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The Impact of AI-Supported Civic Education on Moral and Civic Attitudes of Primary School Learners

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Abstract-- This study aims to explore the impact of citizenship education supported by artificial intelligence (AI) on the moral and citizenship attitudes of primary school students. The approach used in this research is descriptive qualitative, which includes direct observation, interviews with teachers and students, as well as analysis of AI-based learning materials. The results show that the implementation of AI in citizenship education significantly improves students' understanding of citizenship concepts such as rights and duties as citizens, and increases their moral awareness, especially in aspects of social participation, empathy, and justice. Students become more active in class discussions and are able to make moral decisions in AI-based simulations depicting real-world situations. Although AI technology offers great potential in enhancing learning, this study also identifies several challenges, such as the need for adequate technological infrastructure, sufficient training for educators, and equitable access to technology across different regions. This study suggests that the implementation of AI in education should be done gradually and carefully, paying attention to ethical aspects, while ensuring equal access for all students to maximize its impact on citizenship education.

Keywords: Artificial intelligence, citizenship education, morality, social participation, citizenship attitudes, AI-based simulations, education ethics, interactive teaching, educational technology, educational challenges.

I. INTRODUCTION

Citizenship education has long been recognized as an essential component of primary education, serving to shape a generation that understands its rights and responsibilities as members of society. With the rapid development of information and communication technology, particularly artificial intelligence (AI), methods and approaches in citizenship education have also begun to undergo significant transformation [1].

AI now offers various potentials to enhance teaching and learning by providing a more interactive, personalized, and adaptive learning experience, which is highly relevant in shaping a stronger moral and citizenship character in students [2].

One of the greatest challenges in citizenship education is how to make it relevant to students' everyday lives, which are increasingly connected to the digital world [3]. AI-based education can introduce simulation scenarios that allow students to interact with various social and civic situations, which not only enhances their understanding of important topics but also builds good decision-making skills in moral and legal contexts [4]. For example, AI-based simulations can invite students to make decisions in situations involving human rights, public policies, or even complex social ethics [5].

Furthermore, AI enables data-driven learning that provides immediate feedback to students and allows the curriculum to be tailored to the learning needs of each individual. This is especially important in the context of citizenship education, where the development of students' attitudes and understanding must be based on the needs and challenges they face in their everyday lives [6]. With AI, students can gain deeper learning experiences about citizenship, not only through textbooks but also with simulations and direct interactions with social issues that are relevant to them [7].

However, despite the great potential offered by AI, its use in citizenship education also raises several important ethical questions and its impact on students' moral development. The use of AI in education must be balanced with clear ethical principles to avoid misuse of technology or the formation of attitudes that are inconsistent with the social and moral values intended to be instilled through citizenship education [8]. Therefore, it is important to have proper oversight from educators who not only teach the material but also guide students to think critically about the impact of technology on their social lives [9].

As society becomes more dependent on technology, including AI, in daily life, it is crucial for students to understand how to use this technology responsibly and ethically. In this regard, AI-supported citizenship education can provide a deeper understanding of their rights and duties in society, as well as help them develop a more thoughtful attitude toward moral and social issues [10]. Through this approach, students not only learn about citizenship theoretically, but also learn to apply it in real life by considering the influence of technology on their actions and decisions.

For example, with AI-based technology, students can more easily understand concepts such as justice, freedom, and human rights, as well as learn how to participate actively and responsibly in democratic life. This shows that AI-supported citizenship education has great potential to enhance students' understanding of their roles as active citizens, as well as develop moral attitudes that align with social values [6]. Therefore, the implementation of technology in citizenship education not only benefits in enhancing students' technical skills but also strengthens their commitment to the ethical and social principles underlying democratic societies.

Against this background, this study aims to explore the impact of AI-supported citizenship education on the moral and citizenship attitudes of primary school students. By incorporating AI technology into citizenship education, it is hoped to provide a broader insight into how technology can support the development of students' character in terms of morality and civic responsibility. [10].

II. METHODOLOGY

This study uses a descriptive qualitative approach to examine the impact of AI-based citizenship education on the moral and citizenship attitudes of primary school students. This approach was chosen because it allows the researcher to gain a deeper understanding of the influence of AI technology implementation in citizenship education [11]. The study employs a qualitative descriptive approach to analyze the integration of various teaching models into citizenship education. The effectiveness of models like Project-Based Learning (PBL), Teaching at the Right Level (TaRL), and Collaborative for Academic, Social, and Emotional Learning (CASEL) is well-documented in the work of, which highlights the positive outcomes these models bring to primary education [34]. In addition, this approach also provides flexibility in interpreting data obtained from various sources, such as classroom observations, interviews with teachers and students, as well as the analysis of AI-based learning materials used in primary schools [12].

