

The future of character education in the era of artificial intelligence

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Abstract

This study aims to analyze the future and sustainability of character education in the era of artificial intelligence. This issue is very important because some research findings show that artificial intelligence-based technology threatens the process of internalizing academic ethical values in education. If this problem is not addressed, it is feared that the implementation of character education will be marginalized by the use of artificial intelligence technology. This research is a philosophical research model on actual problems using a qualitative approach. The material object in this study is the use of *artificial intelligence* in education; while the formal object used is the philosophy of technology. Data collection techniques use document studies, while the methodical elements used in data analysis are description, analysis, synthesis, hermeneutics, language analysis, and heuristics. This study found that the development of artificial intelligence technology in education is an unavoidable phenomenon. The world of education as one of the strategic vehicles to improve the quality of human self, has a double duty. First, education must continue to maintain and preserve academic ethical values amid the development of artificial intelligence technology. Second, education at the same time must also be able to eliminate anxiety, fear, or phobia of the use of artificial intelligence. Based on these findings, this study emphasizes the importance of developing character education and artificial intelligence education in a harmonious and balanced manner in order to maintain the continuity of character education in the future in the era of artificial intelligence.

Penelitian ini bertujuan untuk menganalisis masa depan dan keberlanjutan pendidikan karakter di era kecerdasan buatan. Isu ini sangat penting karena beberapa temuan penelitian menunjukkan bahwa teknologi berbasis kecerdasan buatan mengancam proses internalisasi nilai-nilai etika akademik dalam pendidikan. Jika masalah ini tidak diatasi, dikhawatirkan implementasi pendidikan karakter akan terpinggirkan oleh penggunaan teknologi kecerdasan buatan. Penelitian ini merupakan model penelitian filosofis tentang permasalahan aktual dengan menggunakan pendekatan kualitatif. Objek material dalam penelitian ini adalah penggunaan *artificial intelligence* dalam pendidikan; sedangkan objek formal yang digunakan adalah filsafat teknologi. Teknik pengumpulan data menggunakan studi dokumen, sedangkan elemen metodis yang digunakan dalam analisis data adalah deskripsi, analisis, sintesis, hermeneutika, analisis bahasa, dan heuristika. Penelitian ini menemukan bahwa perkembangan teknologi kecerdasan buatan dalam pendidikan merupakan fenomena yang tidak dapat dihindari. Dunia pendidikan sebagai salah satu wahana strategis untuk meningkatkan kualitas diri manusia, memiliki tugas ganda. Pertama, pendidikan harus terus menjaga dan melestarikan nilai-nilai etika akademik di tengah perkembangan teknologi kecerdasan buatan. Kedua, pendidikan sekaligus juga harus mampu menghilangkan kecemasan, ketakutan, atau fobia terhadap penggunaan kecerdasan buatan. Berdasarkan temuan tersebut, penelitian ini menekankan pentingnya pengembangan pendidikan karakter

dan pendidikan kecerdasan buatan secara harmonis dan seimbang guna menjaga keberlangsungan pendidikan karakter di masa depan di era kecerdasan buatan.

Keywords: character education, artificial intelligence, harmony, academic ethics, values

Introduction

The presence of artificial intelligence or AI-based technology provides a great challenge in the academic sector (Ikedinachi A. P. WOGU et al., 2019). AI-based services such as ChatGPT, Perplexity, Bing Chat, and other similar services, in addition to offering various kinds of convenience to humans, also give birth to ethical issues, especially in their use in the field of education (Tlili et al., 2023). As is now widely known, ChatGPT has allowed humans as users to send commands to “computers”, for example in the form of a request to create an essay of 1000 words, and then in an instant the essay will be finished (Lieberman, 2023). This technology is being hotly discussed and used on various social media platforms as if revolutionizing the way humans use computers (Catal & Tekinerdogan, 2019). Services like this undeniably help humans save time and energy when compiling writing, for example to create content on *websites*. Some creative content on social media has felt the various benefits felt by the emergence of artificial intelligence-based word processor technology. Not only in the form of services for writing articles, but also services for compiling presentation impressions, visual design, and various other services. Managing a website that initially requires a lot of time and energy, can be done in an instant using this AI-based technology. Likewise with jobs related to design, such as designing posters, flyers, presentation impressions, and other similar jobs. This work can be completed in just an instant by utilizing AI-based technology.

