Global Education Development Plan to Build Sustainable Education Based on Artificial Intelligence

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ABSTRACT: Global education is an important aspect in preparing a generation ready to face the challenges of the future. In an effort to develop sustainable education, the use of artificial intelligence is one of the interesting potentials to consider. The research aims to explain the design of global education development aimed at developing AI-based sustainable education through library studies. The study uses a library study method by collecting, analysing, and synthesizing research, scientific articles, reports, and other relevant literary sources. The research focuses on three important aspects in the design of AI-based global sustainable education development, namely, learning personalization, adaptive curriculum development, and student progress assessment and monitoring. The library study results show that the use of AI in education can enable more effective learning personalization. With AI, learning materials can be tailored to individual student needs and preferences, enhancing their engagement and understanding. Furthermore, AI-supported adaptative curricular development allows learning experiences that are adapted to student development and capabilities. Student progress evaluation and surveillance can also be enhanced through the application of AI. This technology can provide more objective and comprehensive assessment of student progress, helping teachers to provide more timely feedback and support better decision-making in learning planning. While the potential for the use of AI in sustainable global education is promising, there are challenges and consequences to bear in mind. Ethical aspects, student data privacy, and fairness in access and use of AI technology should be key concerns in designing sustainable global education development. The study provides insight into the design of AI-based sustainable global education development through library studies. These findings could provide a basis for further research and provide practical guidance to stakeholders in adopting and implementing AI technologies responsibly to develop sustainable education at a global level.

Keywords: global education, artificial intelligence, learning personalization, adaptive curriculum, student assessment

I. INTRODUCTION

Global education has been a major concern in the face of rapid social, economic, and technological change in the era of globalization. The development of sustainable education is an objective pursued by many countries to ensure that education can keep pace with development and provide long-term benefits to individuals and societies. Faced with these challenges, the use of artificial intelligence has emerged as a promising potential in

developing sustainable education globally. AI has the ability to analyze big data, recognize patterns, and provide adaptive solutions, which can optimize learning processes and generate more effective educational experiences. The UNESCO report on "Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development" provides a broad overview of the use of AI in education, identifies related challenges, such as ethics and privacy, and presents opportunities to develop sustainable education [1]. Further, the library study also included research that tested the presence of online instructors in virtual learning environments [2].

The study includes a number of sources relevant to the topic "The Design of Global Education Development in the Aim of Developing Sustainable Education Based on Artificial Intelligence". One of the sources reviewed is an article entitled "Challenges and future directions of big data and artificial intelligence in education". This article discusses the application of AI in education and provides an overview of how this technology called artificial intelligence can improve student learning experiences and academic outcomes. This research includes a variety of case studies and examples of the use of AI in curriculum development, learning personalization, and student evaluation [3].

This study also refers to the context of multimedia-based learning design. They identified multimedia design principles, such as principles of cohesion, marking, redundancy reduction, spatial unity and temporal unity, which can help reduce irrelevant information processing and improve student understanding[4]. The report provides information on trends and technologies that are expected to have a significant impact on higher education, including artificial intelligence and sustainable education. This report provides insight into the implementation of AI in the context of education and provides an overview of the opportunities and challenges associated [5].

The aim of this study is to explain the design of global education development aimed at developing sustainable education based on AI. The research uses a library study approach by collecting and analyzing various relevant literary sources. This study will highlight three important aspects in the design of AI-based global sustainable education development, namely, learning personalization, adaptive curriculum development, and student progress assessment and monitoring.

Learning personalization involves the use of AI to provide learning materials tailored to the individual needs and preferences of students. Thus, each student can learn in their own rhythm, gain deeper understanding, and increase their motivation in the learning process. Developing an adaptative curricular based on AI is also important in delivering relevant and relevant learning experiences to students' development. Curricula can be automatically adapted based on students' progress, needs, and interests, which enhances their learning engagement and outcomes.

Student progress evaluation and surveillance can be enhanced through the implementation of AI. AI can provide more objective and comprehensive assessment, provide timely feedback to students and teachers, and support better decision-making in learning planning. However, with its potential and benefits, the use of AI in sustainable global education also brings challenges and consequences. Ethical aspects, student data privacy, and fairness in access and use of AI technology must be taken into account in the design of sustainable education development. Statistics on the use of AI in learning in the world compiled from several sources indicate that:

1. Increased use of artificial intelligence in education: a. By 2018, about 47% of educational institutions worldwide have adopted AI technology in learning. b. By 2020, the figure has risen to more than 60%, indicating a significant growth in the usage of artificial Intelligence in Education [6].

