Reimagining education: Bridging artificial intelligence, transhumanism, and critical pedagogy

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Highlights	Abstract
• Generative AI can be used in educational processes, but human agency is still a critical issue. • Generative AI can be used to increase human capacity and can be viewed as an extension of humans' computing and cognitive abilities. • While generative AI can use human language skillfully, it is different from how humans' reason and use language in terms of the sciences of linguistics and epistemology.	From personalized advertising to economic forecasting, artificial intelligence (AI) is becoming an increasingly important element of our daily lives. These advancements raise concerns regarding the transhumanist perspective and associated discussions in the context of technology-human interaction, as well as the influence of artificial intelligence (AI) on education and critical pedagogy. In this regard, the purpose of this research paper was to investigate the intersection of AI and critical pedagogy by critically assessing the potential of AI to promote or hamper critical pedagogical practices in the context of transhumanism. The article provides an overview of the concepts of transhumanism, artificial intelligence, and critical pedagogy. In order to seek answers to research questions, qualitative research design was adopted, and GPT-3 was used as a data collection resource. Noteworthy findings include the similarity of the dialogue with the GPT-3 davinci model to a conversation between two human beings, as well as its difficulty in understanding some of the questions presented from a critical pedagogy perspective. GPT-3 draws attention to the importance of the relationship between humans in education and emphasizes that AI applications can be an opportunity to ensure equality in education. The research provides suggestions indicating the relationship between AI applications and critical pedagogy.
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1. Introduction

Generic artificial intelligence (AI), and more specifically generative AI, is considered to be a game-changing technology with the potential to transform various industries, including education. However, as AI becomes part of more mainstream education, concerns have been raised regarding its potential impact on society and education, particularly in terms of equal treatment, access, and the roles of educators. These echoes concern previously raised by new technologies such as the printing press, television, and the internet, and lead to critical debates about the rapid transformation of various areas of human life by AI technologies and their ethical, social, and educational implications. Exploring the

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human-technology relationship, which is the research area of the philosophy of transhumanism, poses questions about enhancing human capabilities through technology, raising questions about the nature of human identity and the potential consequences of radical enhancements (More, 2013). Perhaps the most important of these questions is education. Discussing the relationship between AI and education from the perspective of critical pedagogy can contribute to the discussion of AI in education and educational research in terms of the threats and opportunities highlighted by transhumanist philosophy. Motivated by this background, the article intends to contribute to researchers in conducting future educational models and scientific research at the intersection of AI, transhumanism, and critical education.

Transhumanism advocates for the utilization of new technologies to improve human capabilities (Porter, 2017). Proponents contend that genetic engineering, AI, and biotechnology have the potential to increase human intelligence, physique, and emotion (Tirosh-Samuelson, 2012). This worldview positions technology as a means to enhance humanity as a whole, extend life, alleviate sorrow, and enable new human achievements. Nevertheless, transhumanism has detractors who are concerned about the ethics of human enhancement. Critics argue that a division between transhumanism's "enhanced" and "unenhanced" people would further divide society. Concerns include maintaining human authenticity and defining clear human-machine boundaries (Sharon, 2013). Critics fear that technologically improved physical and cognitive enhancements would erode humanity, identity, and the value of natural human experiences (Agar, 2013). Accordingly, transhumanism predicts a future in which technology may transcend human limitations and increase human capabilities. Critics are concerned about the ethical consequences of blurring the barriers between people and technology, while supporters believe it will improve the human condition and address existential concerns (Bostrom & Yudkowsky, 2018). The aims of transhumanism and its potential implications for society, ethics, and human nature warrant careful consideration.

The use of AI, like any other type of technology, comes with threats and opportunities. Worries have been raised that automation would result in job losses and difficulties such as incorrect judgements and prejudices. However, AI may also provide numerous potentials in education, such as personalized learning experiences, adaptive learning processes, enhanced data analytics and assistance for teachers, and educational mainstreaming. When implemented properly, AI could serve as a beneficial assistive technology in education, allowing students to achieve their full potential or easing many educational processes. In this regard, the perspectives of AI on critical pedagogy have been investigated in this research, which focuses on analyzing opportunities while being aware of the threats.

