

## **The Negative Impacts of AI on Education: A Critical Approach and Contemporary Challenges**

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## **Негативното въздействие на AI върху образованието: критичен подход и съвременни предизвикателства**

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### Abstract

We live in an age where artificial intelligence has permeated our daily lives in many ways. One area in which artificial intelligence has penetrated is education. Its rapid development has significantly impacted the field of education, creating new opportunities but also raising serious concerns. This article systematically examines the negative impacts of artificial intelligence on the educational process, focusing on issues such as the decline in critical thinking, students' dependence on algorithmic tools, issues of academic integrity, inequalities in access, ethical issues such as the rise in school bullying and the fostering of empathy, the legal issues these problems entail, and the implications for the role of the teacher. It is truly alarming how much daily life in schools, as well as the out-of-school lives of pupils and teachers, has been affected by artificial intelligence. Through a review of recent literature, we can see that the uncontrolled integration of artificial intelligence is very likely to undermine fundamental pedagogical principles, making a critical and balanced approach necessary.

*Keywords:* artificial intelligence, education, critical thinking, students, teachers, negative consequences

### Резюме

Живеем във време, в което изкуственият интелект е проникнал в ежедневието ни по много начини. Една от областите, в които изкуственият интелект е проникнал, е образованието. Бързото му развитие е оказало значително влияние върху областта на образованието, създавайки нови възможности, но и повдигайки сериозни опасения. Тази статия разглежда отрицателното въздействие на AI върху образователния процес, като се фокусира върху: спад в критичното мислене, зависимост на учениците от алгоритмични инструменти, проблеми с академичната почтеност, неравенства в достъпа, етични въпроси като нарастването на тормоза в училище, правни въпроси, които тези проблеми водят до себе си, последици за ролята на учителя. Наистина тревожно е колко много ежедневието в училищата и извънучилищният живот на учениците и учителите, са засегнати от изкуствения интелект. Чрез преглед на съвременната литература констатираме, че неконтролираната интеграция на изкуствения интелект е много вероятно да подкопае основните педагогически принципи, което прави един критичен и балансиран подход особено необходим.

*Ключови думи:* изкуствен интелект, образование, критично мислене, ученици, учители, отрицателни последици

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**Introduction**

Artificial Intelligence (AI) is one of the most significant technological developments of the 21st century. Furthermore, it has become one of the most commonly used applications in recent years. This is because it offers unlimited possibilities to the user, making it extremely appealing. Looking at the term from a historical perspective, the development of systems based on artificial intelligence begins with narrow artificial intelligence, continues with general artificial intelligence, and finally, we encounter superintelligence, which may well surpass human capabilities in many areas (Saghiri et al., 2022).

The precise definition of the concept of artificial intelligence is a matter of debate, as there are many definitions depending on the field to which it refers. Furthermore, definitions have changed over time due to rapid technological development. The most recent definitions refer to the ‘mimicry of human intelligence’, and this is the most robust definition that comes closest to reality (Kok et al., 2009). This is because the technological achievements adopted in both education and other areas of daily life are characterised by cognitive abilities, learning, adaptability, and decision-making. The initial form of artificial intelligence was computers and related technologies, and gradually, there has been a shift towards online and web-based intelligent educational systems, which will ultimately lead to the use of humanoid robots as well as online chatbots, which will perform the daily tasks of both students and teachers, regardless of whether they are operated by a human or not (Chen et al., 2020).

Artificial intelligence was presented as a weapon in the educational system’s arsenal that would revolutionise the flow of education for the better. The United Arab Emirates is one of the first countries to adopt the widespread use of artificial intelligence in its education system (Al-Bakri, 2021).

Education is considered the sphere of human activity that has two fundamental principles. The first is to help students become active citizens with enhanced critical thinking skills, and to become conscientious citizens and workers in a world dominated by technology, but also to create opportunities for students to advance science in collaboration with artificial intelligence programmes (Mashaqba, 2020).

