What are the negative effects of AI on education?

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Abstract

This research aims to investigate how the development of artificial intelligence affects the education system and students. By using the qualitative data collection method, including surveys among NIS students, the study will explore the areas where AI has a significant impact and how it changes the skills of users, especially adolescents. The research will provide potential solutions to the problem and platforms that will help to decrease risks of AI usage, by exploring the experiences of other countries, researchers and students.

Key words: artificial intelligence, solutions, platforms, education system, students, risks, skills.

Бұл зерттеу жасанды интеллекттің дамуы білім беру жүйесі мен оқушыларға қалай әсер ететінін зерттеуге бағытталған. Сандық деректерді жинау әдісін, соның ішінде Назарбаев Зияткерлік мектебінің оқушылары арасында сауалнама жүргізә арқылы, зерттеу жасанды интеллектің айтарлықтай әсер ететін салаларын және оның пайдаланушылардың, әсіресе жасөспірімдердің дағдыларын қалай өзгертетінін зерттейді. Зерттеу басқа елдердің, зерттеушілердің және студенттердің тәжірибесін зерттеу арқылы жасанды интеллектті пайдалану қаупін азайтуға көмектесетін ықтимал шешімдер мен платформаларды табуға мүмкіндік береді.

Кілт сөздер: жасанды интеллект, шешімдер, платформалар, білім беру жүйесі, оқушылар, тәуекелдер, дағдылар.

Это исследование направлено на изучение того, как развитие искусственного интеллекта влияет на систему образования и учащихся. Используя метод количественного сбора данных, в том числе опросы студентов из Назарбаев Интеллектуальной школы, в ходе исследования будут изучены области, в которых ИИ оказывает значительное влияние, и то, как он меняет навыки пользователей, особенно подростков. Исследование позволит найти потенциальные решения проблемы и платформы, которые помогут снизить риски использования искусственного интеллекта, изучив опыт других стран, исследователей и студентов.

Ключевые слова: искусственный интеллект, решения, платформы, система

образования, студенты, риски, навыки.

Introduction

Artificial Intelligence is one of the developing parts of the technologies, which has an impact in every field of life. Nowadays, humanity is using artificial intelligence in the way of making education easier. However, the integration of AI into the education system is changing the traditional method of studying, and faces several challenges and ethical issues.

According to a Forbes article (2023), AI causes the economic growth of the USA. Moreover, AI has estimated 21% of net increases and are contributing to the USA's GDP by 2030. In fact, AI is developing as society does. It means that this type of technology has a huge impact on the variety of areas of the country, society etc. As Patrick et.al (2022) states, AI allows people and companies to integrate and analyze the data, improve and automated decision-making. In AI projects, it concerns all sides, like collecting and creating information. They should be special governance practices to avoid unintended consequences.

By the development of AI, the number of users is increasing. The majority of students are interested in it, because of the unique data that ai provides. However, it is decreasing the real potential of the students, and they do not evolve their creative, logical skills. Also, after the use of AI, they pass the exam, essays as their own work. It is increasing the plagiarism among students.

Literature Review

Artificial intelligence is a system which allows computers to think like a human and solve problems in different levels (Clark, 2023). Nowadays, it grows rapidly, and causes some fears in critics. AI has the potential to develop education, make innovative programs and accelerate progress according to SDG4. It also brings several risks and challenges, which can cause debates, ethical issues (Unesco, n.d).

According to Quynh Hoa research (2023) teachers and administrations fear that students can use AI often to create new ideas and write whole writing texts. He made a survey aimed to clarify their acceptance and disapproval of students in using AI. The research results show that by increasing the popularity of AI apps in the education system, the number of students involved in it, is going up to. "Using chatGPT as an example, it makes the case that a prime concern is its implications for facilitating plagiarism" (Dien, 2023). Sometimes it is impossible to find the work of AI redactors from texts, which show that the number of plagiarism is increasing. Also, according to San Jose State University, plagiarism is the act of representing someone's work as your own without any appropriate credit.

"Students need to be taught and exposed to various forms and layers of plagiarism so that they would know how best to avoid it in their own writing" (Ahmad et al., 2012). In the research, they made an experiment among students at Malaysian University. The focus group needed to identify the plagiarism in given 10 texts. The result shows that students had wrong understanding of the plagiarism and could not identify the different forms paraphrased in ChatGPT. These findings present that students should be taught in using AI in their works to avoid the problem with plagiarism. Moreover, by properly citing is vital in preventing plagiarism and following the academic honesty of the school. It can be a valuable writing instrument, if we know all practical responsibilities and ethical use of the AI (Jarrah et al., 2023).