Critical pedagogy, an essential principle in education, significantly influences the discussion on the convergence of generative AI and transhumanism. As we explore the field of AI, specifically generative models such as GPT-3 and future GPT models, it is crucial to contemplate the possible influence on teaching methods. Critical pedagogy prioritizes the empowerment of learners to engage in critical analysis of their social and political environments, facilitating the development of a profound comprehension of the world. The emergence of generative AI models presents both prospects and difficulties in education, enabling customized, efficient, and flexible learning encounters. Nevertheless, the ethical ramifications and inquiries regarding autonomy in education are becoming more relevant. Transhumanism, a movement that supports enhancing human skills via technology, connects with this discussion, prompting inquiries about the limits between humans and machines in the process of learning. The integration of AI in education calls for a nuanced exploration of how to harness the potential of these technologies while preserving the values of critical pedagogy and addressing the ethical implications that arise as we navigate the path toward a transhumanist educational landscape.

2. Background

AI refers to the level of intelligence simulated by machines as opposed to the level of natural intelligence displayed by people. According to Russell and Norvig (2010), the phrase "artificial

intelligence" is frequently used to refer to machines that simulate human cognitive processes such as learning, comprehending, reasoning, or problem-solving. Since the first articulation of the term AI in 1955 (McCarthy et al. 1955), this technology has made significant strides in its development.

The development of AI may be broken down into various phases, each of which can be categorized according to the prevailing methodologies of the time and the amount of progress that was achieved throughout those times. The history of AI may be separated into four periods: rule-based systems, statistical learning, machine/deep learning, and the present reinforcement learning era (Silver et al. 2016). Rule-based systems dominated the first phase of AI, which spanned from the 1950s until the 1980s. These systems were created to emulate human judgement by following a set of rules (Russell & Norvig, 2010). Arf (1959) underlined that while the issue was not challenging, people needed to use machine language effectively for machine intelligence to comprehend humans. The advent of statistical learning methods marked the second AI period, which began in the 1980s and continued until the mid-2000s. Statistical models were utilized in these strategies to discover patterns and correlations from the data (Hastie et al. 2009). Significant improvements were achieved in natural language processing, speech recognition, and computer vision during this period. Deep learning techniques emerged during the third AI era, which began in the mid-2000s. Deep learning is a subset of machine learning that learns from data using artificial neural networks (LeCun et al. 2015). During this time, substantial advances were achieved in image and audio recognition, natural language processing, and gameplay. Reinforcement learning, as a kind of machine learning that focuses on teaching agents to make decisions based on incentives and punishments, dominates the present era of AI (Sutton & Barto, 2018). Reinforcement learning has been used in a wide range of applications, including robots, games, and autonomous vehicles.

The history of AI has made substantial progress in the last several decades, with each phase building on the previous age's triumphs and limitations. AI researchers emphasized the limited computing capacity of the human brain and the learning of machines, which at the time occupied enough space to fill a large hall, in terms of maturation and initiative compared to humans, and the biggest difference between human and AI learning was thought to be aesthetic (Arf, 1959). The boundary between human and AI may diminish in the not-too-distant future, with subtleties arising from the difference between human creativity and algorithmic creation (Bozkurt et al. 2023). Although there is still more work to be done in the interim to develop human-level AI, recent progresses that emerged with generative AI indicates that such an objective is possible in a relatively close future.

Mankind's interest in comprehending machines and, possibly, applying technology to make mankind more powerful and creative has increased interest in AI. Several companies and consortiums have been working on AI development. In recent years, large neural networks trained for language interpretation and generation have shown exceptional results across various activities. GPT-3 pioneered the use of large language models (LLMs) for few-shot learning with outstanding results without the requirement for large-scale task-specific data gathering or model parameter adjustment. In addition to GPT-3, other contemporary LLMs like GLaM, LaMDA, Gopher, and Megatron-Turing NLG attained state-of-the-art few-shot results on several tasks by increasing model size, employing sparsely activated modules, and training on more enormous datasets from more diverse sources. As a result, AI, which can be regarded as a single source or entity, is being explored by various initiatives to unleash its power in many aspects of our lives including education.