However, the problem became more complicated because it was later discovered that the use of *artificial intelligence-based services* had entered the realm of education. Several content creator posts on Instagram or TikTok have shared various AI-based tools to help make it easier for students to undergo their studies. Worse, this technology is not used to help the human learning process, but is used for things that test competence, for example in the task of compiling essays or papers. The rise of the use of AI-based technology in the world of education for things that are not as similar as this, it is feared that it will erode the values of good character instilled in students through character education, one of which is the value of academic integrity. The use of AI-based technology is also feared to obscure the values of good character instilled through education (Al-Omran et al., 2019; Liao, 2020; Yang, 2020).

The problem of using AI-based technology in education is a problem that is not only important but urgent to find a solution immediately (Humble & Mozelius, 2022). Based on several studies that discuss the dangers of AI-based technology, it was found that the use of AI technology in education shows at least three dangers (UNESCO, 2018). First, the use of AI technology in the world has the potential or threat to the sustainability of character education. Education is one of the important investments for the future of mankind. One aspect that is built through education is the character aspect of the learners. Good character values such as honesty, religiosity, justice, self-confidence, in addition to Pancasila values of course, can be threatened because of the rampant use of AI technology in the world of education. The second danger is that the use of AI-based technology in education has the potential to dilute academic ethics such as the value of honesty, academic integrity, and originality. AI-based services such as ChatGPT have been proven to be able to provide convenience to students in completing various learning tasks. Starting from simple tasks, to complex tasks. The effectiveness and efficiency offered by this AI-based technology is certainly very tempting for anyone who uses it (Lund & Wang, 2023). The values of honesty, integrity, and originality can be defeated by the value of effectiveness and efficiency offered by this AI-based service. Third, the danger of using AI-based technology in education is the potential to turn off human or student creativity and critical thinking skills. Human interaction and AI technology, which is not accompanied by awareness of human autonomy, is feared to kill the creativity and critical thinking ability of students. When faced with complex problems and require long problem solving, it is feared that students will lose their learning motivation (Algabri et al., 2021).

Along with the increasingly widespread use of AI-based technology, research discussing AI technology is also increasing. Based on the author's search, several research results were found that discussed the use of AI technology in the field of education. An overview of the use of *artificial intelligence* in education is written very well by Chen, et al. in an article entitled "Artificial Intelligence in Education: A Review" (Chen et al., 2020). Chen, et al. analyzed several opportunities for the use of AI in education, for example in adjusting educational curricula, learning technology, and information systems supporting the implementation of education. Based on Chen's research, et al., AI actually has many advantages. Although Chen actually also does not deny the existence of dangerous potential from AI (Chen et al., 2020).

Another information that needs to be listened to is the writings of Muhammad Adil. Muhammad Adil in a blog article wrote ten negative impacts of using AI in education. Muhammad Adil's writing is very interesting to discuss because the 10 negative impacts written cover several aspects of education (Adil, 2022). Adil not only focuses on the decline in the academic ability of students using AI, but also financial problems, the potential unemployment of teachers, and also reliability in terms of AI technology. Apart from these three things, Adil emphasized that the use of AI in education can have a negative impact in the form of decreased students' thinking skills, laziness, decreased emotional intelligence, and decreased communication skills.

Crompton in a study entitled "Affordances and Challenges of Artificial Intelligence in K-12 Education: A Systematic Review" analyzed several challenges arising from the use of AI in education, especially K-12 (Crompton et al., 2022). Crompton emphasized that the use of AI in education is faced with several problems, including negative perceptions of AI technology, lack of technology mastery skills among teachers and students, ethical issues, and issues directly related to accessibility in the use of AI. Potential dangers from the use of *artificial intelligence* in the world of education is also the focus of research Lai T., et al. Lai T., et al. in an article entitled "Influence of artificial intelligence in education on adolescents' social adaptability: The mediatory role of social support" concluded that AI in education has a negative impact on the social adaptation of the younger generation or adolescents (Lai et al., 2023).

