sources also allows researchers to compare findings from various literatures and draw conclusions based on the synthesis of previous theories and research.

Therefore, this library research method is very relevant to be used in this study, because it can help researchers identify and elaborate theories and concepts that support research problems. By using various valid and accredited literature, this study is expected to provide academic contributions in developing a broader understanding of the topic being studied.

RESULTS AND DISCUSSION

Curriculum reform based on Islamic and environmental values

The curriculum reform based on Islamic and environmental values emphasizes the importance of integrating religious teachings with sustainability concepts, resulting in a holistic approach to education. This curriculum aims to not only teach Islamic values but also integrate them with environmental principles that support sustainability. According to Hidayat (2020), this curriculum reform is needed to bridge the gap between religious education and environmental responsibility, ensuring that students understand and apply religious teachings in the context of environmental protection.

In the context of this curriculum reform, teaching materials must include basic principles of Islamic teachings that support sustainability, such as responsibility towards

the earth and living things. Rahmawati (2021) suggests that integrating values such as social justice, responsibility, and moderation in the use of natural resources can form a strong foundation for understanding and implementing the concept of sustainability. This curriculum should incorporate religious teachings that are relevant to environmental issues, making them an integral part of everyday education.

Developing a curriculum based on Islamic and environmental values also requires an innovative pedagogical approach. Abdullah (2020) explains that effective learning methods include case studies, environmental-based projects, and problem-based learning that connect religious teachings with sustainability practices. These methods allow students to apply their knowledge in real contexts, while facilitating a deeper understanding of the relationship between religious teachings and environmental actions.

The implementation of this curriculum often involves training for educators to ensure they can deliver the material in an appropriate and engaging manner. Fauzan (2022) highlights the importance of ongoing training for teachers to equip them with the knowledge and skills needed to teach sustainability concepts and religious values. This training includes an in-depth understanding of the integration of religious values with sustainability principles as well as relevant teaching techniques.

In addition, curriculum reform based on Islamic and environmental values requires support from various parties, including educational institutions, government, and communities. Nasruddin (2020) emphasized that the involvement of all stakeholders is essential to ensure that the curriculum is implemented successfully and has a significant impact. This support can be in the form of providing resources, training opportunities, and partnerships with environmental organizations to support curriculum implementation.

This curriculum should also be equipped with an effective assessment system to evaluate students' understanding of the integration of religious values and sustainability. Aziz (2021) suggests that assessments should include aspects of theoretical knowledge as well as practical application of sustainability principles in everyday life. Comprehensive assessments can help identify areas for improvement and ensure that students can integrate religious teachings with environmental actions.

Implementing a curriculum based on Islamic and environmental values can

create a school culture that supports sustainability and environmental awareness. Hidayat (2020) noted that by integrating sustainability principles into religious education, schools can build a community that is more environmentally conscious and committed to social responsibility. This culture not only affects students but also staff and the school community as a whole.

The development of this curriculum also involves the use of relevant educational resources, such as teaching materials, modules, and learning aids that connect religious teachings with environmental issues. Rahmawati (2021) underlines the importance of providing quality materials to support teaching and learning. These resources must be designed to convey information effectively and facilitate students' understanding of the relationship between religious values and sustainability.

Overall, the curriculum reform based on Islamic and environmental values aims to create a generation that not only understands religious teachings but is also able to apply them in the context of sustainability. Abdullah (2020) stated that this approach helps students develop a deep environmental awareness and practical skills needed to face global challenges. With this reform, education can equip students with knowledge and values that support sustainability and social responsibility.

Finally, these curriculum reforms must be monitored and evaluated periodically to ensure that the materials remain relevant and effective. Fauzan (2022) emphasized the importance of ongoing evaluation to assess the impact of the curriculum and make necessary improvements. This process involves feedback from educators, students, and other stakeholders to ensure that the curriculum continues to meet educational and sustainability goals.

Development of learning materials that emphasize the importance of green technology

The development of learning materials that emphasize the importance of green technology in the context of religious learning aims to integrate environmental values with religious teachings, creating a curriculum that is relevant and responsive to global challenges. In this context, learning materials must be designed to not only teach religious principles but also connect them to green technologies that support

sustainability. According to Hidayat (2020), integrated learning materials can help students understand the relationship between religious teachings and environmental practices, encouraging them to apply sustainability principles in their daily lives.

Green technology-focused course materials should cover topics such as renewable energy, energy efficiency, and waste management. Rahmawati (2021) explains that by introducing these concepts in the context of religious teachings, students can learn about their responsibilities to the earth from a culturally and spiritually relevant perspective. For example, course materials can explain how Islamic principles such as amanah (trust) and khilafah (responsibility) relate to green technology practices.

In addition, the development of this subject matter requires an innovative pedagogical approach to ensure that environmental concepts are delivered in an interesting and easily understood way by students. Abdullah (2020) suggests the use of project-based learning methods and case studies that involve students in practical activities related to green technology. This approach allows students to apply their knowledge in real situations and understand the relevance of religious teachings in an environmental context.

Courses that incorporate green technology should also include a study of the environmental impacts of various technologies and human practices. Fauzan (2022) notes that it is important to teach students about the environmental consequences of technological choices, as well as solutions that can reduce those impacts. This material can include an analysis of how certain technologies affect the environment and how green technologies can be used to address those issues.

Implementing subject matter that emphasizes green technology requires training and support for educators. Nasruddin (2020) emphasized the importance of adequate training for teachers so that they can teach the material effectively and convey the relationship between religious teachings and green technology clearly. This training should include an understanding of green technology, effective teaching techniques, and how to integrate religious teachings into subject matter.