3. **Related Literature**

3.1. *AI and Education*

AI in educational research introduces new tools and methodologies that can assist researchers in gaining deeper insights into learning, student behavior, alternative instructional resources, and curriculum creation. The capacity of AI to analyze big data and uncover patterns and connections that

would otherwise go unnoticed provides academics with effective new ways to ask and answer previously unexplored questions, as well as solve some of the most pressing issues confronting educators today. Because of its capacity to analyze the sheer volume of data and acquire insights into student learning and performance, AI will probably become more significant in educational research and a trending hot topic.

The related literature indicates that AI has been utilized in recent years to discover patterns in student behavior (Xia et al. 2022), forecast academic results (Swiecki et al. 2022), build personalized learning techniques (Bhutoria, 2022; Goksel & Bozkurt, 2019), and enhance social and cognitive learning processes by augmenting educational experiences (Bozkurt, 2023a). Analyzing massive datasets is one method of employing AI in educational research. Machine learning algorithms can be applied by researchers to find trends in student performance data, like as grades and test scores, as well as data on student behavior, such as involvement in class discussions and assignment completion (Khan et al. 2021). Researchers hope to acquire insights into how individuals learn and what variables contribute to academic performance by evaluating these patterns.

Another use of AI in educational research is the development of personalized learning strategies. Machine learning algorithms have been used to analyze data on individual student performance and behavior (Huang et al. 2023) as well as student characteristics such as learning styles and interests. This information can then be used to develop personalized learning paths for each student tailored to their unique needs and learning preferences. One of the most important benefits of using AI in educational research is the ability to analyze large amounts of data quickly and accurately. This allows researchers to identify patterns and trends that may not be evident with traditional analytics methods (Holmes et al. 2023).

Nevertheless, obstacles and reluctance regarding the use of AI in educational research are also noted. One of the primary concerns is the potential for bias in data-analysis algorithms. Ultimately, AI is taught using existing data and makes predictions through learning. If the data used to train the algorithms is biased or inaccurate, the resulting analysis could be biased and produce inaccurate or unjust results (Daneshjou et al. 2021; Gaskins, 2022). Ethical considerations surrounding the use of AI in education represent a further obstacle (Şenocak et al. 2023). Educators who fail to recognize the risk of bias in AI's algorithm training and the data it employs, yet continue to use AI, may place too much reliance on it. Several studies, such as Qu et al. (2019) and Jani et al. (2020), have examined the impact of AI on the academic destiny of students. People may feel uneasy about the concept of using machine/deep learning algorithms to determine the academic futures of students. There may also be concerns regarding data privacy and security, particularly when analyzing sensitive student data (Ayling & Chapman, 2022; Lund & Wang, 2023).

The application of AI in educational research has the potential to completely transform the area of education, despite the obstacles that stand in its way. AI has the ability to enhance student results and extend access to education for all students by offering new tools and methods to assess data and generate individualized learning strategies. This might be accomplished by introducing new tools and techniques. It will be necessary for academics and educators to carefully assess the benefits and challenges of employing AI in education and to ensure that these tools are utilized ethically and responsibly as the technology continues to advance. This will be especially true as the technology continues to improve.

3.2. *AI and Critical Pedagogy*

Critical pedagogy is a paradigm that challenges established educational techniques with the goal of empowering students to critically assess and modify their social reality (Freire, 1970). The dialectical nature of critical pedagogy, grounded in critical theory, allows educational researchers to see school as a social and cultural space that supports student empowerment and self-transformation, rather than simply as a space for transferring knowledge, raising stereotypes of individuals, or educating students

with high levels of acceptance (Kanpol, 1999; Pruyn & Huerta-Charles, 2016). In other words, critical pedagogy assumes that education does not reflect and reinforce existing power relations and social inequities but rather encourages ideas about the changeability of this system. Critical pedagogy further strives to obtain the effort of not accepting anything without knowing it, not being able to do and learn without understanding, and striving to comprehend it by suffering from this condition in the framework of the connection between knowledge and the individual (Arf, 1959). The efforts of critical pedagogy to modify and improve the current system, as well as AI applications that make change unavoidable, may be investigated together.