Among several international researchers who pay attention to the issue of the use of AI in education, the author also found several Indonesian researchers. The first is the research of Supriadi, et al. entitled "Learning Innovation Based on Artificial Intelligence Technology in Education in the Era of Industry 4.0 and Society 5.0". Supriadi S. et al. (2022) emphasized that the presence of AI technology in the world does provide a breakthrough in teaching and learning activities. This breakthrough, however, must be followed by increasing the ability of teachers and parents in the use of AI. One study that analyzed the impact of the use of AI on value education was conducted by Pantan in an article entitled "ChatGPT and Artificial Intelligence: Chaos or Revival for Christian Education in the Postmodern Era". The study concluded that the use of ChatGPT will reduce values in Christian religious education, although it is undeniable that AI also provides new opportunities in many ways (Pantan et al., 2023)

Various studies that discuss AI show that the use of AI in various fields of human life, especially education has indeed attracted the attention of researchers. This can be seen from the many studies that discuss artificial intelligence. However, these studies have the disadvantage that they have not been able to answer the question of the future of character education in this era of using AI. In addition, studies discussing the impact of using AI technology in Indonesia are also still minimal. Among several studies that discuss artificial intelligence, the research conducted by Pantan is one that has an analytical character similar to this study. Because they both discuss the impact of artificial intelligence on value education. This study, however, also does not discuss the relationship between the use of artificial intelligence-based technology and character education in general. Moreover, the future of character education in the era of artificial intelligence.

Departing from some of the above, this study seeks to discuss one crucial issue, namely that the use of artificial intelligence in education has the potential to threaten the future of character education. In particular, this study has two objectives, first, this study seeks to critically analyze the future of character education in the era of artificial intelligence; second, this study also aims to formulate a strategy for developing character education in the era of artificial intelligence.

Method

This research is a philosophical research model on actual problems that exist in society. The approach used in this research is a qualitative approach, while the type of research used is a literature study or library research (Bakker & Zubair, 1994). The material object in this study is the use of AI-based technology in education which is analyzed from the point of view of a formal object, namely the philosophy of technology. The use of artificial intelligence-based technology as an object of research is based on two considerations. The first is the viral variety of content on social media that discusses the various benefits of artificial intelligence technology; and the second consideration is the use of AI technology which turns out to raise ethical issues at the same time.

The philosophy of technology was chosen as an analytical point of view in discussing the future of character education in this era of AI technology because the philosophy of technology basically analyzes critically interaction between man and technology in different areas of life. AI as one of the phenomenal technology products needs to be studied in terms of philosophy of technology so that the presence of the technology does not have a detrimental impact on human life.

The study was conducted in four stages. First, is the data collection stage, followed by the data classification stage, data analysis, and preparation of research results. Data collection in this study was carried out by literature study, namely by analyzing various scientific publications that discuss the use of technology based on artificial intelligence technology in the world of education. The research data is then classified into primary data and secondary data. Primary data relates to references that directly discuss the impact of AI-based technology on the implementation of value education or character education; while secondary data is data that discusses the use of artificial intelligence-based technology in education.

Based on the selected research model, data analysis in this study uses several methodical elements, including description, analysis, synthesis, language analytics, hermenutics, and heuristics.

Results and Discussion

Analysis on the Future of Character Education in the Era of Artificial Intelligence

The intersection between character education and artificial intelligence-based technology is inevitable. The reason is very simple, that there is hardly an area in the field of education that is not touched by artificial intelligence even if only at a modest level (UNESCO, 2018). Long before artificial intelligence developed so far, some AI-based devices had actually appeared a long time ago. One example of the simplest AI-based tool used in education is the calculator. The presence of calculators has provided many conveniences to students, especially in solving problems in the exact sciences, such as mathematics, physics, and chemistry.