2. Applications of artificial intelligence in learning: a) More than 70% of schools and colleges report using adaptive learning systems based on AI to help students understand difficult concepts. b) Approximately 50% of education institutions use an AI chatbot to assist students in answering their questions [7].

3. Increased efficiency with AI: a). A survey in 2021 showed that about 80% of teachers felt improved efficiency in student assessment and feedback thanks to the use of AI tools. b). Approximately 60% of schools using AI in managing school administration such as scheduling, data management, and student presence [8].

4. Learning Content Development: More than 40% of educational institutions have used AI to develop more interactive and exciting learning content, such as simulations and game-based content [9].

5. Teacher training with AI: About 30% of education institutions has adopted an AI-based training system to help teachers improve teaching skills and plan learning more effectively [10].

6. Positive impact on Learning: Over 70% of students report that the use of AI technology in learning has increased their interest in learning and helped them understand the material better [11].

The study identifies three aspects of instructor presence, namely cognitive, social, and teaching presence. The study discusses the importance of the presence of instructors in creating effective learning experiences and influencing student motivation and participation. Through this research, it is expected to provide insights into the design of AI-based sustainable global education development, which can serve as a basis for further research and provide practical guidance to stakeholders in adopting and implementing AI technologies responsibly to develop sustainable education at a global level.

II. METHODS AND MATERIALS

The research method used in this research is the study of literature reviews. Library studies are research approaches that involve the collection, selection, analysis, and synthesis of literary sources relevant to the research topic.
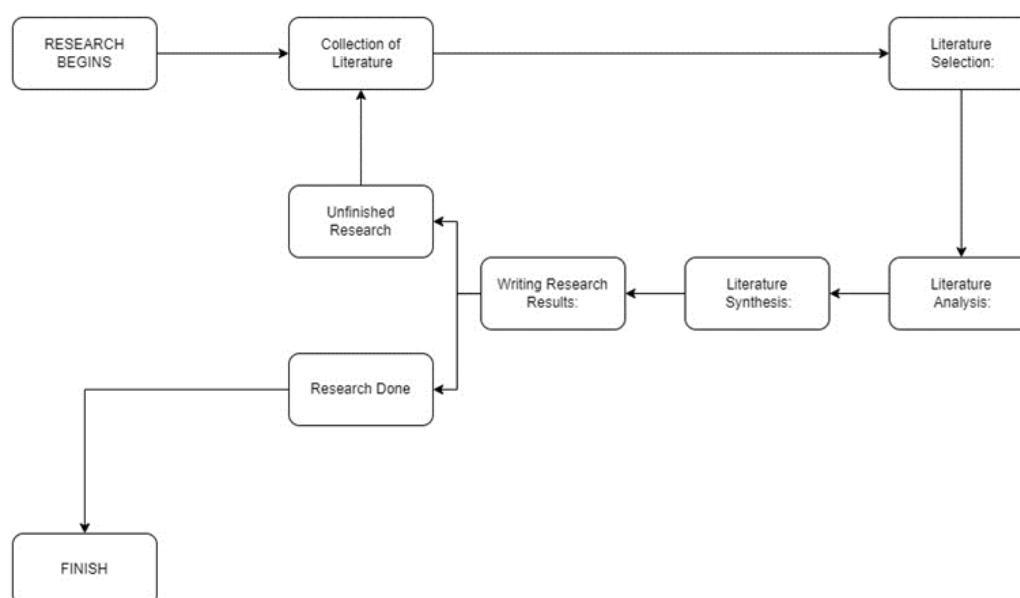

FIGURE 1. The systematic literature review flowchart

The steps followed in the above method of library study can be described as follows:

Collection of literature: The first step is to identify and gather literature sources relevant to the research topic. Literary sources can be scientific journal articles, books, research reports, or other sources that can provide the necessary insights and information. At such steps, researchers will identify and gather literary sources related to the design of sustainable global educational development using artificial intelligence (AI) as a primary focus. Literary resources that can be explored include scientific journals articles that discuss the use of AI in global education, books that review aspects of sustainability education design, research report related to developing adaptive AI-based curricula, as well as other resources that provide insights into the use by AI in sustainable education. By conducting relevant literature collections, researchers can acquire a comprehensive understanding of research topics, identify current trends and findings, as well as analyze various relevant approaches and conceptual frameworks in the design of AI-based sustainable global

education development. Thus, literature gathering steps in library study methods will support this research to build a solid theoretical foundation and complete information on the subject being studied.