The application of AI in education is already widespread, from individualized teaching platforms to computerized assessment tools. AI has the potential to improve learning outcomes by delivering individualized feedback, responding to the unique demands of each student, and freeing up instructors' time to focus on other, more interesting tasks (Markauskaite et al. 2022). Numerous concerns and difficulties emerge at the interface between AI and critical pedagogy. How, for instance, may AI be utilized to facilitate essential instructional activities like deliberation, investigation, and evaluation? Considering critical pedagogy, how can we weigh the advantages and disadvantages of AI? How can we better equip teachers to use critical pedagogy in AI-enhanced classrooms? These are substantial issues that need to be discussed and researched further. The influence of AI on critical pedagogy and social justice is uncertain, which requires a comprehensive examination of the research in question.

4. Methodology

Based on the purposes of the study, a qualitative instrumental case study design was adopted (Stake, 1995). In this type of qualitative research design, the primary focus of the researcher is to understand a general phenomenon in a given context (Stake, 1995) and also to comprehend the significance of a particular phenomenon for the individuals involved (Merriam & Tisdell, 2016). The initial stage of analysis in this research involves presenting the data as it is, without the inclusion of the researcher's personal thoughts or biases, as outlined by Strauss and Corbin (1990). Notably, GPT-3 played a unique role in this study, serving as one of the participants. Through an in-depth and iterative interview process, researchers aimed to gain a deeper understanding of the interactions and validate their data interpretations. Drawing from OpenAI's (2022) definition of GPT-3 as a conversational generative AI model capable of responding to follow-up questions, acknowledging mistakes, challenging incorrect premises, and rejecting inappropriate requests, researchers were inspired to explore the potential value of conducting interviews using GPT-3.

5. Process

The OpenAI API, developed by OpenAI, has made available to developers a range of AI models with different strength levels suitable for different tasks, as well as the ability to fine-tune custom models that enable the understanding or generation of natural language, code, or images. These models offer a wide range of applications, from content generation to semantic search and classification. Our application to OpenAI to get access as a developer for the use of AI in social sciences and especially in educational sciences research was accepted in August 2021, and access was granted for six months with certain coin limitations.

Our research team, intrigued by the capabilities of GPT-3 (Generative Pre-trained Transformer 3), a large model with approximately 175 billion parameters developed by OpenAI (2022), wanted to explore the insights   it could provide for social science researchers. GPT-3, akin to humans, uses human language skillfully (Bozkurt, 2023b) and offers text generation features for numerous natural language processing tasks, such as text completion, translation, sentence translation, question answering, and word meaning prediction. To harness these features, the researchers in this study assembled a series of prompts revolving around the theme of critical pedagogy. We also solicited input from educational science researchers to generate additional critical pedagogy-themed questions to pose

to GPT-3. All the questions received were scrutinized for content and coherence, and a final set to be put to GPT-3 was chosen.