The use of artificial intelligence in education offers the potential, as mentioned above, to transform the way we teach and learn, as these two aspects are interlinked. This is

because AI programmes can adopt the appropriate content to adapt to the needs of each student, thereby personalising the curriculum. They can automate administrative processes such as marking or recording absences, allowing teachers to have more time to focus on their teaching duties. Furthermore, it enables us to understand how pupils behave by creating behavioural plans, and thereby enabling teachers to identify and resolve any problems they might face at an early stage. It also contributes to improving the quality of education and creating better conditions so that students can benefit from the best possible learning experience (Al-Omari 2021). It also contributes to technological development and research that would otherwise be impossible to develop using traditional methods (Ouyang, Jiao, 2021).

Despite the advantages, the literature highlights growing concerns regarding its implications. According to recent studies, the integration of artificial intelligence into education has taken place at a rapid pace without sufficient prior assessment of its consequences. Issues relating to the protection of privacy and the security of personal data for both pupils and teachers, as data is collected and processed in a single database, equality in education, safeguarding the role of the teacher, preserving traditional teaching professions, incorrect data in programmes, as well as the misinformation they provide, and the rise in violence and the creation of false incriminating evidence, are issues that should concern everyone involved in the field of education.

The aim of this article, therefore, is to analyse in depth the negative impacts of artificial intelligence on education, focusing on five key areas: cognitive effects on students; ethical and social issues; pedagogical challenges; institutional and educational inequalities; and the transformation of the teacher's role.

Of course, it is still unclear whether the role of artificial intelligence in education will be beneficial to society; what is certain is that it will be decisive, whichever perspective one adopts.

### **Theoretical framework**

Artificial intelligence in education has been part of the broader field of educational technology for almost three decades. And now, in the twenty-first century, its gradual use across all levels of education is inevitable. Artificial intelligence systems are based on machine learning algorithms that analyse data and make decisions.

However, the development of artificial intelligence is not always accompanied by a sufficient pedagogical theoretical foundation. Research highlights the 'weak link to *Postmodernism Problems / Проблемы на постмодерността* Vol.16 , No.1 , 2026, ISSN: 1314-3700, <https://pmpjournal.org> <https://doi.org/10.46324/PMP2601128>

pedagogical theories' and the need for a more critical approach; in other words, they should be used in conjunction with evidence-based pedagogical decisions by teachers. At the same time, modern language models (LLMs) and generative pre-trained transformers (GPTs) create new forms of interaction, but introduce risks such as superficial learning, cognitive dependence, misinformation, and a reduction in students' autonomy.

There is significant evidence that many students who are unable to fully grasp the concepts they learn at school may develop a shallow, superficial approach to learning, focusing solely on the superficial characteristics of a learning situation, whilst ignoring the fundamental conceptual characteristics that lead to the acquisition of knowledge. (Chi et al., 1981) And this is one of the key issues currently engaging the research community. This is because there are two types of artificial intelligence in education: educational technologies and technologies designed for wider use, such as the internet. These non-educational AI tools, such as writing assistants (Grammarly), non-educational chatbots (ChatGPT), are being used in educational settings, marking a disruptive shift in the debate about the future of education.

The constant and excessive use of artificial intelligence by students may undermine their core skills, such as critical thinking (Zhai et al., 2024). By using artificial intelligence programmes to generate complete assignments, such as ChatGPT, rather than seeking help, they lose their own critical thinking skills and miss out on learning opportunities. Furthermore, students are unable to ask precise, high-quality questions to ensure that the help they receive is accurate (Aleven et al., 2003; Graesser and Person, 1994). It may simplify their study process, relieving them of the seemingly unnecessary workload that is essential to the educational process and the acquisition of knowledge, but the quality of learning has not improved; rather, it has been accompanied by reduced depth of cognitive processing as well as diminished cognitive outcomes (Bauer et al., 2025).

However, the problems associated with the indiscriminate use of artificial intelligence do not stop at a reduction in students' critical thinking skills. , issues relating to ethics (Liebrenz et al., 2023), privacy, and anxiety have also arisen, which are of concern to the majority of the population (Paul et al., 2023; Salah et al., 2023). With the increasing use of GPT artificial intelligence programmes, there is a growing dependence on artificial intelligence, and this leads, in addition to the above, to a reduction in problem-solving ability, as well as reduced autonomy (Zhang et al., 2024).