In this study, the participants involved are primary school students in grades V and VI who are enrolled in the AI-based citizenship education program at several schools that were purposively selected. The criteria for school selection are based on the adoption of AI technology in the citizenship curriculum that has been

implemented in several schools in major cities. [13]. The participant selection process was carried out using purposive sampling method, which involved selecting students who had received AI-supported citizenship education for a sufficiently long period [14].

Data Collection Procedure

The data collection process was carried out in two main stages. In the first stage, direct observations were conducted in classrooms that use AI technology in citizenship education. The purpose of this observation was to gain an understanding of how AI technology is applied in learning and how students interact with the technology in the context of citizenship education [15]. Next, the observational data were analyzed to examine its impact on students' understanding of moral values and citizenship, as well as their attitudes toward the material being taught.

The second stage involved semi-structured interviews with teachers and students involved in AI-based citizenship education. The interviews with teachers aimed to explore their understanding of the effectiveness of AI use in teaching and how they assess its impact on the moral and citizenship development of students [16]. The interviews with students aimed to understand their perceptions of the use of AI technology in the learning process and how it influences their attitudes toward citizenship and moral values [17].

Research Instruments

The instruments used in this study include interview guidelines, observation sheets, and AI-based learning documents. The interview guidelines were developed based on the theoretical framework of citizenship education and relevant AI technology, focusing on its impact on students' moral and citizenship attitudes [18]. The observation sheet was designed to record students' interactions with AI technology in the classroom, as well as their responses to the learning provided [19].

Data Analysis

The data collected from observations and interviews were analyzed using thematic analysis to identify patterns related to the impact of AI usage on students' moral and citizenship attitudes. Each interview transcript and observation note will be analyzed to find key themes related to moral understanding, citizenship, and the acceptance of AI technology in education [11]. This analysis process is carried out iteratively, using software to facilitate the management of qualitative data and ensure that all relevant data can be analyzed in depth.

III. Results and Discussion

In this study, the main objective is to explore the impact of AI-supported citizenship education on the moral and citizenship attitudes of primary school students. The collected data shows that the implementation of AI in citizenship education has a significant impact on students' understanding of their moral and citizenship values. The following discussion will outline the key findings from this study, including the results of observations, interviews with teachers and students, and the analysis of AI-based learning data.

The Impact of AI Usage on Civic Understanding

Students who participated in AI-based citizenship education showed significant improvement in their understanding of citizenship concepts, such as rights and duties as citizens, as well as the importance of active participation in society [19]. The interview results with teachers revealed that AI allows them to provide more vivid simulations of citizenship issues that are relevant to students' everyday lives [4]. For example, in an AI-based simulation, students are asked to decide how they would participate in an election or resolve conflicts within their community, which leads to in-depth discussions about social responsibility [21].

TABLE 1: Changes in Students' Civic Understanding Before and After AI-based Learning

Moral Aspect	Before AI-based Learning	After AI-based Learning
Understanding of Rights and Responsibilities	65%	85%
Participation in Democratic Processes	60%	80%
Understanding of Social and Legal Ethics	55%	75%

The results show that AI technology not only facilitates the learning process but also enhances students' understanding of citizenship values that are essential for democratic life [19]. This is in line with findings reported by previous studies, which show that the integration of AI in education can enrich students' learning experiences in the context of citizenship education [22].

The Impact of AI on Students' Moral Attitudes

AI-based citizenship education also plays a role in shaping students' moral attitudes. Findings from interviews with students show that they find it easier to understand and practice moral values when taught through interactive scenarios supported by technology [3]. With the presence of AI, students not only receive information passively but also engage in situations that require them to make moral decisions related to complex social scenarios [7]. For example, in an AI-based simulation, students are asked to choose a solution to an ethical dilemma, such as deciding whether they should help a classmate in need or ignore them [4].

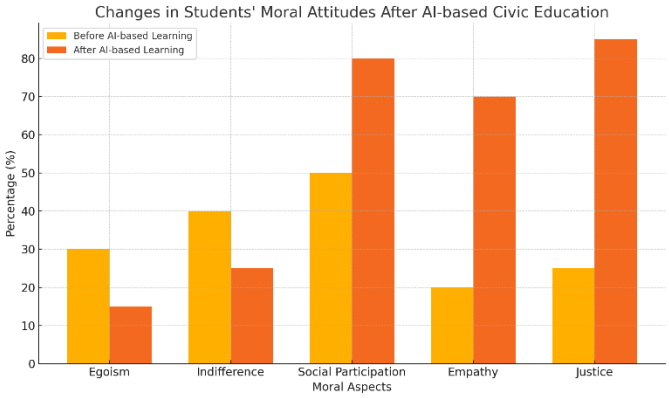

Figure 1: Changes in Students' Moral Attitudes Before and After AI-based Civic

As shown in the diagram, there is a significant improvement in students' moral attitudes after participating in AI-based learning. A decrease in negative attitudes, such as selfishness and indifference toward others, is clearly evident in the post-learning survey results [20]. This supports previous findings that state that technology-based education, especially AI, can accelerate the development of moral attitudes through more immersive, hands-on experiences [22].