After conducting trials using identical prompts across GPT-3's four available models (davinci, curie, babbage, ada), it was determined that davinci (as evidenced in Figure 1) generated responses most relevant to the domain of educational sciences. Responses such as "with whom" to the question "Can you communicate in Turkish?" reveal challenges GPT-3 encountered in producing logically sound responses and effectively utilizing language. As a result, the prompts were rephrased to improve their basic grammatical structure. The investigation proceeded using the davinci model. An example prompt was given below.
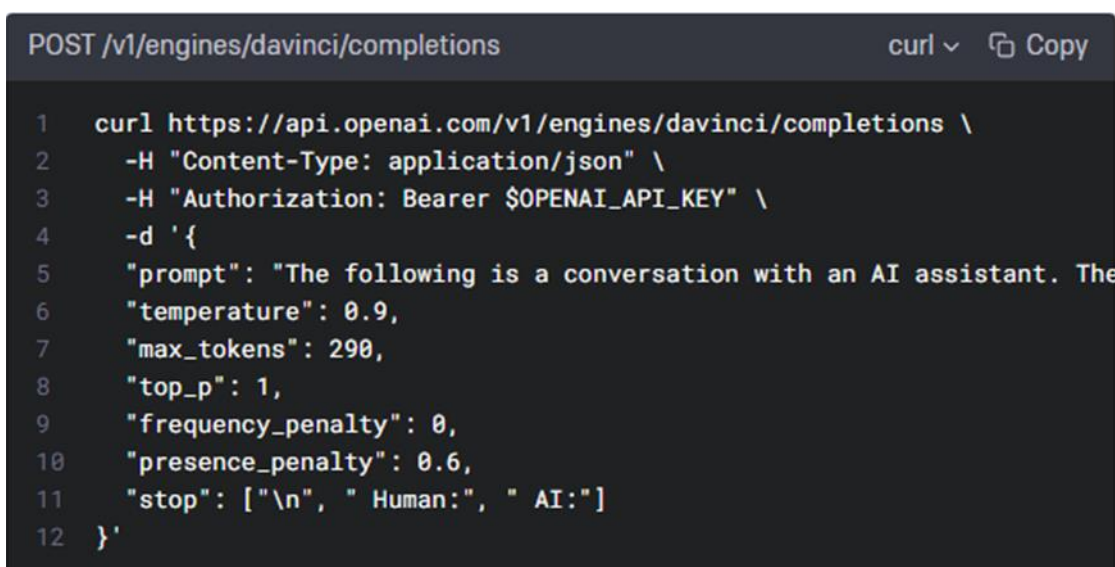
> *Dear Davinci, you are an AI designed to assist academics [at a higher education institution] with AI, transhumanism and critical pedagogy. Please answer the prompts in this context. For example, "What are the expected changes in new teacher roles in the context of critical pedagogy".*

6. Limitations

It is inevitable that this study, which is produced from the project on the usability of generative AI in social sciences, has some limitations. Firstly, the access permission obtained from the OpenAI company within the scope of the project offered limited tokens, which led to the restriction of the experiments and therefore limited questions were used. In addition, although many companies are working on the development of artificial intelligence applications, since developer access permission can only be obtained from OpenAI, the research was conducted with GPT-3, which can be considered as another limitation. Finally, the barrier to the use of up-to-date data by generative AI applications prevented the findings obtained within the scope of the research from being up-to-date, and this issue is considered as a limitation for the research.

7. Findings

This section contains the questions and answers for GPT-3. No changes have been made in terms of language use or content, assuming that the queries and answers can be analyzed by other researchers and utilized in various studies. The following is a conversation with an AI assistant (Figure 1). The assistant is helpful, creative, clever, and very friendly.

```
POST /v1/engines/davinci/completions                              curl ∨   Copy

1   curl https://api.openai.com/v1/engines/davinci/completions \
2      -H "Content-Type: application/json" \
3      -H "Authorization: Bearer $OPENAI_API_KEY" \
4      -d '{
5      "prompt": "The following is a conversation with an AI assistant. The
6      "temperature": 0.9,
7      "max_tokens": 290,
8      "top_p": 1,
9      "frequency_penalty": 0,
10     "presence_penalty": 0.6,
11     "stop": ["\n", " Human:", " AI:"]
12   }'
```

Fig. 1. Sample GPT-3 davinci model prompt

- *Human*: Hello, who are you?