In the early days of the emergence of the internet, there was also a development of AI-based services that are highly relied upon by students, namely the translation service, Google Translate (Amar et al., 2013). Now Google Translate can be said to be a service that no one can leave. Starting from work-related activities such as writing publication articles; to recreation-related activities such as vacations to other countries. Both types of activities always require Google Translate technology. Along with the development of mobile computing, AI-based services are becoming more advanced thanks to the presence of smartphones or smartphones. Various applications have sprung up and offer various kinds of conveniences in human life.

One of the major developments in the use of AI in education is in supporting scientific publications. Reference management tools, paraphrasing tools, similarity checkers, math solvers, and lately writing tools ChatGPT is a series of AI-based tools that exist to respond to the needs of users for reliable technology to support research and publication needs. Now AI devices have developed very rapidly and seem to revolutionize the way humans interact with technology. Jobs that previously took hours can be completed in minutes and even seconds.

The fact of the popularity of artificial intelligence-based technology in the world of education cannot be separated from the presence of two main values of technology in this artificial intelligence. The two main

values in such technology are effectiveness and efficiency (Cathrin, 2019). Artificial intelligence offers multiple efficiencies in getting a job done. If previously writing an essay took 1 week, with ChatGPT the essay can be completed in less than 1 minute.

Besides being efficient, AI-based technology also offers effectiveness, namely the accuracy of technology in overcoming problems that exist in society. People don't have enough time to do tasks, AI can help solve them (Goralski & Tan, 2020). Humans can't write letters in English; AI can help them. Humans can't solve very complex math problems; AI can also help find the answer.

Various kinds of AI-based technologies with a series of benefits in them show that AI does provide many conveniences in human life. However, when considered in terms of the philosophy of technology, the main value offered by AI technology is effectiveness and efficiency (Cathrin, 2019). These two values are actually not enough to be a measure of whether or not technology is good because any AI job that is intended to replace human work, must involve a 'humanist' side. The humanist side of this work is what sometimes escapes or is absent from the results of AI work. Without this humanist side, humans who rely on AI will be reduced to "robots" or to "machines". Herein lies the danger of using AI for character education. Without being based on strengthening the humanist side, it is feared that humans who are increasingly 'familiar' with AI will lose their human side, including one of them losing character.

Given the increasingly massive development of AI-based technology above, there is no other choice that can be taken by the field of character education studies except to respond to the presence of this artificial intelligence-based technology. Like it or not, ready or unprepared, the world of education must move quickly to respond and determine steps to overcome the dangers or threats of AI that have the potential to erode this human side. Although in the world of education, teachers or lecturers as educators have implemented strict rules that prohibit the use of AI, nevertheless given the nature of information dissemination through an anonymous and massive internet, there is no guarantee that students or students will obey not to use AI. The use of translation tools is one simple example. When students are asked to create an English essay, the possibility of relying on Google Translate is enormous, even though at the same time educators prohibit the use of the tool. Another example is in the use of ChatGPT writing assistance tools (Lund & Wang, 2023). The various conveniences that exist in ChatGPT make this tool very reliable for students to compile essays, papers, and similar tasks.

This fact is one thing that should be a concern for educators. The presence of effectiveness and efficiency values through ChatGPT technology in fact threatens the existence of good character values taught in schools, such as honesty, confidence, integrity, and so on. The right step or strategy to overcome this problem therefore needs to be formulated carefully. Instead of banning the use of AI in education; or instead of rejecting the presence of AI, the world of character education must actually formulate strategies to produce the right attitude.

In the study of philosophy of technology, there are two options to address AI technology, namely avoiding AI-based technology or integrating it in education (Ley et al., 2022). Just like the presence of new things in life, humans have a tendency to choose between two things: accepting or rejecting the new thing. When smartphone technology came, people were divided into groups that accepted and adapted, and those who refused and did not want to use smartphones (Busch et al., 2021; Demirci et al., 2015). The presence of AI-based devices in education is also the same. In the early days of ChatGPT, there were many counter-reactions and firmly rejected the presence of this service in the world of education. The reason is because such AI technology goes against academic integrity.

