



THE PSYCHOLOGICAL IMPACT OF ARTIFICIAL INTELLIGENCE ON THE MENTAL HEALTH OF STUDENTS: COGNITIVE RISKS AND OPPORTUNITIES FOR SELF-REGULATION

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Article history:

Received: 30th March 2026

Accepted: 28th April, 2026

Abstract:

This article analyzes the psychological impact of artificial intelligence technologies on the mental health of young students. The study highlights cognitive risks, including cognitive dependence, decreased attention, impaired critical thinking, and information overload. It also examines the psychological stress and anxiety that arise during the use of artificial intelligence. The article scientifically substantiates the possibilities of reducing these risks by developing students' self-regulation skills. The results of the study indicate the need for rational use of digital technologies in modern education.

Keywords: artificial intelligence, mental health, young students, cognitive risk, cognitive addiction, attention, critical thinking, psychological stress, self-regulation, digital education.

In recent years, the rapid development of artificial intelligence technologies has a significant impact on the education system and the life of students and young people. Applications based on artificial intelligence, virtual assistants and automated learning platforms, while facilitating the process of learning, also create new psychological problems. Mental health, cognitive processes and self-management skills of students are especially important in this process [3].

Artificial intelligence (AI) technologies are developing in direct connection with human cognitive processes[2]. Cognitive processes are understood as human mental activities such as perception, concentration, memory, thinking, imagination, and decision-making. Artificial intelligence is a technological system aimed at modeling, facilitating, or partially automating these processes.

In the educational process, artificial intelligence tools have a significant impact on the mechanisms of students' information reception and processing. For example, AI-based platforms facilitate the cognitive process by simplifying the presentation of complex information, providing quick answers, and forming an individual learning path[7]. This reduces the cognitive load and allows the student to focus on understanding and analysis.

However, along with these advantages of artificial intelligence, there are also some negative aspects related to cognitive processes. For example, excessive reliance on ready-made answers can lead to a weakening of independent thinking.[4] This situation reduces the active functioning of memory and analytical thinking, as the brain begins to rely on an external source instead of solving the problem independently.

Also, as AI provides quick and accurate answers, the human brain's ability to consistently analyze problem situations is reduced. As a result, higher-level cognitive skills such as deep thinking and determining cause-and-effect relationships may be slow to develop[8]. This leads to a decrease in critical thinking during the learning process.

Additionally, AI can present a large amount of information in a short period of time, leading to frequent attentional breaks.[6] Students may experience a loss of concentration as they work with multiple sources at the same time. This is known as cognitive overload, which can also reduce memory performance.

At the same time, AI can also serve as a positive factor in developing cognitive processes. It supports the thinking process by visualizing information, explaining complex concepts, and personalizing learning materials. [1] When used correctly, AI can develop critical thinking, problem-solving, and decision-making skills.

In conclusion, the relationship between artificial intelligence and cognitive processes is bidirectional, involving both positive and negative effects. The rational use of these technologies supports cognitive development, while excessive and uncontrolled use can lead to a decline in mental performance.

The widespread introduction of artificial intelligence technologies into the educational process, while creating a number of conveniences for young students, also poses significant cognitive risks.[4] Cognitive risks are understood as disruptions or declines in a person's thinking, memory, concentration, and information processing processes.

One of the main cognitive risks is cognitive addiction. A student can get used to getting ready answers from artificial intelligence instead of solving complex tasks independently. As a result, the ability to analyze problems and make independent decisions gradually weakens. This situation also leads to a decrease in creative thinking in the long run.

Another important risk is the inability to critically evaluate information. The information provided by artificial intelligence is not always complete or absolutely correct[3]. If a student accepts this information without checking it, incorrect knowledge can be formed and errors can be reinforced. This negatively affects the quality of scientific thinking.

Stability of attention and attention is also included among cognitive risks. Artificial intelligence and digital technologies are characterized by rapid information exchange, which keeps the brain in a state of constant stimulation [6]. As a result, it becomes difficult for students to concentrate on one point, they get tired quickly and their thoughts are divided.

Another significant risk is memory loss.[7] Frequent use of ready-made information reduces the brain's ability to process and retain information deeply, which can negatively affect the effectiveness of long-term memory.

Another cognitive risk is "cognitive overload." [3] Taking in too much information at once puts stress on the brain, slowing down the process of analysis and decision-making.

In conclusion, the uncontrolled use of artificial intelligence can negatively affect a number of important aspects of cognitive processes. Therefore, it is important to manage its impact, develop critical thinking and maintain independent learning skills.

The widespread use of artificial intelligence technologies is having a significant impact on the mental health of young students. Mental health includes a person's emotional stability, stress resistance, level of self-awareness, and ability to social adapt[5]. Artificial intelligence appears to be a factor that affects these psychological processes both positively and negatively.

On the positive side, AI-based learning platforms can ease the learning process for students and help reduce stress levels. Getting quick help with understanding complex topics, individualized approach and tailored learning materials can boost students' confidence and reduce learning anxiety.

However, excessive use of AI can also have negative effects on mental health.[2] Constant exposure to digital environments, the desire for quick results, and the increased flow of information can lead to psychological stress and fatigue. In these situations, students are more likely to experience emotional instability, irritability, and decreased motivation.

Continuous exposure to AI also increases the risk of social isolation.[8] If a student relies more on virtual assistants than on real-life interactions, this can lead to a decline in social skills and increased feelings of loneliness. Prolonged social isolation can also lead to the development of depressive states.

Another important aspect is the change in self-confidence. Quickly reaching ready-made solutions with the help of artificial intelligence can create internal insecurity in students, saying "I can't do it on my own." This leads to a decrease in academic motivation and low self-esteem.

However, in some cases, AI can also serve as a stress management and emotional support tool. For example, it can relieve mental pressure by organizing information, planning time, and reducing study load.

Self-regulation skills are essential for the healthy use of AI.[1] Students need to manage their time, set boundaries for their use of technology, and develop independent thinking.

First of all, it is necessary to formulate the principle of intended use. Artificial intelligence tools should be used as an assistant, but not as a replacement for the main thinking process.

Secondly, it is important to develop critical thinking. The student must have the ability to verify any information provided by artificial intelligence and compare it with other sources.

Third, following the rules of digital hygiene, i.e. limiting the time spent using technology and maintaining a rest regimen, helps strengthen mental health.

Artificial intelligence, while creating great opportunities in the lives of young students, also has a significant impact on their cognitive processes and mental health. This impact is not always positive, as excessive use poses risks such as cognitive dependence, decreased attention, and psychological stress. Therefore, the conscious, normative, and purposeful use of artificial intelligence, as well as the development of self-regulation skills, is one of the important requirements of the modern educational process.

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