Literature selection: After the collection is done, the collected literature will be filtered and selected based on previously defined criteria. These selection criteria may include relevance to the research topic, the quality of the research methodology, and the up-to-date information presented. After a literature collection involving scientific journal articles, books, research reports, and other relevant sources, researchers will carry out the literature selection process. This process involves filtering and selecting literature sources based on previously defined criteria. In the context of this research, the selection criteria can include several factors, such as direct relevance to the research topic, namely, the design of a global sustainable education based on artificial intelligence (AI), the quality of the research methodology used in literature, and the up-to-date information presented in such literature resources. By choosing relevant, qualified, and with sufficient update, the researchers can ensure that their research is supported by valid and reliable sources. Furthermore, the right selection of literature will also help build a solid theoretical foundation and provide a comprehensive understanding of research topics related to the design and development of a sustainable global education based upon AI.

Literature analysis: After the literature is selected, the next step is to analyze the contents of each literature. This analysis can include an understanding and interpretation of the arguments, findings, research methods, and conclusions presented in literatures. After a selection of relevant literature, the researcher will analyse the content of each of them. Literary analysis can involve an in-depth understanding of the argument, finding, method of research, and the conclusion presented within such literature. In the context of this research, literature analysis will help researchers to understand the various approaches, concepts, and theories associated with the design of AI-based global sustainable education development. Researchers will analyze the arguments and findings presented in literature to gain a comprehensive understanding of the approaches that have been taken in developing sustainable learning using AI technology. In addition, literary analysis will also help researcher in identifying the weaknesses, limitations, and research opportunities associated to AI-driven global sustainability education development design. The researchers will consider the research methods used in literatures to evaluate the quality and validity of the information presented. Through a thorough analysis of literature, researchers can build a deep understanding of concepts, theories, and practices related to the design of AI-based sustainable global education development. This will support the formation of a strong theoretical foundation for research and provide a solid basis for developing appropriate design approaches in the development of global sustainable education using AI technology.

Literature synthesis: After the analysis is done, the literature that has been analyzed will be synthesized. This synthesis involves merging the relevant findings of each literature and forming a coherent conceptual framework to support the arguments and purposes of the research. After conducting the analysis of literature, the researcher will synthesize the information and findings found from every literature that has been analyzed. In the context of this research, the synthesis of literature will help researchers to understand the common patterns, trends, and emerging principles of the literature related to the design of sustainable global education development based on artificial intelligence (AI). The researchers will integrate relevant findings, possibly also compare and contrast information from various literatures to build a richer understanding and build a solid conceptual framework.

Synthesis of literature will also support the formation of stronger research arguments and objectives. By combining findings from different literature, researchers can build a solid theoretical foundation and present a supportive conceptual framework to develop an effective AI-based global sustainable education development design. By doing a good synthesis of literature, researchers can produce a more comprehensive, informed, and evidence-based explanation of their research. This will strengthen the authenticity of research and provide a solid basis for developing relevant recommendations and practical implications in the design of AI-based sustainable global education development.

Writing Research Results: After the analysis and synthetic process is completed, the final step is to write the results of research in the form of a journal or research report in accordance with the structure and format that has been defined. This writing will cover conclusions, key findings, and implications of the research that has been done. In the context of this research, the writing will involve a narrative presentation of the design of sustainable global education development based on artificial intelligence (AI) based on the analysis and synthesis of literature done. The researchers will present the conceptual framework that has been drawn up, the key findings that have been identified, as well as the practical and theoretical implications of the research. The writing will also cover discussions on research constraints, suggestions for further research, and the importance of this research in the context of sustainable global education development. In addition, references from the literature used in the research will also be included in the list of libraries corresponding to the copy format.

III. FINDINGS AND DISCUSSION
1. GLOBAL EDUCATIONAL DEVELOPMENT

From some of the opinions and reports above generally formulated by Kahn, that global education is a concept that encompasses education that transcends geographical, cultural, and national boundaries. Global education is not just about giving academic knowledge and skills, but also about forming a deep understanding of the complexity of an increasingly interconnected and interdependent world [12]. Global education involves understanding global issues such as peace, sustainability, human rights, as well as appreciation of cultural diversity and thinking. It involves learning about universal values such as tolerance, empathy, and openness to different perspectives. Current types and developments of global education include:

- Intercultural Education: This education aims to enhance intercultural understanding and overcome stereotypes and prejudices. It involves student exchanges, training programmes for teachers, and the development of curricula that integrate a global perspective.
- Sustainable Education: Global Education also involves developing the skills and knowledge needed to face global challenges, such as climate change, inequality, and poverty. It includes environmental education, social entrepreneurship, and understanding of social issues.
- Sustaining Education: global education also focuses on environmental sustainability and the use of natural resources wisely. This involves teaching about renewable energy, waste management, and sustainable practices.