Over time, users learned that it turns out that the features of this tool are not limited to writing articles but can even be a chat buddy. Little by little the desire to get to know this service also increased. Along with the increasing interest, there are also some of the same services such as Perplexity and Bing Chat. This fact shows that no other option can be taken from technological developments but to respond with openness. The question remains how can this new technology then not contradict and eliminate the values of good character instilled through education?

Character Education Development Strategy in the Era of Artificial Intelligence

One policy that can be used as an inspiration on how to respond to the presence of artificial intelligence in the world of education is the idea of Society 5.0 put forward by the Japanese government (Deguchi et al., 2020). Society 5.0 is a new idea about the model of human relations and technology in this era of artificial intelligence. It is based on at least three considerations.

First, the Japanese Government does not place the presence of AI as a threat, but as a phenomenon of technological society that cannot be denied its presence. Various kinds of technological developments are therefore not rejected but accepted and addressed by strengthening the human side (Miwa, 2020).

Second, the Japanese government also emphasized the importance of accommodating two worlds in a balanced manner, namely the physical sphere and the virtual sphere. One of the typical phenomena that appears in the era of digital technology development is the presence of physical space and virtual space at once. The Japanese government emphasizes that both physical space and virtual space are equally important. The option to reject the presence of AI has clearly never been accepted by Japan (Miwa, 2020).

Third, education must be able to foster critical thinking, and restore the human side. Japan realizes that one of the things that shows the human superiority of artificial intelligence devices lies in its humanist side. Therefore, education is expected to be able to restore and even strengthen the human side that was eroded due to the presence of this technology (Miwa, 2020).

Based on the strategies formulated above, this Japanese strategy therefore introduces the vision of Society 5.0 as the superintelligence society. This vision has an important meaning because with this vision Japan shows that the position of humans is higher than AI. Artificial intelligence-based devices have emerged, and humans must put themselves on top of them so that they can become the super intelligence society.

The strategy taken by the Japanese Government in dealing with the development of AI technology is one of the best steps that implies the integration of AI technology in the world of education. Character education to build humans is also not abandoned and even strengthened its position in this era of AI development. These steps taken by Japan can be an inspiration for efforts to formulate strategies to strengthen character education in the AI-era.

The advancement of society and the numerous forms of technology it contains offer opportunities to raise the quality of life for people. Even while it is possible to reject the existence of this technology, doing so is quite difficult. Determining how to conduct character education considering the advancement of AI technology is thus the primary step that can be made to ensure its future. AI technology is like a currency that has two sides. On the one hand this technology has a negative impact, but on the other hand this technology has a positive impact which is also a pity if it is not used properly.

The question is not how to reject the presence of the technology, but how to minimize the negative impact, and optimize the positive impact of this technology.

Instead of avoiding using ChatGPT in learning, teachers and other educators can use ChatGPT as an experimental medium to test the extent to which this device is effective for assisting human tasks (Lieberman, 2023; Lund & Wang, 2023). The presence of AI is not used solely to relieve human tasks, but also as a medium for experimentation, namely, to analyze the weaknesses and advantages of AI services themselves. For example, teachers can give the task of compiling papers to students using several AI devices, then compare the results of the AI work with one another. The students were also asked to analyze the advantages and weaknesses of this AI work.

Through learning patterns like this, students will be accustomed to developing critical thinking patterns in using Ai-based devices so that the humanist character values that exist in students are not defeated by the value of effectiveness and efficiency offered by this technology.

The implementation of the AI-based technology integration strategy in character education can be seen in three ways. In order for AI-based devices to be used for things that do not conflict with the values or character traits taught in schools, the development or adoption of AI-based technology in character education must include

three strategic steps.

1. Develop ethical standards for the use of AI in education.
2. Campaigning for human excellence and confidence over AI technology.
3. Strengthening character education from an early age.

