

МБОУ «СШ №25» Г. СМОЛЕНСКА

Командный конкурс эссе
«Единство в различии»

Исследовательская работа (эссе)

**«ТЕНДЕНЦИИ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ОБРАЗОВАНИИ:
ВОЗМОЖНОСТИ И РИСКИ. ЗАМЕНА УЧИТЕЛЕЙ ИЛИ ПОМОЩЬ?»**

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Municipal budgetary general education institution «Secondary General School
№ 25» Smolensk

A team international essay contest in foreign languages

**«Unity in Diversity: Russia and English-Speaking World.
Time for Equal Opportunities»**

Research work (essay)

**«ARTIFICIAL INTELLIGENCE TRENDS IN EDUCATION:
OPPORTUNITIES AND RISKS. TEACHER REPLACEMENT OR
ASSISTANCE?»**

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Thesis plan

- 1. We think that artificial intelligence can't replace teachers.*
- 2. Robots have already been introduced to teachers, but this is not so common.*
- 3. Artificial intelligence in the field of education has great prospects.*

Introduction

It can be assumed that robots can replace teachers because now there is a trend in the development of artificial intelligence, which with the help of machine learning can absorb a huge amount of information and process it. The most important skill beyond the control of a robot is critical thinking, that is, a certain system of judgements, with the analysis of things and events, with the formulation of reasonable conclusions and the ability to distinguish truth from fiction, even very convincingly and beautifully packaged. Critical thinking allows you to make assessments, interpretations, and correctly apply the results to situations and problems. Critical thinking is one of the most important skills these days, which requires constant development from children and adults. Robots cannot be creative. It is impossible to replace those areas of human life where there is at least a drop of creativity, because the creative process cannot be automated. This means that the joint creativity of the teacher and students will remain a process of interaction between people, not people and machines. Joint creativity, joint activities are a great way to unite adults (family and school) for the sake of children. It is impossible to program everything related to creativity and creative industries. Artistry, curiosity, and imagination are qualities unique to humans, and they are important components of the educational process. And with the development of technology, more and more attention will be paid to the development of creativity. Communication skills (skills of high-quality oral and written communication, the ability to speak publicly and listen attentively) only humans can teach, not robots. Let's take the example of language learning: with all the variety of existing resources, conversational speech can be trained only with a human partner, connecting elements of non-verbal communication that are available only to people. Just because in practice, in life, you will use it with the same exact human partner.

How robots and AI are already being used

In 2015, Tomsk Polytechnic University announced the creation of a robot teacher. It was made by university students. It was claimed that the robot could be used for training in mathematics, physics, chemistry and computer science. It could be controlled using a smartphone: a human teacher set the topic of the lesson, and the robot retold the theory to the students, tested their knowledge with tests, gave a practical task and even sometimes acted as the object of those tasks. For example, when it was necessary to find a nighttime energy source for a solar-powered rover, the robot was both a teacher and a rover. Teachers from Tomsk schools and the Lyceum at TPU helped to adapt the robot teacher - the developers wanted people of any age to use it. Tomsk teachers also developed lessons for the robot. The robot conducted its first lessons in September 2016. In the same year, students from the IT Lyceum of Kazan Federal University met another robot teacher. The robot was developed by the Russian company Android Technology, and was programmed by KFU employees. The car was named EVA — like the heroine of the famous cartoon "WALL-E". EVA spent the first lesson with a computer science teacher, and then she was used in mathematics, physics, computer science, and chemistry classes in the seventh and ninth grades. EVA could move around the classroom, chat with the guys, keep an eye on them during the tests so that they wouldn't cheat, and even joke. Practically nothing is known about the further fate of both Tomsk and Kazan robots. Regardless of the success (or lack thereof) of "university" robots, private companies continued to develop "teachers" in Russia. For example, they are now produced by Promobot company from Perm. According to the developers, their robot teacher combines several roles at once. "He can communicate with people, answer questions, consult, broadcast various materials in his display and complement the teacher's process. Delivering content, playing lectures, and pronouncing the same text phrase is a routine process that a robot can take over. A laboratory case has also been implemented on its basis, which allows

conducting laboratory work on robotics. In this way, the robot entertains students, helps teachers and is equipment for laboratory work," said Oleg Kivokurtsev, the founder and Development Director of Promobot.

The safety of artificial intelligence and robots

In the article "Humanoid robots as teachers and the proposed code of their use", researchers from Durham University (UK) Douglas and Lynn Newton identify three risk zones that the use of robots in education may entail.