In addition, the nature of Global Education covers the aspects of education, namely: 1. Universality: Global education covers universal values such as human rights, peace, and critical skills relevant throughout the world. 2. Connectivity: global education recognizes the interrelationship between individuals, societies, and the global environment. It promotes an understanding of the local impact on the global scale. 3. Diversity: The global education appreciates the diversity of cultures, languages, and world views. It helps build a deeper understanding of human complexity [19,20].

Global Education Development includes education that is directly linked to a society that wants to change education, such as: 1. Technology: Technological advances have enabled access to wider global resources and information. Technology is also used to connect students and educators from different countries. 2. Mobility: Growing global mobility, whether in the form of migration or student exchange, has enhanced intercultural interaction and enriched learning experiences. 3. Global issues: Global challenges such as climate change, migration, and social justice have promoted the inclusion of global issues in curricula. 4. Social awareness: More and more individuals and institutions are aware of the importance of global education in building global peace, sustainability, and well-being. Overall, global education continues to evolve in line with developments in an increasingly connected world. It aims to form world citizens who are

conscious, empathic, and ready to face global challenges with a deeper understanding and a broader perspective.

2. GLOBAL EDUCATION DEVELOPMENT DESIGN ASPECTS

In the discussion section, the results of analysis and synthesis of the library study on the design of sustainable global education based on artificial intelligence (AI) will be outlined. Some of the key aspects to be discussed include learning personalization, adaptive curriculum development, and student progress assessment and monitoring.

- Personalization of Learning: The use of artificial intelligence in education can enable more effective personalization of learning. With the help of AI, the learning material can be tailored to the needs and preferences of students individually [13]. This means that each student can learn in their own rhythm, gain a deeper understanding, and increase their motivation in the learning process. The research and implementation that has been undertaken in this context will provide examples and practical approaches in applying learning personalization using AI technology.

- Adaptive Curriculum Development: The development of adaptive curriculum based on artificial intelligence is also a focus in the design of sustainable global education development. Curriculum can be automatically adjusted based on student progress, needs, and interests [14]. In this context, the library study highlights various methods and techniques that can be used to develop an effective adaptive curriculum. In addition, the application of AI in curriculum development also requires attention to proper design and integration, taking into account different cultural, social, and educational contexts.

- Evaluation and Monitoring of Student Progress: The use of AI in the evaluation and monitoring of student progress can improve the efficiency and accuracy of evaluations [15]. AI can provide a more objective and comprehensive assessment of student progress, thus helping teachers to provide more timely feedback and support better decision-making in learning planning. However, equity in the use of AI technology in assessment, as well as the protection of student data privacy, which is an ethical concern, should also be taken into account.

In addition, the discussion will also examine some of the ethical consequences and data security to be taken into account in the use of AI in the learning process of Islamic education in schools. This includes ethical considerations in using AI technology, protection of student data privacy, and equity in access and use AI technology in education.

Through the discussion, arguments, findings, and approaches related to the design of AI-based sustainable global education development based on the literature that has been analyzed will be presented. This discussion will provide an in-depth understanding of the potential and implications of the use of AI in the development of global sustainable education, as well as identifying aspects that need to be taken into account in responsible implementation.

3. PLAN GLOBAL EDUCATION DEVELOPMENT

Plan Global Education Development Plan to Build Artificial Intelligence-Based Sustainable Education:

- Needs analysis: a. Identification of global challenges and key issues to be addressed through sustainable education. b. Overview of advances in artificial intelligence (AI) technology and its applications in various sectors, including education.

- Objective setting: a. Set short- and long-term goals for the development of AI-based global education. b. Develop a student competence development plan, including an understanding of AI, digital literacy, global problem-solving, and technological ethics.

- Curriculum Design: a. Integration of AI in the curriculum to enhance the personalization of learning and interactive learning experiences. b. Preparation of the learning modules on AI, its impact, and its applications in global problem-solving.

