

**Изкуственият интелект в българското образование:
преглед на актуалните политики и предизвикателства**
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**Artificial Intelligence in Bulgarian Education:
Overview of Current Policies and Challenges**

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Abstract:

Artificial Intelligence (AI) is developing extremely rapidly and it is in focus both for users and the Ministry of Education and Science, which actively implements policies for its integration into the educational process. The ministry's aim is to provide training and explanatory programs. Recently, guidelines for increased awareness regarding the use of AI have been distributed to educational institutions. There are ongoing projects actively working on the adoption and proper application of new technologies by teachers and students. Additionally, UNESCO's first global guidance on Generative AI in education is available to assist countries in immediate actions and long-term policy planning regarding AI. The current report also examines the first Bulgarian book on AI in education - a guide for teachers, as well as insights on this topical issue from proven professionals. Attention is drawn to the results of several national and global surveys regarding attitudes towards the introduction and use of AI in classrooms.

Keywords: artificial intelligence, regulation, education, learning

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INTRODUCTION

Artificial intelligence (AI) technologies are becoming increasingly integrated into our daily lives and education systems around the world. The drive for continuous development and improvement in humans makes this process irreversible. Organizations such as UNESCO [11], along with many governments, including the Bulgarian, recognize the importance of the controlled and guided introduction of the use of AI in the education system. In this context, the Bulgarian Ministry of Education and Science [9] has published specific guidelines to support teachers and students in their work with AI. Recently, the first book with synthesized content and practical guidelines written by a Bulgarian teacher was published. Research on the perception and readiness to use AI in the learning process reveals clear differences in perceptions and readiness between generations, as well as the level of awareness among teachers regarding new technologies.

Artificial Intelligence in Bulgarian Education

The introduction of AI into the world education process started in the 1970s. Since then, it has evolved into a variety of areas designed to support student learning and perception, teaching and assessment by teachers, and even improve the management of educational institutions. In 2021, UNESCO predicts that the global market for AI applications for the education system will be approximately 6 billion [6]. This forecast is proving accurate and according to AI in Education Global Market Report 2024 [1], by 2028, the global market will grow to \$21.13 billion. The data shows that AI is becoming

increasingly popular in the education process and will provide more opportunities. With free access to this new technology, and given the opportunities but also the risks it brings, new regulations and a long-term vision for its use are required.

Figure 1 shows the most important documents published in the period 2019-2024 related to the use of AI in education.

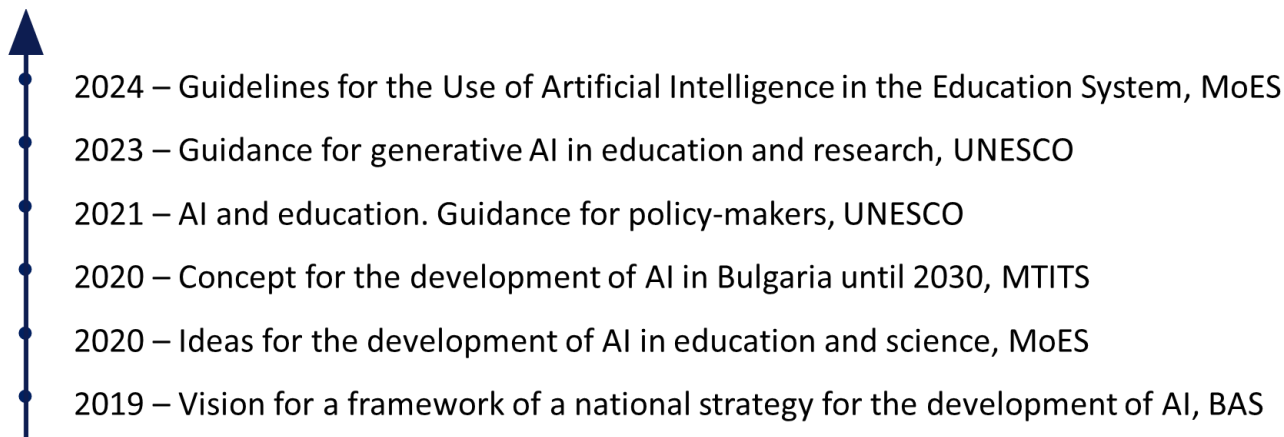


Fig. 1. Documents published in the period 2019-2024 related to the use of AI in education

In its report [3] published at the end of 2023, UNESCO presents its first global guidance on AI in education. It aims to support countries in implementing immediate actions and planning long-term policies, while promoting the development of human capacity and technology based on a humanistic vision.