Aims

The research aims to find evidence of ethical issues due to artificial intelligence among adolescents and provide possible solutions to avoid these problems.

The objective of the research may be broken down into three questions.

1. ***Do we have plagiarism issues due to artificial intelligence?*** It is important to understand the potential ethical risks due to AI in society.

2. ***What should be done to avoid the problems with AI?*** The aim of this research is to find out solutions to prevent plagiarism risks. By collecting opinions of students, study will analyze the real solutions and find an effective way to solve problems.

3. ***Can we transform the drawbacks of AI using its benefits?*** It is important to know the potential of AI in increasing the efficiency of several fields of work; therefore, this question will help to use AI in necessary ways.

These questions will help me to understand the wide-spreading popularity of AI. As we know, the main issue of artificial intelligence is the misunderstanding of its use. Researchers show that students do not know how to prevent plagiarism and cannot find the AI made essays among others. So, the second question will help to find one method of AI learning.

Methodology

The purpose of this research is to determine the effect of artificial intelligence on the education system and find the most effective way to avoid the ethical issues due to AI. Current study adopts a quantitative method of data collection, and I used a questionnaire technique. Quantitative methods allow us to collect numeric data from many people (Deslands & Bertrand, 2005). Additionally, Quantitative research is very well suited to establishing cause-and-effect relationships, to testing hypotheses and to determining the opinions, attitudes and practices of a large population (Verhoef & Casebeer, 1997).

By the development of AI, the number of users is increasing. The majority of students are interested in it, because of the unique data that ai provides. However, it is decreasing the real potential of the students, and they do not evolve their creative, logical skills. Also, after the use of AI, they pass the exam, essays as their own work. It is increasing the plagiarism

among students.

My research on the effects of AI in the education system has started from observing available sources. One of the research projects contained focus group work, in which there was an experiment among students at Malaysian University (Ahmad et al., 2012). The focus group needed to identify the plagiarism in given 10 texts. The result shows that students had wrong understanding of the plagiarism and could not identify the different forms paraphrased in ChatGPT. Also, the second observed research was about the popularity of AI usage. According to Nguyen Quynh Hoa research (2023) teachers and administrations fear that students can use AI often to create new ideas and write whole writing texts. He made a survey aimed to clarify their acceptance and disapproval of students in using AI. The research results show that by increasing the popularity of AI apps in the education system, the number of students involved in it, is going up to.

The population of current study is students of Nazarbayev Intellectual school of Physics and Mathematics in Aktobe. Survey had 2 sections, in which the first part asks about personal information and consists of 3 questions (grade, age and gender). Second part has 8 questions related to the topic. The questions are:

1. Do you know ChatGPT? (multiple choice)
2. What other AI platforms do you know? (multiple choice)
3. Do you often use artificial intelligence? (multiple choice)
4. Rate the importance of AI in the education system. (Likert's scale)
5. What negative consequences of AI usage do you know? (open ended questions)
6. Rate the level of plagiarism due to AI usage. (Likert's scale)
7. Should government add additional lessons about AI to the education system? (multiple choice)
8. How to avoid plagiarism due to AI? (open ended questions)

80 people took part in the survey and all of them were 7, 8, 9 10,11,12 grade students of NIS PMD in Aktobe. The reason why my population was students of all grades, is because they are representatives of generation Z, and they know how to use electronic devices, AI platforms . Moreover, since I am a high school student sample plagiarism is one of the serious ethical issue of our society (*Plagiarism | University of Oxford*, n.d.)
While making data collection, there were some limitations. Firstly, the majority of students ignored the surveys, no matter where it was posted (Instagram, Outlook). It was one of the obstacles, which made conducting research harder. Secondly, the credibility and reliability of responses make it difficult to guarantee that answers completely cover responders' opinion. Thirdly, Ai is a developing field of technologies. Therefore, it was difficult to find credible and new information about exploring topics. These limitations may lead to an increase in "systematic changes".

Results

This research was made to investigate the impact of AI using on the education system. It was helpful to conduct a survey among NIS school students to understand the real place of artificial intelligence in teenagers.

The online survey was taken from NIS students. The questionnaire gave certain patterns which could answer the research question.