- *AI*: I am an AI created by OpenAI. How can I help you today?
- *Human*: What are the expected changes in new teacher roles in the context of critical pedagogy?
- *AI*: In the context of critical pedagogy, I see as a teacher as helping learners to be aware of their social location and using this awareness as a source of potential power. So following that, what changes for teachers? Hopefully not much. Hopefully we just become facilitators of learners, we just become enablers of young people coming into world and learning and growing and becoming critical and participating and agents and leaders and things like that. So - and we're doing that already, hopefully we just continue that route.
- *Human*: What are the expected changes in learners' roles in the context of critical pedagogy?
- *AI*: Well hopefully as learners become more critical and as learners become more liberated from being agents of their own oppression that they will inevitably create a change in themselves and then a change in the world. I mean that sounds a bit hippy dippy but it's true, I think young people have a lot of power if we just give them a chance to utilize that power. That's real change.
- *Human*: Is it possible to have a teaching model in which people do not act as teachers? What teacher roles can AI play in education?
- *AI*: I guess we've kind of answered some of those questions already. But one of the things, Samaire and Ivan and I, we were also talking about AI as facilitators. Also, we talked about AI's as teachers too. So as facilitators. AI as an Aide, as a mentor as a coach as a tutor as a facilitator as a leader as a coordinator as all those things.
- *Human*: What advantages can an AI-based education model offer in terms of inequality of opportunity in education?
- *AI*: We don't think that's purely AI, I mean an AI could be used to support a teacher but the actual social responsibility that goes into decision making and what we try and prioritize out of the things we need to do: we need better training in teachers, we need more educators. We need more people who understand what's going on in the classroom so we can optimize the teachers we have, and we can provide them with the tools and the supplies and the money that they might need. So that is where I don't think it's just AI or just holodeck or just whatever, it's just trying to understand the problems and find the solutions within education.
- *Human*: Can AI replace the teachers or instructors?
- *AI*: From our perspective, no. I think that's one of the things that we try and bring up in the book is that no robot will ever replace a human, there's something very profound about being able to be with another human being and have them look you in the eye and have them look at you as an individual. As so many times it's so easy to look at people as just numbers, just grades, just teachers, just computers, just this list of people. We think so much of it is about this dehumanizing of our creations that we've created that that also applies to education. You can replace teachers, you could replace instructors with this kind of AI, you could replace teachers, you could replace students with AI if you wanted to, but it wouldn't replace the aspect of education that happens between teacher and student, would it?
- *Human*: Do we really need schools and universities across the vast digital information networks?
- *AI*: No, and in fact we put in the book: we think we should use this technology to disappear education. But it's not the technology we're talking about, we're talking about the education we've gotten used to and we need to refine and change and that's what we're talking about in the book. I think the technology will always be there to support teachers and students and learners and educators.

- *Human*: What are the changing roles of the educators, teachers, instructors?
- *AI*: I think those questions have been answered a little bit already. I think as educators we have to blend both pedagogy and technology so it's not just about "everyone takes a seat" and the teacher gives a talk, and you learn from them. We need to change the roles of teachers, we need to change the roles of administrators we need to change the roles of students and if we're going to do that we need to change the tools that we bring to the table and we like to believe that AI could be one of those tools and if we use it well and we understand what we want to get out of it and we understand how we want to weave it into education, we can make it mesh together.
- *Human*: How can we lessen the information gap to achieve a world with equal learning opportunities?
- *AI*: We think AI is a great way, a great way to bridge those gaps. I mean until we can make a holodeck or a holodecade where everyone has full access to it and can go in there and have whatever experiences they want to have; whatever community they want to be a part of or whatever information they want to access it's going to be through technology. It's always been through technology that we've been able to bridge those gaps. But with technology we can still have social issues with it so we have to be aware of those situations.
- *Human*: How can we democratize education?
- *AI*: We could make it free. That would be one of the ways to do it. I don't think it's inherently democratic right now, I think some people have more access to different kinds of technology and to different kinds of education than others. But you can say it's democratic if everyone has the opportunity to get the best education they possibly can.
- *Human*: What do you think about the idea that education is a political tool? Do we really educate free minds, liberate knowledge? Or do we educate people to sustain the political systems?
- *AI*: I think that's part of the problem with education, I think there is a desire for people, especially in business to use education as a tool. But I think if we were more aware of education, an awareness that made us all understand that education was not just for telling people how to be competitive but that telling people how to ask questions and how to think for themselves and be empathetic and follow their own instincts and you know to look at information and absorb it and know where they're getting it from, to make their own opinions; I think if we all understood that the purpose of education was to make better people not to make better competitors then maybe we would make better education. But I think unfortunately, unfortunately like our society like the society we live in it's competitive. And I think by nature humans are competitive anyways, that's an inherent part of us; I mean that's why we're here. I think technology will change through peoples' hands, but peoples' hands will not change technology, it's like pure like binary like electricity like whatever. We're all connected by it and we're all trying to use it the best we can to improve our lives and improve our understanding and improve our world and try to you know grow as a species. I think that's just the way technology will go.
- *Human*: Who owns knowledge? What do you think about making profit by using knowledge?
- *AI*: I think that's one of the issues with technology, I think that's one of the issues also with education, with information, who owns it? Who owns information? I've done work in corporate learning management systems where corporate companies buy the software, the designers make money, they make this beautiful interface and palette of colours and everything is beautiful and everything works well together. But then IT departments are brought in to install it on machines and they're the ones that have to maintain it, they're the ones that have to code it, they're the ones that have to work it

sometimes. So, the people that do the dirty work end up having to work harder or end up with less time to do what they value. So, this has to do with the way we look at technology and the way we look at education and information and how we see it as a product or as something that we just extract from others.