The guide highlights the key steps for regulating AI in education and provides the following key points:

- Clarification of what constitutes generative AI;
- Risks and benefits of AI - how it can be useful for education, but also challenges, such as insufficient regulation of its use;
- Regulatory steps for AI, including privacy and ethics;
- Encouraging creative use of AI and ideas for its application.

UNESCO's report targets policy makers and educational institutions, assessing benefits and risks, including inequality and cultural diversity.

The Bulgarian Ministry of Education and Science (MoES) has identified the rapid development of AI as well as its accessibility by students and teachers. In order to raise awareness and provide a vision for the proper and ethical use of AI in the learning process, in January 2024, the MoES issued and disseminated to educational institutions "Guidelines for the Use of Artificial Intelligence in the Education System" [4]. The document is seen as a first step in a long-running process and is a necessary and timely measure, as students and teachers already have access to AI and there are numerous technologies integrating AI into their systems.

This paper highlights that despite the great potential of AI, it cannot replace skills and should be used as a supporting tool. The focus is on the use of AI in the learning process as well as for school management and administration. It provides examples of teachers and students using AI, as well as information about ChatGPT and how

Bulgarian teachers can use it. It informs about what AI is and debunks some of the myths about it that concern the possibility of replacing the teacher with the machine.

The guidelines recommend that schools should be guided by the following seven principles when working with AI:

- Using AI in the learning process helps all students achieve their educational goals.
- The use of AI complies with state laws and school regulations.
- Improve the competencies and digital literacy of teachers and students to use AI properly in the learning process.
- Balanced integration of AI tools in the learning process.
- Educational integrity and the use of AI to improve education.
- The importance of human factors in decision making and critical thinking development when using AI tools.
- Regular evaluation of the use of AI.

The guidance also offers five strategies that school leaders can implement to successfully develop a culture of new technologies. These include training, encouragement to explore new developments, showing good examples, organising talks and discussions, establishing clear rules and regulations, and involving parents in the process.

The MoES also provides guidance to streamline various processes related to school administration, such as improving communication, assisting with scheduling, etc.

For successful implementation of AI in schools, it is essential to study the attitudes of teachers as their support and understanding is key. This also helps to identify areas of focus to ease the transition.

In October 2023, Forbes Advisor [8] conducted a survey in the United States, in which 500 teachers participated. The results of the survey showed that over 50% of the respondents believe that AI will improve the education process, while only one in five believe that the effect could be negative. It is also evident that younger teachers are more likely to use AI, with those under the age of 26 having the highest levels of usage.

A survey conducted by the Education Without Backpacks Association [7] on the territory of Bulgaria in December 2023 says that 72% of teachers still do not use AI in their practice, while only less than 3% use it every day. Nationally, another survey conducted by Trend in June 2023 shows that 63% of Bulgarians say they do not know what AI is. It is also noticeable that the young are the most positive, while the negative attitude increases with age. This is important, considering that according to the National Statistical Institute [5, 10], by 2023, out of 55 472 teaching staff, 36 531 are over 49 years old, which represents more than 65%, and 7782 are 60 years old and older.

Programmes for the introduction of AI in education must be adapted to the current state of the education system and take into account the fact that no formal survey has yet been conducted on not the awareness but the readiness and willingness to improve and develop teaching skills in line with new technologies.

Contrary to the results of the surveys, a young teacher from the town of Svishtov, winner of numerous awards, including "Best Young Digital Marketer" in the field of video marketing, author and host of podcasts on education, published the first Bulgarian book "AI in Education - a guide for teachers" [2]. The author recognizes the risks, but also

sees the huge potential of AI. The book gives recommendations on how AI can be applied in the classroom, practical examples, how to use it in school and how teachers can make their job easier. Many concrete examples of the applicability of AI around the world and at home are presented and over 30 platforms are recommended, divided by discipline. The book is gaining in popularity and the author has been a guest at numerous seminars and a panellist in discussions on the topic. Her proven contribution to the education and IT sector did not go unnoticed and she won the WomenInTech 2023 award for her overall contribution to the IT sector.

CONCLUSIONS

The inclusion of artificial intelligence in the education system is a trend that promises impressive results in the educational process. Despite its potential, the implementation of this technology also entails certain risks. In order to ensure its successful implementation, it is essential to take an approach that includes an understanding of the specificities of different educational contexts and to build policies that promote teacher training and practice.

As the poet William Yeats said, "Education is not the filling of a pail, but the lighting of a fire." This statement can be interpreted for the purposes of this report, emphasising that teachers have a commitment to continuously improve and update their skills and development in order to ignite a passion for knowledge and curiosity in their students by setting their own example.

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