Since the introduction of artificial intelligence, plagiarism has become a phenomenon of concern to the educational community. The rise of Gen AI has reignited discussions regarding plagiarism and academic integrity. Most research focuses on the algorithmic detection of AI use rather than on user behaviour, students' ethical awareness, or their attitude towards plagiarism. Uncontrolled use can blur the boundaries between legitimate assistance and inappropriate behaviour, increasing the likelihood of plagiarism and unauthorised reuse of content (Torres – Diaz et al., 2025).

The misuse of artificial intelligence technologies leads to false and unsubstantiated information that may be derived either from fake news or from unauthorised sources. Misinformation can lead to the spread of prejudices that can spread rapidly without any control; this occurs via social media, where many young people readily accept information without question. The result is a decline in trust in the scientific community and in the validity of the answers provided (Ejuchegahi, 2025).

One problem that needs to be addressed is the anxiety felt by many education workers regarding their replacement by artificial intelligence technologies. This is because inexpensive artificial intelligence programmes can replace human staff (Masayuki, 2017).

### **Methodology**

A questionnaire was distributed to both students and the educational community to determine whether there is indeed prejudice in the educational process and, if so, to what extent it affects our daily lives. The question is mainly comprised of multiple-choice questions, and the data collection involved a small sample of 100 people.

The questions asked in the area of education include: To what extent do you think that artificial intelligence will hurt education? Do you think that students are gradually losing their critical thinking skills? To what extent does artificial intelligence specifically affect superficial (shallow) learning? Do you think that artificial intelligence reduces students' motivation to learn independently?

In the area of employment, we included: Do you think that the increasing use of artificial intelligence in schools will lead to job losses in the future?

Regarding trustworthiness and use, the questions were: How trustworthy do you think the information produced by AI systems is? To what extent do students rely on AI to complete their academic work?

The ethics and disinformation question included: How significant are the ethical concerns surrounding the use of AI in data collection? Should stricter regulations be introduced

regarding the use of AI in education? Do you think the spread of fake videos and images will encourage violence and hatred?

### Results

There are widespread opinions that AI is an easy way for students to complete their tasks without much thinking. If they cannot learn how to extract the necessary data from a text, summarize it, or even understand it, then they will lose critical thinking skills, etc. The questions I asked about some of the impacts of AI yielded the following specific results:

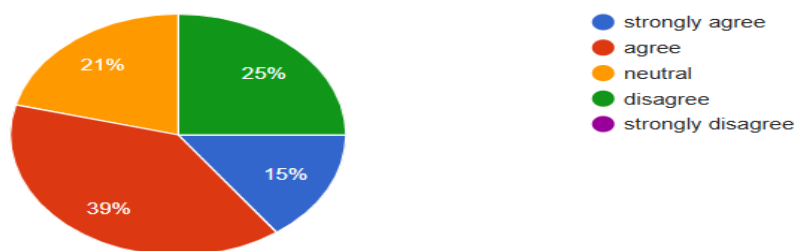
- concerning the negative impact on education in general (Figure 1).

#### Figure 1.

*Degree of conviction about the negative impact of AI on education*

1. To what extent do you believe that artificial intelligence will negatively impact education?

100 responses



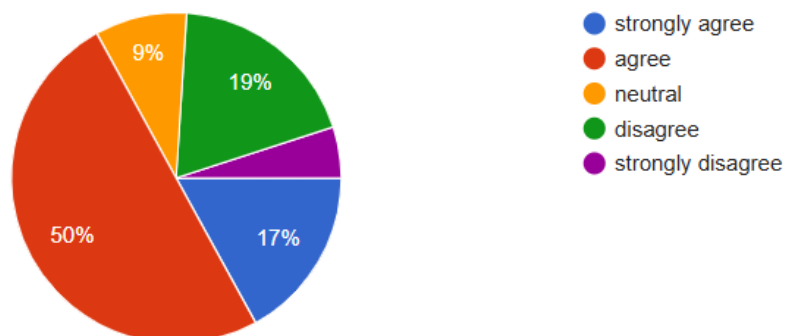
- concerning critical thinking (Figure 2)

#### Figure 2

*Critical thinking*

2. Do you believe that students are gradually losing their critical thinking skills?

100 responses



More than half of the participants (55.4%) believe that students are gradually losing their critical thinking skills. However, a significant proportion of respondents remained neutral, suggesting that whilst this concern is present, there is still uncertainty regarding the extent of the problem.