1. Data about people

In order for robots, as well as any other computer programs, to give feedback to students or, for example, accept and analyse their answers, they need to analyse data about these students. In theory, after some time, robots will be able to create full-fledged profiles of their "human wards", accumulating data about each of them. This information must be stored somewhere and protected from access by third parties. A human teacher, of course, also knows a lot about his students, but you can't get into his head, but a robot teacher can be hacked.

Here is another problematic question that remains unanswered so far: what if the robot incorrectly evaluates such data? Who will be responsible for the consequences — its manufacturer, teacher or school?

2. Cultural characteristics

Not every robot behaves "just like a human", but a robot always reflects the values of its developers. And values can vary depending on mentality, culture, and much more. The authors of the article believe that it is almost impossible to completely "depersonalize" a robot, and even the most innocent manifestations of one culture may be considered unacceptable in another. China is given as an example: there, it is allowed to hug a teacher as a sign of appreciation or gratitude, but in some countries this may be perceived quite differently.

3. Behaviour and communication

No matter how far technology has gone, robots do not communicate in the same way as humans yet. At the same time, according to a study from Australia, children who communicated with the robot began to partially reproduce the manner of its communication. In another study mentioned by Douglas and Lynn Newton, it turned out that children perceived the robot as a human being — they wanted to make him a friend and were even ready to trust him with their secrets.

In some cases — for example, to help children with autism spectrum disorders — it is even useful that robots do not show vivid emotions. But the constant communication of normotopic children with robots can potentially lead to problems, the authors of the article fear.

Conclusion

"Robots — they don't get tired, they remember all the material, they don't have a preconceived attitude towards students, they just execute scripts. But they do not have creativity and consciousness, so they cannot be mentors for students. Robots are just a tool for reproducing content, but they will not be able to add something from themselves or share information mentally," commented Oleg Kivokurtsev.

Douglas and Lynn Newton believe that in the future, teachers may indeed have to coexist with robots. Then, of course, people will need to adapt. Moreover, Russian specialists in the field of education are already having similar ideas without any robots.

Experts note that when many professional areas are automated, teachers will focus on developing students' soft skills - in particular, creativity and critical thinking. For this, teachers themselves may need additional training.

Also we asked the ChatGPT a question and that's what it answered:

The question of whether robots and artificial intelligence (AI) will replace teachers is a complex and nuanced one. While AI and automation have the potential to revolutionize education in many ways, completely replacing human teachers is unlikely, at least in the foreseeable future. Here are a few reasons why:

- **Emotional Intelligence and Social Interaction:** One of the key roles of teachers is not just to impart knowledge, but also to provide emotional support, encouragement, and personalized guidance to students. AI and robots, while capable of delivering information and even some level of personalized learning, lack the emotional intelligence and social skills necessary for effective teaching and mentorship.
- **Complexity of Learning:** Human teachers can adapt their teaching strategies based on real-time feedback and adjust their approach to meet the diverse needs of their students. AI and robots may struggle to provide the same level of adaptability and creativity in teaching.
- **Ethical and Cultural Considerations:** Education is deeply influenced by cultural, ethical, and societal values. Human teachers play a crucial role in fostering values such as empathy, respect, and tolerance, which are difficult to program into AI systems.

