Marx's Critical Reflection on Technology: What Does Artificial Intelligence Education Bring to Us?

Chenyu Luo [1], Kun Yan[1*]

1.Yan'an University，Yan'an City, Shaanxi Province, China, 716000

1* Tangshan Industrial Vocational and Technical College, Tangshan City, Hebei Province, China, 063299

Abstract: Marx believed that technological alienation will bring about human alienation and educational alienation, and technology does not necessarily develop in the direction of goodness. From invention to maturity, technology requires a critical process. Artificial intelligence has triggered a chain reaction in various fields of society, including education. The inherent nature of technological progress and the lagging nature of social adaptation constitute the fundamental contradiction of imbalanced social systems. It is necessary to complete the socialization transformation of technology through ethical criticism of technology. Transferring the field of technological criticism from the "workplace" to the "school field", examining the value, fairness, humanity, responsibility, and reflection of artificial intelligence education, with the aim of preventing the risks of artificial intelligence alienation and promoting the better development of artificial intelligence education.

Keywords: Artificial intelligence education; Technical criticism; Marx

Deep learning has brought another wave to the artificial intelligence industry, and artificial intelligence has become a new field of competition among major countries. Major countries and regions around the world, such as the United States, Europe, and China, have increased their investment in artificial intelligence and have also entered fields closely related to human life.However, AI has also produced many adverse reactions at the ethical level, such as Uber's autonomous vehicle was found innocent after crashing to death in 2018, Google Image software marked black people as "gorillas", Kwai short video intelligent pushed videos of teenage pregnancy, Target Company judged whether customers were pregnant and recommended pregnancy items through data mining, etc. The reality and necessity of technological application are completely different, so it is necessary to regulate the development of technological reality towards goodness through the analysis of the necessity at the ethical level of technology. As the core of the humanistic nature of the educational community, educational ethics has its unique characteristics that distinguish it from other fields. It is necessary to specifically study the ethical norms of artificial intelligence education. However, in the field of education, it seems that the risks of artificial intelligence education have been underestimated, and there is very little comprehensive research on the ethical risks of artificial intelligence education. This article is based on Marxist technology criticism and the theory of comprehensive human development, reflecting on artificial intelligence education, and answering the questions of whether artificial intelligence education should be developed and how to develop it.

1. Based on Marx's critique of technology: human alienation

Marx highly recognized the social value of technology, believing that technology is a productive force that meets human needs, an important driving force for promoting social development, achieving human liberation, and breaking free from material poverty. However, people cannot foresee the practical application of technology, and there is a risk of technological alienation.

Technology is actually non neutral and contains moral values, and technology, including mechanical automation, does not necessarily develop in the direction of goodness.Because technology itself is often influenced by the personal preferences and values of developers, the goal of technology development is often to obtain personal benefits.Therefore, in real society, technology may fundamentally be unfair, discriminatory, and contrary to public interests, and ultimately become a tool and accomplice for capitalists

to exploit workers, which runs counter to the social ideals of Marxist humanism.So even if technology has a positive side in promoting social development, it is necessary to conduct ethical criticism of technology.

2. Based on Marx's critique of technology: the alienation of education

On the other hand, the technological alienation in the era of large machine production has also led to the alienation of education.

Firstly, technological alienation weakens the ability of workers to invest in education. Due to the substitution of workers' skills by machines, skills are useless, which directly extinguishes the enthusiasm of workers' education investment, weakens the motivation of children to extend their education years, and helps to increase the illegal use of child labor. This further intensifies competition in the simple labor market and the depreciation of labor, making it difficult for the working class to accumulate capital with only enough income to make ends meet, Causing them to lose the ability to invest in their own education;

Secondly, technological progress has increased the cost of educational investment, and the process of machines replacing workers' skills follows a pattern from simple to complex. Therefore, if workers are not eliminated by machines, they must continue to invest more in education to master more complex skills that machines cannot replace. This objectively increases the cost of educational investment and raises the threshold for obtaining technical jobs;

Thirdly, technological alienation has made education a tool for maintaining class inequality. The decline in the investment capacity of workers in education and the increase in educational costs have led to unequal access to high-quality educational resources and higher education opportunities for workers and capitalists, forming a de facto monopoly of high-level educational resources by capitalists, and economically suppressing the possibility of the proletariat flowing upwards through education. Ultimately, education became a tool for maintaining class inequality in capitalist society;

Fourth, technological alienation has also led to the alienation of educational content. Technological progress has promoted the differentiation and confrontation between the proletariat and the bourgeoisie. In order to ease class contradictions and break the proletarian revolutionary resistance, the rulers' educational content of the working class is not practical knowledge, but rather to promote moral education and religious education of tolerance and compromise. Instead, education has become a fetter for the ignorant masses to hinder social progress.

3. Critical development is urgently needed for artificial intelligence

In terms of the value of artificial intelligence technology, artificial intelligence helps to meet students' needs for higher education quality and better educational experience, and helps to expand the space for teachers' free development. This fully affirms the value of artificial intelligence education for both students and teachers; At the level of fairness in artificial intelligence, artificial intelligence does not necessarily promote personalized development, and there is a possibility of educational discrimination in both outcome fairness and procedural fairness.In terms of human nature in artificial intelligence education, due to the unequal relationship between humans and robots, humans cannot treat robots as humans. Artificial intelligence education is difficult to achieve human nature education and cannot completely replace the role of teachers; At the level of responsibility in artificial intelligence, it is believed that the legal division of responsibility in artificial intelligence is not clear, and there is a lack of motivation to promote the development of education towards the ultimate good; At the ultimate goal level of artificial intelligence education, artificial intelligence helps to achieve human free and comprehensive development, while also expanding the content of human comprehensive development. In the process of applying artificial intelligence in the field of education, it is necessary to actively promote the deep integration of artificial intelligence and education, clarify the role positioning of teachers and artificial intelligence, achieve complementary advantages between teacher human nature education and machine intelligence education, update the content of general education in the era of intelligence, and promote the comprehensive development of student-teacher dual subjects, while preventing the fairness and responsibility risks of artificial intelligence.

4. Summary and further exploration

To cope with the risks of artificial intelligence and carry out effective educational applications, the following points still need to be noted:Firstly, further strengthen support for the basic research and development of artificial intelligence technology, improve the accuracy of artificial intelligence recognition and decision-making, and avoid similar problems such as labeling "black people" as "chimpanzees" due to immature technology;Secondly, prior to the promotion of technology, it is necessary to do a good job of trial and error, and determine how to improve and whether to promote artificial intelligence technology based on the evaluation of the experimenter;Thirdly, artificial intelligence should be a tool that assists human learning rather than a tool that replaces human learning. The counterproductive effect of speech recognition on reading disabilities proves that replacing human learning as the main body is dangerous;Fourthly, humans should play an indispensable and dominant role in artificial intelligence education, and human-

machine collaboration should not only improve the quality of education but also maintain educational humanity;Fifth, combine relevant knowledge and ethical principles in the field of education with artificial intelligence to guide the development of education towards goodness.

Chenyu Luo and Yan Kun made the same contribution to the article，and both are first authors

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