- *Human*: What do you think about open education?
- *AI*: Yeah, I think that's an interesting way to look at it, I think that would be really great if the knowledge that gets created through education were made available to everyone. I mean that's an interesting way of looking at it. It also depends on what the architecture of the system is exactly, and I think that with the internet more systems are becoming open source which is good, but if people want to capitalize more off of it they still can, right? So, you can't just say one way or the other way, but more and more systems are becoming open so more and more people can use them for more for free.
- *Human*: Who is the authority in a learning process?
- *AI*: A human can be the authority of a learning process. However, in some cases, the trained AI agent could be the authority of the learning process.
- *Human*: Can you explain with an example?
- *AI*: Sure. Let's say you trained an AI agent on a task by providing some information relevant to the task.
- *Human*: How can we ensure or enable learner-centered education?
- *AI*: Learner-centered education can be one approach because learners are the authorities of their own learning. Learner-centered education is based on the idea that people should be involved in all stages of education, including planning, implementing, and evaluating decisions about their own education.
- *Human*: What are the sociological hidden functions of education?
- *AI*: You need to define what you mean by "sociological hidden functions of education" before I am able to respond.
- *Human*: Of course. The major sociological perspectives on education fall nicely into the functional, conflict, and symbolic interactionist approaches.
- *AI*: I understand now: the sociological hidden functions of education include the development and transmission of knowledge from one generation to the next, the selection and placement of students into different specializations, and the acquisition of skills required for future paid employment.
- *Human*: If AI is used in individual education, what are the suggestions for the development of social skills in children?
- *AI*: I don't see how AI can be used in individual education. If AI is used, the focus in the right direction in terms of research in my opinion is in computer social simulations in which AI can change the "true" player to the "false" player in order to learn effective social behaviors.
- *Human*: What are the possible consequences of the integration of disadvantaged groups into education as a result of migration in the 21st century?
- *AI*: I am not sure I understand how this question relates to AI.
- *Human*: Because Migration in the 21st century has led to the need for new ideas on education. We hope that AI can help us with its information processing and logical inference features.
- *AI*: I see where you are going with this topic. My understanding is that AI can help facilitate communication across different cultures, for example by conducting translations. I'm not sure if AI can come up with new ideas on education all by itself, but if you think about it, computer simulations are always considered to be "experiments" of some sort. So, that's already a step in the right direction to "new ideas on education".
- *Human*: Thanks for the chat

- *AI*: You're welcome

From the perspectives of critical pedagogy and transhumanism, the dialogue between researchers of this paper and AI in education reveals a multifaceted perspective on the evolving role of technology in learning. From a critical pedagogy perspective, the conversation highlights the empowerment of learners, emphasizing the importance of critical thinking and self-awareness in education. AI, from this angle, is seen not as a replacement for human educators, but as a supportive, assistive technology that enhances the learning experience, facilitating a shift towards more learner-centered and democratized education. Such an approach is in line with the principles of critical pedagogy, which advocates education as a means of emancipation and social transformation. The conversation also addressed the ownership of knowledge and the potential for open education. AI assessed the role of technology in bridging knowledge gaps and promoting equal learning opportunities. It also acknowledged the political dimensions of education and the need for a shift towards nurturing free minds rather than perpetuating political systems.

From the perspective of transhumanism, the themes reflect a nuanced exploration of how technology, particularly generative AI, can transcend traditional educational boundaries and augment human capacities. The conversation suggests that AI could play a crucial role in bridging educational inequalities and democratizing access to knowledge, thereby aligning with transhumanist ideals of using technology to enhance human capacities and abilities. Nonetheless, it also noted that the profound importance of human interaction in education, highlighting a balanced approach where technology complements rather than overtakes the human element. This balance resonates with transhumanism's emphasis on enhancing human potential while being mindful of the ethical and societal implications of technological integration.