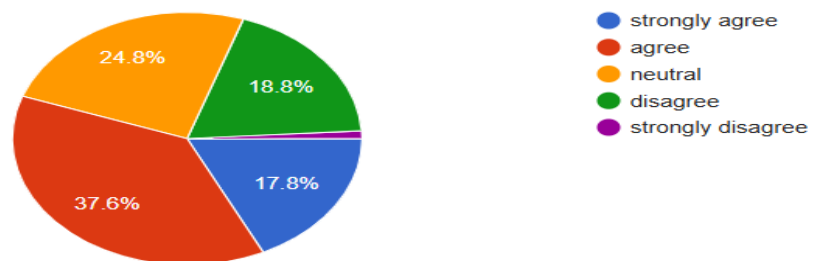
- concerning promoting superficial learning (Figure 3).

### Figure 3

*Use of AI promotes superficial learning*

3. To what extent does the use of artificial intelligence promote superficial (shallow) learning?

101 responses



The results show that a majority of participants (55.4%) believe that the use of artificial intelligence promotes superficial learning. Nevertheless, a notable percentage of respondents either disagreed or remained neutral, indicating that opinions on this issue are somewhat divided.

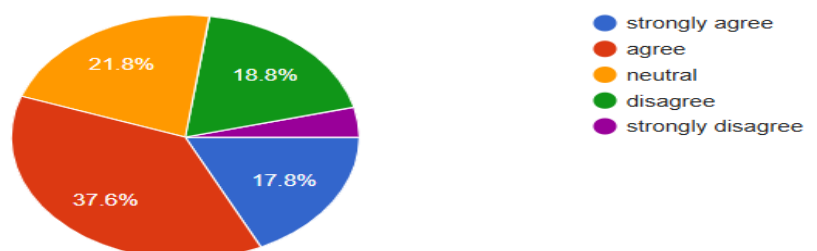
- concerning motivation относно мотивацията to learn independently (Figure 4).

### Figure 4

*Students' motivation to learn independently*

4. Do you believe that artificial intelligence reduces students' motivation to learn independently?

101 responses



More than half of the respondents (54.4%) believe that artificial intelligence reduces students' motivation to learn independently. However, a considerable percentage remained neutral, indicating uncertainty about whether AI truly affects students' willingness to engage in independent learning.

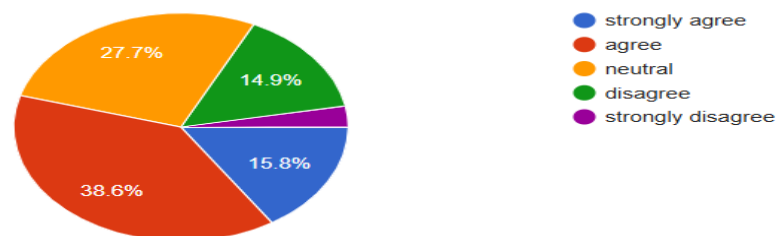
-- concerning job losses (Figure 5).

### Figure 5

*Job losses.*

5. Do you think that the increasing use of artificial intelligence in schools will lead to job losses in the future?

101 responses



The findings show that a large majority of participants (67%) believe that the increasing use of artificial intelligence will result in job losses. Only a small percentage disagreed, whilst very few remained neutral, indicating a strong and widely shared concern about the future of employment.