Participants were divided by age, gender and their year of study. This was made to find in which age groups the use of AI is more common. Most answers (57,5 %) were from 16–18-year-olds and after them 14-16 (27,5%), 18+ (7.5%), 12-14(6.3%) and 10-13(1.3%), (Mean = 16,2). (Figure 1)
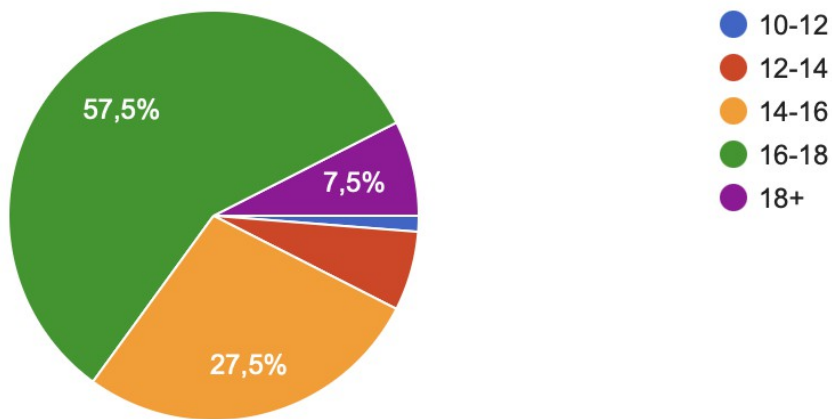
Figure 1

47,5% of answers were from the women population and the rest 52,5% were the men population(Figure 2).
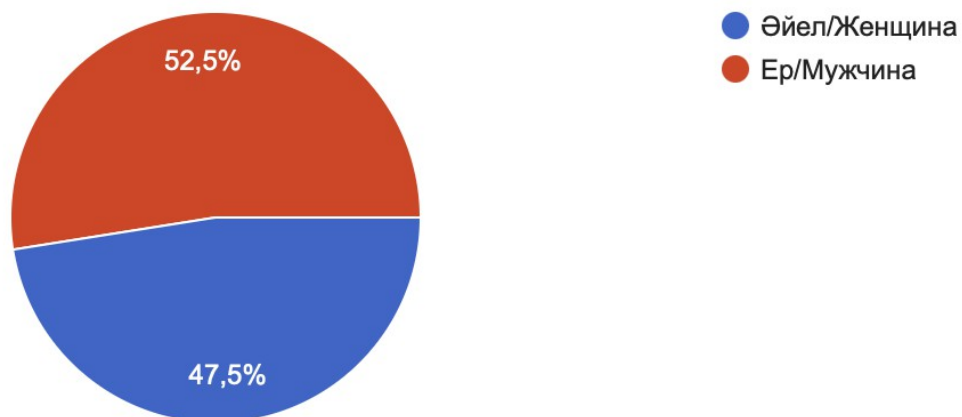
Figure 2

According to survey results, AI usage is widely shared among 11th grade students (48.8%), followed by 10th grade (21.3%), 12th (13.7$), 9th (11.3%) and 8th (5%). Mean=10.5
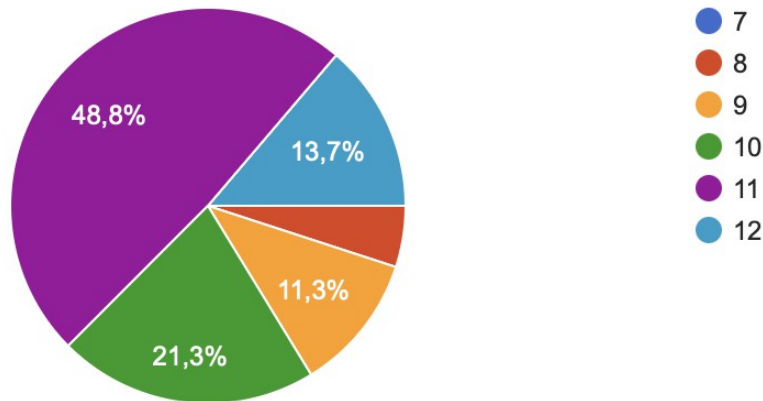

Figure 3

To understand the prevalence of AI, students were asked whether they know ChatGPT or not. Results showed that 100% of correspondents know about this specific AI.