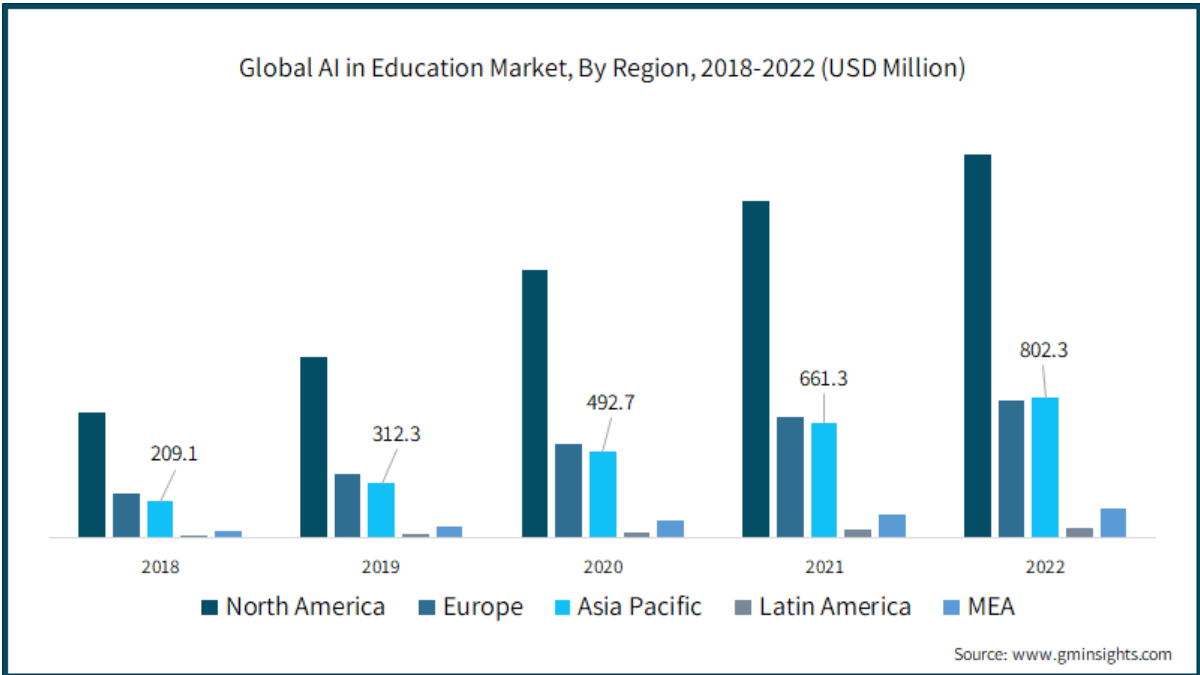
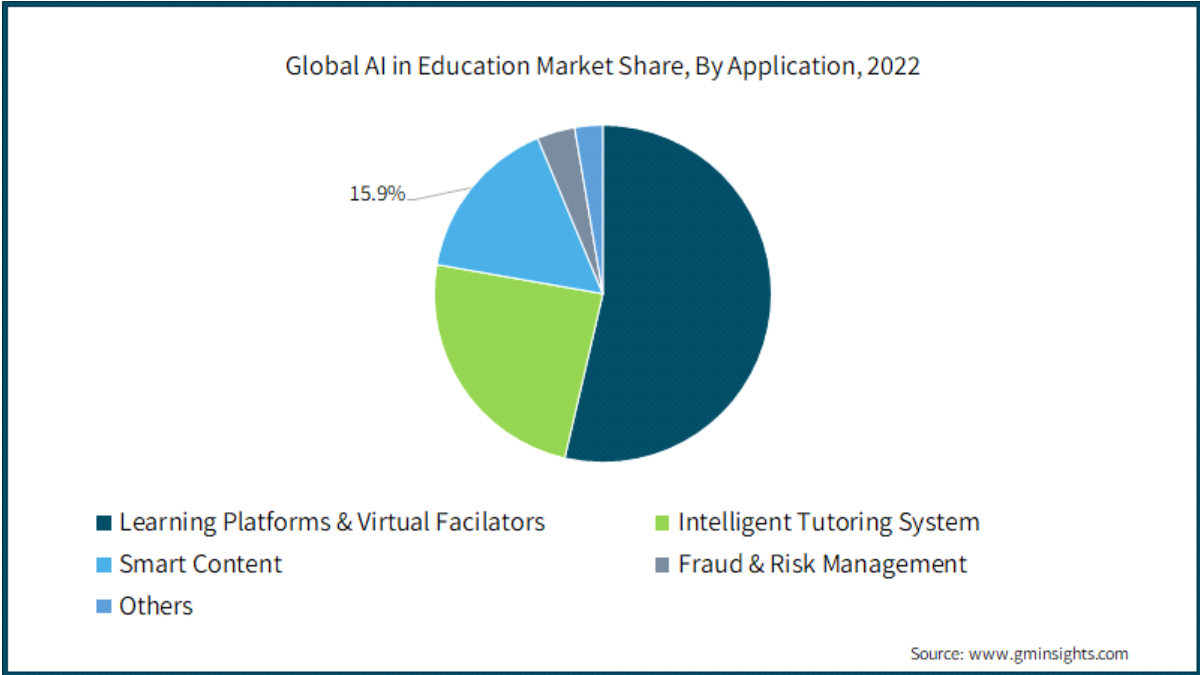
However, AI and technology can certainly complement the role of teachers in various ways:

- Personalized Learning;
- Data Analysis and Insights;
- Enhanced Resource Accessibility.

The future of education will likely involve a symbiotic relationship between human teachers and AI-driven tools, with each complementing the strengths of the other.

Appendix 1

Images



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