- Content development: a. Creation of interactive teaching materials that can be tailored to the needs and interests of students. b. Development of an AI-based e-learning platform to support learning inside and outside the classroom.
- Teacher training: a. Training educators to understand the potential of AI in education and how to integrate it into teaching. b. Encouraging teachers to be learning facilitators that encourage critical thinking and creativity.
- Partnerships and Networking: a. Building partnerships with educational institutions, international organizations, and technology companies to support the development and implementation of programmes. b. Collaborating with research institutions to develop AI technologies relevant to sustainable education.
- Evaluation and Adjustment: a. Measuring the effectiveness of the program through performance indicators, improving student competence, and positive changes in their understanding of global issues. b. Permanent evaluation and program adjustment based on feedback from students, teachers, and other stakeholders.
- Advocacy and Awareness: a. Conduct awareness campaigns about the importance of AI-based global education and sustainable education. b. Duplicate media, events, and online campaigns to promote programmes and achieved results.
- Implementation and Scalability: a. Start implementation of project in pilot schools and measure their impact. b. Prepare plans to develop programmes more widely and scalability.
- Sustainable Monitoring and Evaluation: a. Continuously monitoring program development and collecting data for continuous evaluation. b. Adapting programmes to AI technology developments and global educational needs.

By designing and implementing development plans like this, global education can be enriched with artificial intelligence technology to create learning experiences that are adaptive, inclusive, and relevant to global issues [16, 17, 18]. Our commitment to the development of artificial intelligence, namely education, is an important milestone in shaping a better future. In an age of rapidly evolving technology, the use of AI has opened up new opportunities to enrich learning and shape sustainable education. Therefore, we would like to encourage all stakeholders to consider and implement an AI-based global education development plan in an effort to build sustainable education with a positive impact.

In this context, we want to emphasize some important things: 1. Inclusive and Adaptive Education: By using AI, we can create a more inclusive and adaptive learning experience. It allows each student to learn according to their own speed and style of learning. It also encourages the development of the unique potential of each individual; 2. Understanding AI: It is important for educators and students to have an understanding of artificial intelligence. It will help them appreciate the potential and limitations of this technology and provide a solid foundation in its use; 3. Global Creativity and Problem Solving: Developing AI-based education can encourage students to develop critical, creative, and problem-solving skills relevant to global challenges. AI can be used as a tool to address issues such as climate change, global health, and inequality; 4. Justice and Ethics: In applying AI in education, it is important to ensure fairness in access and use of technology. Protection of student data privacy and ethical use of AI should be given priority; 5. Collaboration and Partnership: The development of sustainable education based on AI requires cooperation between educational institutions, governments, international organizations, and the private sector. Together, we can optimize the use of technology for the benefit of education.

However, in applying this approach, it is important to maintain a balance between technological progress with justice and ethics. Student data protection, a good understanding of AI, emphasis on contextual and humanistic learning remains the main focus. Collaboration between educational institutions, government, and the private sector is also key to ensuring the success of the program.

AI-based global education brings great hope to form a generation ready to face global issues with deeper understanding and innovative solutions. By integrating AI technology wisely and focusing on a sustainable approach, we can create a brighter, more inclusive, and positive education future for the entire world. This opportunity not only creates room for individual development, but also prepares the foundation for sustainable development and world peace.

IV. CONCLUSION

Based on the library studies that have been carried out on the design of sustainable global education development based on artificial intelligence (AI), some key conclusions can be drawn as follows: the use of AI in education can provide potential for developing more personal and adaptive education. Using AI technology, a personalized learning approach can be implemented by providing learning materials tailored to individual student needs and preferences. Additionally, the development of an AI-based adaptive curriculum also enables learning experiences tailoring to student progress and interests.

The use of AI in evaluating and monitoring student progress can improve evaluation efficiency and accuracy. AI can provide a more objective and thorough assessment of student progress, provide timely feedback, and help better decision-making in learning planning. However, it is important to consider equity in the use of AI technology in the assessment and protection of student data privacy.

In the development of sustainable global education based on AI, the need to pay attention to ethical, fairness, and data security aspects. Ethics in using AI technology, protection of students' data privacy, and fairness in accessing and using AI technologies in education should be the primary concerns. Appropriate policies and guidelines must be implemented to ensure responsible use of AI technology and avoid possible negative consequences. Implementation of AI-based global sustainable education development design must take into account different cultural, social, and educational contexts. The use of AI in Islamic education also needs to be aligned with Islamic values and principles, as well maintain balance between the use of technology and the priority of religious values in learning. In order to develop sustainable global education, the use of AI in educational design can be an exciting solution. However, further research and careful monitoring of the implementation of AI technology in education is needed to ensure that the potential it has can be used effectively and responsibly. Thus, it can be expected that the development of sustainable education based on AI will provide significant benefits in improving the quality of education at the global level.

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