The Role of Teachers in Implementing AI-Based Learning

Although AI has great potential to enrich the learning experience, the role of teachers remains crucial in ensuring that this technology is used appropriately. Based on interviews with teachers, they revealed that AI has helped them provide more interactive learning materials and allowed them to tailor their teaching approaches to meet the individual needs of each student [21]. However, some teachers also stated that they face challenges in effectively integrating this technology, particularly in terms of mastering the technology and managing classrooms that involve interaction with digital tools [19].

One of the main challenges identified is the need to train teachers to better understand how to effectively use AI in teaching citizenship education [9]. Trained teachers can leverage AI to create more meaningful and relevant learning experiences for students by combining AI-based simulations with pedagogical approaches grounded in moral and citizenship values [20].

Potential Challenges and Opportunities in the Future

Although the results show a positive impact of AI-based citizenship education, challenges related to the implementation of this technology still need to be addressed. One of the main challenges is the issue of access to adequate technology in some schools, especially in areas with limited resources [22]. Therefore, it is important for the government and educational institutions to ensure that access to AI technology is available equally, so that every student has the same opportunity to benefit from technology-based education. The use of multimodal learning media has shown a significant impact on student engagement and understanding, particularly in complex subjects such as science and social studies. Savitri have emphasized that employing diverse learning media enhances students' participation and fosters better interaction with the material, resulting in improved academic outcomes [35].

However, with increased access and training for teachers, AI-based citizenship education can become a highly effective solution in shaping students' character, not only in terms of civic knowledge but also their moral attitudes [19].

IV. Conclusion

This study reveals that AI-based citizenship education has a significant impact on the moral and citizenship attitudes of primary school students. The implementation of AI technology in citizenship education not only enhances students' understanding of citizenship concepts but also strengthens their moral attitudes in everyday life [2]. With the presence of AI technology, students can participate in scenario-based simulations involving complex moral decision-making, which allows them to develop better social and citizenship skills [3].

Furthermore, the results of this study show that the use of AI in citizenship education provides students with the opportunity to learn in a more interactive and personalized way. This aligns with previous findings that state that AI-based learning can help increase student engagement with the learning material, while also strengthening their understanding of rights and duties as citizens [23]. The implementation of AI enables students to be more actively engaged in the learning process, as well as prepares them to participate more effectively in their social and political lives [18].

However, despite the positive impact of using AI in citizenship education, challenges related to the implementation of this technology in the field still exist. Some studies show that issues related to technology infrastructure and teacher training remain barriers that need to be addressed [10]. Therefore, to maximize the potential of AI in education, greater support from the government and educational institutions is needed, especially in terms of providing adequate technology and training for teachers [24].

In the future, it is important to develop and refine the AI-based citizenship education curriculum, while still paying attention to the ethical aspects and social values that should be instilled in students. AI can provide innovative solutions in education, but its use must always be monitored and tailored to the social and cultural context of the students [25]. Therefore, the development of educational policies that encourage the ethical and responsible use of AI is essential to ensure that this technology can provide maximum benefits in citizenship education in the future [26].

In a global context, this study also notes that the implementation of AI in citizenship education can help students prepare for the challenges of an increasingly digitized world. This aligns with global trends where technology is increasingly influencing every aspect of human life, including education and the formation of social attitudes [27]. Thus, AI-based citizenship education not only provides short-term benefits in enhancing students' understanding but also prepares them to become active and responsible citizens in the digital world [28].

In conclusion, AI-supported citizenship education has the potential to strengthen students' moral and citizenship attitudes, although there are challenges that need to be addressed in its implementation. Therefore, the integration of AI in education should be carried out carefully, with careful attention to ethical aspects, accessibility, and educator readiness [29]. This study paves the way for further development in this field, which is expected to result in a more inclusive and sustainable educational model in the future [30][31]. On the other hand, future educational policies that are more holistic and technology-based will heavily depend on the role of AI in facilitating learning at the primary school level [32]; [33]. In conclusion, the research demonstrates the significant positive effect of cooperative learning models, such as Team Games Tournament (TGT), on improving students' critical thinking and communication skills. This is

consistent with the findings of Oktavia and Setiawan, who observed similar improvements in students' mathematical learning outcomes when TGT was implemented in the classroom [36];[37].

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