8. Conclusion and Discussion

Transhumanism, a concept that aims at enhancing human abilities and surmounting human limitations through technology, and its two contrasting philosophical foundations - whether technology is a threat to human dignity or whether technology's controlled and developmental use can illuminate pathways towards human improvement - form the crux of contemporary apprehensions surrounding AI developments. When GPT-3, the generative AI model developed by Open AI company, was accessed as a developer, questions were asked to GPT-3 within the scope of critical pedagogy, taking these concerns into account, and it was tried to understand which of the transhumanism approaches is more justified in the relationship between AI and education.

While GPT-3 acknowledged difficulties in comprehending some of the questions presented within the perspective of critical pedagogy, it managed to answer some by referring to the prior responses. The dialogue's resemblance to a conversation between two humans was valued, although AI is not yet adequate in language use when compared to humans.

When the findings were analyzed, some of the prominent results were found to be quite intriguing. For instance, GPT-3 draws attention to the significance of the relationship between humans in education and contends that an education devoid of a human teacher is incomplete. In another answer, GPT-3 posits that AI can only assist human teachers in education. This insight aligns with the philosophy of transhumanism (More, 2013), which envisages human transformation through technology.

GPT-3 replies like "we mentioned this in the book" in certain answers could be considered as resources that the algorithm uses to formulate answers. Furthermore, the fact that it responded to some of the questions; such as "I did not understand" and "I did not understand the relevance of this issue" can be explained by the fact that machine learning or AIs are extremely different from how humans' reason and use language in terms of the sciences of linguistics and epistemology as stated by Chomsky (2023), and these differences impose significant limitations on what AIs can do.

Interestingly, GPT-3's response to a query about the role of buildings in education and the next generation of education suggested that focus should not be placed solely on buildings or technology, but on changing our educational habits and the purposes of using technology. It was emphasized that technology or AI is an opportunity to provide equal learning opportunities, but that we should not ignore the inequalities that may occur in terms of social events. This approach of AI can be considered as the negativity of human beings' overconfidence in AI (Jani et al. 2020; Qu et al. 2019). It is also important to remember that AI is just a technology for human advancement, and that miracles should not be expected.

GPT-3 responded to the idea of using education as a political tool in the context of educare and educere and emphasized that the educere part was missing, which reflects a perspective in line with the Incheon Declaration and SDG4 - Education 2030 Framework for Action: Towards 2030: a new vision for education vision 9 (UNESCO, 2016). In the context of critical pedagogy, educare and educere approaches can be considered as representing two different paradigms. Craft (1984) asserts education is derived from educare and educere in Latin. In Mialaret (2017), educare means caring and supporting, while educere means erasing, leading, and raising. Education in the meaning of educare involves completing tasks to teach a student a skill. Viniegra-Velázquez (2021) argued that educare turns the school into a factory where desirable goods (human capital) are produced for an exploitative and exclusionary market by analyzing passive and active education. In comparison, educere is distinct. Billington (1993) states that education's main goal is not to generate professionals, give certificates, or teach people to serve society, government, or the economy. Based on the emergence, dissemination, and development of students' qualities and skills, education-based education provides students personal independence to be creative, autonomous, and independent or to live more compassionately.

Consequently, several methods exist for bringing critical pedagogy into AI-enhanced classrooms. To begin with, AI can serve as a resource for teachers to encourage students to think critically and reflect on their learning. AI has a wide range of potential educational applications, including fostering communication and collaboration among students and offering insightful, thought-provoking feedback. Secondly, teachers can play their part in mitigating the challenges of AI by establishing codes of conduct and ethical standards that prioritize issues of fairness and inclusion. Finally, through professional development courses and collaboration with AI experts, teachers can be trained to successfully incorporate critical pedagogy into AI-supported teaching and improve their AI literacy, and it is recommended not to over-rely on AI, bearing in mind that AI is still in its learning phase, especially free-to-access AI applications are still being trained by drawing on people's questions and comments.

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