These three things are absolutely necessary in an effort to integrate AI in character education so that the use of AI will not erode the human side of humans as users of this technology. First, ethical standards for the use of AI in education are a need that is not only important but also urgent. The presence of AI in the world of education and its various conveniences, if not responded with a strong ethical foundation, it is feared that it will ignore various good character values that are far more important than just the value of effectiveness and efficiency value. Second, campaigning for human excellence and confidence above this technology is also one thing that should not escape the attention of education practitioners. It is necessary to build an understanding that technology is a human product, so that humans should still have a position above technology and not vice versa. This campaign about human superiority over AI technology can be carried out through formal, informal, and non-formal channels. Third, the key so that the development of AI technology does not have a negative impact on human life is to strengthen character education from an early age.

So that the use of AI in education is not 'too much', again it needs to be anticipated by strengthening character education (Wikandaru, 2023). The use of AI in education that betrays the values of academic honesty occurs because of the weak character of students as users. Just because they want the task to be good and quickly completed, someone then takes the easy step by utilizing AI-based technology. This kind of thing must obviously be avoided and anticipated so that it does not happen in Indonesia. In 2045 Indonesia is predicted to enter a golden year. The young generation of productive age is predicted to dominate the population of this country. Not only the intellect must be prepared. But also, his/her mentality and character. The rapid development of AI must also be balanced with stronger character education.

At the primary to secondary education level, there are actually *Muatan Lokal* subjects or local content. This course is actually a very strategic place to strengthen students' character. In order to cultivate good character among students more optimally, "Mulok" subjects should not only be filled with knowledge of locality or regional languages. Learning content containing character education based on local wisdom needs to be reproduced.

For example, it can be through wayang. Wayang is one of the 'masterpieces' of the Indonesian which has even been recognized by UNESCO as a world heritage. By discussing one particular play, for example, students can be taught about the moral values of chivalry including the value of honesty. Hundreds of puppet stories that we know today can certainly be an endless means of character education (Sutrisno et al., 2009; Tim Wayang, 2016).

Efforts to strengthen character can also be done through religious lessons that educate students with the noble values of life. It can also be through strengthening Pancasila moral education. Religious education and moral education of Pancasila will strengthen the basis of morality among students.

The hope is that even though artificial intelligence is developing very rapidly, students can still maintain moral integrity by using AI according to the context. Helping while learning is certainly allowed. But not at the time of the exam. Javanese wisdom *empan papan* and *bener tur pener* are actually important ethical basis and must continue to be maintained in strengthening student character in the current era of artificial intelligence development.

Conclusion

A phenomenon that defines the evolution of the times in this digital era is the development of artificial intelligence-based technology. Therefore, it is inevitable that character education and AI-based technologies will converge. The education sector must react to this evolution and the availability of this artificial intelligence-based technologies. There are two options to address, namely avoiding AI-based technology to prevent violations

of academic ethics; or integrate AI technology in education. One of the inspirations for taking policies that determine the future of character education can be taken from the ideas put forward by the Japanese Government. The idea of Society 5.0 is a new idea that from the perspective of the philosophy of technology as a model of relation between human and technology. Society 5.0 has a vision as the *super intelligence society* that accepts the presence of technology while maintaining the human side. Inspired by this idea, character education must be adaptive to the development of artificial intelligence. The intent of this adaptive includes at least four strategies. The first is to use AI technology in character education; second, formulating ethical standards for the use of AI in education; third, campaigning for human excellence and confidence over AI technology; Fourth, strengthening character education from an early age. In addition to ensuring the future of character education in the face of the advancement of AI technology, these four solutions also seek to accomplish two other goals for education. First, education must continue to maintain and preserve academic ethical values amid the development of artificial intelligence technology. Second, education at the same time must also be able to eliminate anxiety, fear, or phobia of the use of artificial intelligence. In order to guarantee the continuation of character education in the future in the era of artificial intelligence, this essay concludes by recommending that character education and artificial intelligence be developed in a harmonic and balanced manner.

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