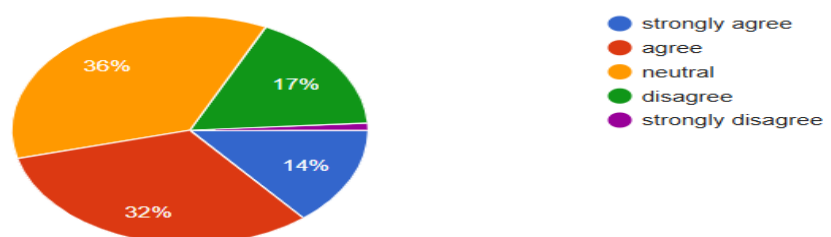
-- concerning reliability of information (Figure 6)

### Figure 6

*Reliability of information*

6. How reliable do you consider the information generated by artificial intelligence systems?

100 responses



The findings reveal that students are uncertain about the reliability of information generated by artificial intelligence. Although 46% consider it reliable, a significant 36% remained neutral, suggesting hesitation and a lack of full trust in AI-generated content.

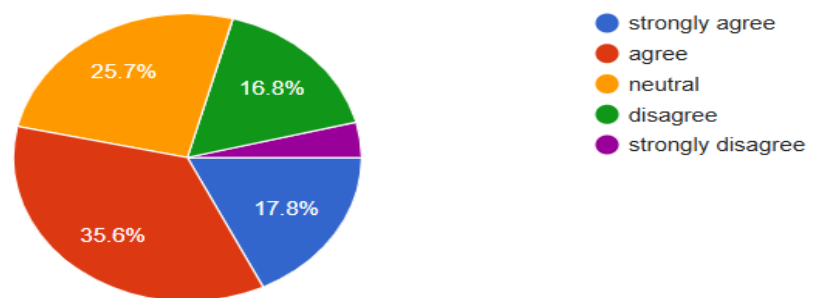
- concerning completing academic work (Figure 7)

### Figure 7

#### *Completing academic work*

7. To what extent do students rely on artificial intelligence for completing their academic work?

101 responses



The results indicate that more than half of the participants (53.4%) believe that students rely on artificial intelligence to complete their academic work. However, a significant percentage remained neutral, suggesting that whilst this trend is noticeable, it is not universally acknowledged.

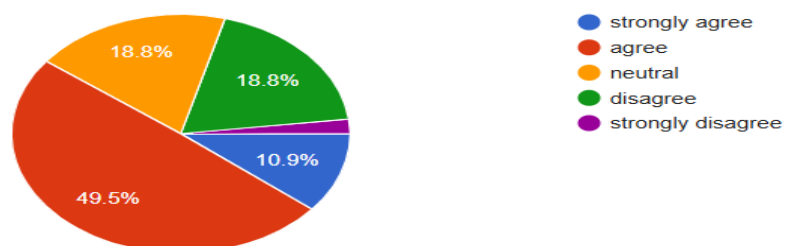
- concerning data collection (Figure 8)

### Figure 8

#### *Data collection*

8. How significant are the ethical concerns related to the use of artificial intelligence in data collection?

101 responses



The results show that a majority of respondents (60.4%) consider ethical concerns related to artificial intelligence, particularly in data collection, to be significant. However, a notable proportion of participants either disagreed or remained neutral, indicating that awareness of these issues is present but not universal.

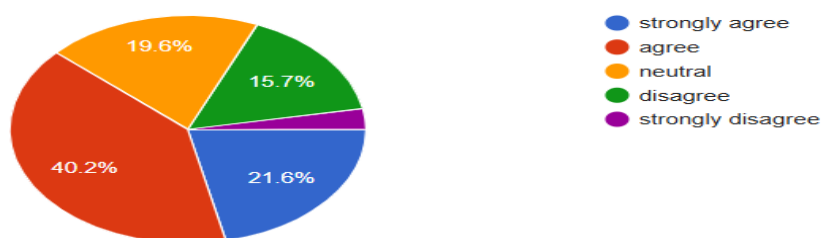
- concerning stricter regulations (Figure 9)

### Figure 9

*Stricter regulations*

9. Should stricter regulations be implemented regarding the use of artificial intelligence in education?

102 responses



A clear majority of participants (61.8%) believe that stricter regulations should be implemented regarding the use of artificial intelligence in education. This finding reflects a strong desire for control and guidance, likely due to concerns about its impact on learning, ethics, and academic integrity.