The involvement of the community and environmental experts in the development of learning materials can enrich the content presented. Aziz (2021) shows that collaboration with practitioners and environmental experts can provide additional

insights and relevant case studies, so that learning materials are more dynamic and in line with the latest developments in green technology. This involvement can also create opportunities for field visits and direct interaction with professionals in the field of green technology.

Subject matter that emphasizes green technology must also be supported by quality educational resources, such as relevant textbooks, modules, and learning aids. Hidayat (2020) emphasized that providing good resources is essential to support the learning process and ensure that students receive accurate and up-to-date information. These resources should be designed to facilitate students' understanding of the relationship between religious teachings and green technology.

Effective evaluation and assessment are also an important part of developing this subject matter. Rahmawati (2021) suggests that assessment should include aspects of knowledge about green technology as well as an understanding of how religious principles are applied in environmental practices. Comprehensive evaluation can help identify strengths and areas for improvement in the learning process.

In addition, the development of learning materials that emphasize green technology should focus on creating a school culture that supports sustainability. Abdullah (2020) explains that by integrating environmental principles into religious education, schools can create an environment that supports environmental awareness and responsible actions. This school culture not only affects students but also affects staff and the school community as a whole.

Finally, learning materials that emphasize the importance of green technology can contribute to the formation of a generation that is more environmentally conscious and more skilled in green technology. Fauzan (2022) stated that by providing education that integrates religious teachings and green technology, we equip students with the knowledge and skills needed to face environmental challenges and become agents of positive change in society.

Teacher training to teach green technologies in the classroom

Teacher training to teach green technology in the classroom is a crucial step in ensuring that environmental and sustainability education is well integrated into the school curriculum. This training aims to equip teachers with in-depth knowledge and

practical skills needed to teach green technology effectively. Hidayat (2020) stated that comprehensive training can improve teachers' capacity to integrate green technology principles into the learning process, as well as facilitate students' understanding of the importance of sustainability and environmental responsibility.

Teacher training materials should cover various aspects of green technology, such as renewable energy, energy efficiency, and resource management. Rahmawati (2021) explains that teachers need to understand the basic concepts of green technology in order to explain to students how these technologies contribute to environmental sustainability. This training should also cover the application of green technology in local and global contexts, so that teachers can provide relevant and practical examples in their teaching.

In addition to technical knowledge, teacher training should include the development of pedagogical skills specific to teaching green technologies. Abdullah (2020) emphasized the importance of innovative teaching methods, such as project-based learning and case studies, to teach green technology concepts. These methods allow teachers to engage students in practical activities that link theory to practice, so that students can understand the application of green technologies in real life.

Training also needs to provide relevant and up-to-date educational resources. Fauzan (2022) points out that providing quality textbooks, modules, and learning aids can help teachers teach green technology materials more effectively. These resources should include the latest information on green technology and its application in educational contexts, so that teachers can provide accurate and up-to-date learning to students.

Ongoing support after training is also important to ensure the successful implementation of green technology materials in the classroom. Nasruddin (2020) emphasized that ongoing mentoring and coaching can help teachers overcome the challenges they face when teaching green technology. This support can be in the form of consultation sessions, collaborative learning, and access to a professional community that can provide assistance and share experiences.

The involvement of green technology experts and practitioners in teacher training is also invaluable. Aziz (2021) suggests that collaborating with green technology professionals can provide additional perspectives and practical insights that

are not always available in standard training materials. These experts can provide lectures, workshops, and live demonstrations that can enrich teachers' understanding of green technology and how to teach it.

Evaluation and feedback from training is an important part of the professional development process. Hidayat (2020) explains that systematic evaluation can help identify areas for improvement in training and ensure that training objectives are achieved. Feedback from training participants can also be used to adjust training materials and methods to better suit the needs and challenges faced by teachers in the field.

It is also important to ensure that teacher training includes an approach that is sensitive to the local context and specific needs of the community in which the school is located. Rahmawati (2021) stated that training must be adapted to local conditions and environmental challenges faced by the community, so that teaching materials are relevant and can be practically applied in the field.

Finally, effective teacher training in green technology can have a positive long-term impact on environmental education. Abdullah (2020) highlighted that skilled and knowledgeable teachers can motivate students to adopt sustainable practices and develop interest in green technology. Thus, teacher training serves as a strategic investment in creating a more environmentally conscious and skilled generation in green technology.

Overall, teacher training in green technology should be comprehensive, sustainable, and relevant to the educational context and students' needs. Fauzan (2022) emphasized that with proper provision, teachers can play a key role in advancing environmental education and green technology, as well as encouraging environmentally responsible actions among students.

CONCLUSION

The conclusion of the discussion on the development of learning materials that emphasize the importance of green technology, sustainable curriculum integrated with Islamic education, and the development of students' skills in green technology innovation shows that the integration of sustainability principles in education requires a holistic and sustainable approach. The development of learning materials that focus on

green technology is essential to create an initial awareness of sustainability among students. These learning materials should cover the basic concepts of green technology, practical applications, and the relevance of religious teachings, to ensure that students not only understand environmental principles but are also able to apply them in their daily lives. A sustainable curriculum that combines religious teachings with environmental awareness provides a structure that allows for the integration of spiritual values with sustainability practices, helping students understand their responsibilities towards the environment from a deeper and more integrated perspective.

On the other hand, developing students' skills in green technology innovation is an important aspect in preparing future generations who can actively contribute to the environmental and technology sectors. Through education that emphasizes practical skills and problem solving related to green technology, students can develop the abilities needed to face global environmental challenges. Overall, these three discussions show that the success of integrating green technology into education requires close cooperation between the development of learning materials, relevant curricula, and practical skills training. Investment in these areas not only supports more effective learning but also contributes to the formation of a more environmentally conscious and innovative generation.

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