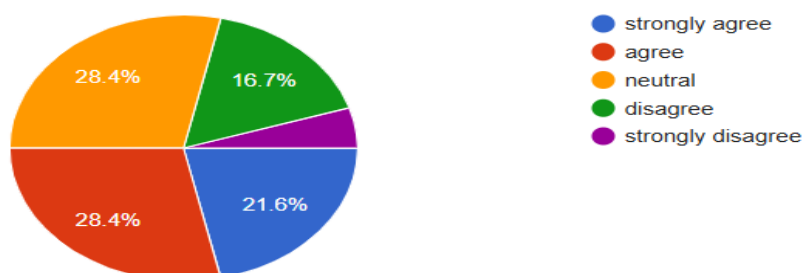
--concerning the spread of fake (Figure 10)

### Figure 10

*Spread of fake videos and images*

10. Do you think that spread of fake videos and images will encourage violence and hatred?

102 responses



The results indicate that half of the participants believe that the spread of fake videos and images may encourage violence and hatred. However, a significant proportion of respondents remained neutral, suggesting uncertainty about the broader social impact of AI-generated content.

### **Discussion**

The results of the survey indicate that students generally adopt a cautious attitude towards the use of artificial intelligence in education. Whilst several respondents acknowledge its benefits, such as saving time and providing quick solutions, a significant proportion express concerns about its negative impact. Many participants believe that AI can reduce critical thinking, limit originality, and encourage superficial learning. Furthermore, several responses highlight the risk of over-reliance on technology and the importance of ethical use. Overall, it can be concluded that although artificial intelligence is a valuable educational tool, its excessive or improper use may have negative consequences for students.

Artificial intelligence has become an integral part of modern education, offering students quick access to information and assistance with academic tasks. However, its increasing use has raised important questions regarding its impact on learning, critical thinking, and society as a whole.

The findings reveal that more than half of the participants believe that artificial intelligence may negatively affect education. Although this suggests a generally cautious attitude, a significant proportion of respondents expressed uncertainty, indicating that opinions on this issue are not entirely fixed. At the same time, concerns about the future of employment appear to be stronger, as 67% of participants believe that the growing use of artificial intelligence will lead to job losses.

Another important finding relates to students' cognitive skills. A majority of respondents (55.4%) believe that students are gradually losing their critical thinking abilities. Similarly, the same percentage considers that artificial intelligence promotes superficial or shallow learning. These results suggest that many students associate the use of AI with reduced intellectual engagement and a shift towards more passive forms of learning.

In addition, more than half of the participants (54.4%) believe that artificial intelligence reduces students' motivation to learn independently. This is further supported by the finding that 53.4% think that students rely on AI to complete their academic work.

Together, these results indicate a growing dependence on technology, which may limit students' ability to develop essential academic skills.

When it comes to the reliability of artificial intelligence, the results are less clear. Although 46% of participants consider AI-generated information to be reliable, a significant 36% remained neutral. This suggests that students use AI tools whilst still feeling uncertain about their accuracy, highlighting the need for critical evaluation of information.

Ethical concerns also play a major role in shaping students' attitudes. A majority of respondents (60.4%) consider issues related to data collection and privacy to be important. Furthermore, 61.8% believe that stricter regulations should be implemented regarding the use of artificial intelligence in education. These findings reflect a clear demand for responsible and controlled use of technology.

Finally, the survey examined the social impact of artificial intelligence, particularly in relation to misinformation. Half of the participants (50%) believe that the spread of fake videos and images may encourage violence and hatred. However, a large percentage remained neutral, suggesting that the long-term consequences of such technologies are not yet fully understood.

### **Conclusion**

In conclusion, the results of the survey indicate that students hold a cautious and often critical view of artificial intelligence. Whilst they recognise its benefits, they also express serious concerns about its impact on learning, critical thinking, and ethical issues. Therefore, it can be argued that artificial intelligence should be used as a supportive educational tool rather than a substitute for independent thinking and effort.

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