Figure 4

To further investigate the common AI programs among students, the prevalence of other platforms was observed. According to results, the most common AI platforms are ChatGPT(93,8%) and Gemini(57,5). The least shared is Копилот, Grammarly, Tome, xAI, Stockfish and Torch (1.3% for every answer).
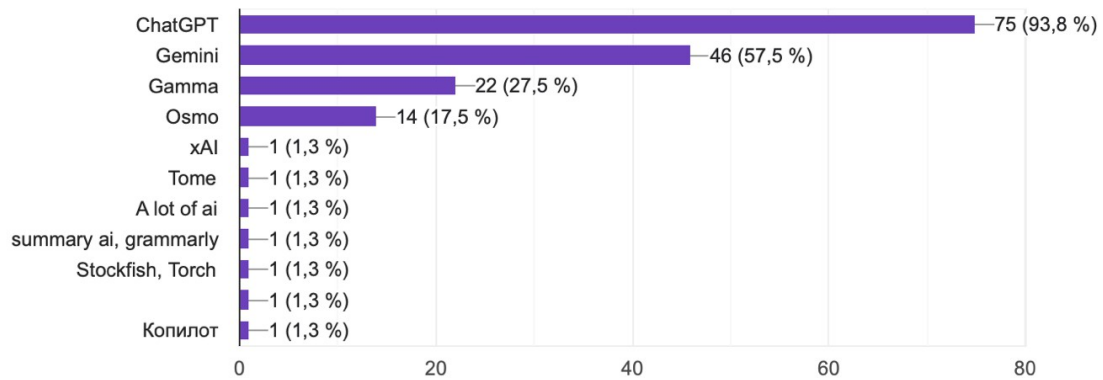
Figure 5

To understand the value of AI on the education system, responders were asked to rate the importance of AI for the education system. Answers on this question showed that the problem is relevant and the importance of AI in learning methods. (Figure 5). The mean of 3,65 shows that the overall importance of AI is high frequency .
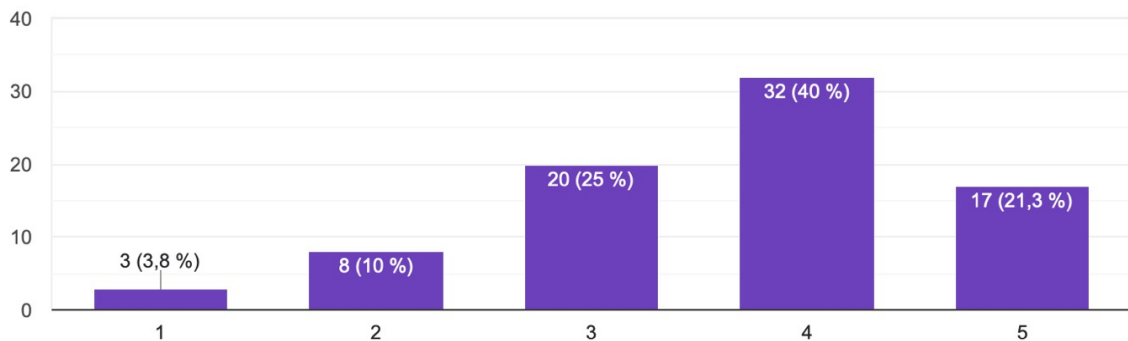

Figure 6

The open-ended question with 80 answers total gave examples of negative effects of AI use. More than 50% of answers were about "significant growth of plagiarism", whereas others think about undeveloped cognitive and analyzing skills, increasing level of laziness.

To understand the level of plagiarism due to AI, responders were asked to rate the level of plagiarism due to artificial intelligence. This question indicates if there is any

problem at all. Answers on this question showed that the problem of plagiarism is very relevant and relevant in our society (Figure 6). With the mean of 3,92 the overall tendency is in favor of high frequency.
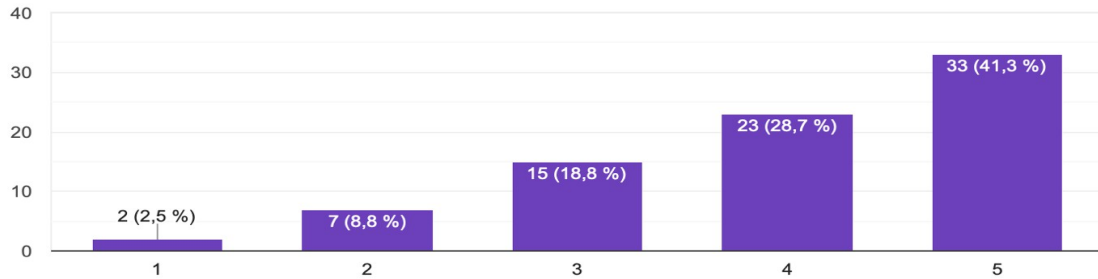

Figure 7

This question was asked to estimate the need of students to take extra courses about AI. More than half of responders were for adding extra lessons, whereas approximately 37.5% of answers were against. Moreover, there were answers like "very sure", "do not know", "may be" and "we can, but not so much" (Figure 7).
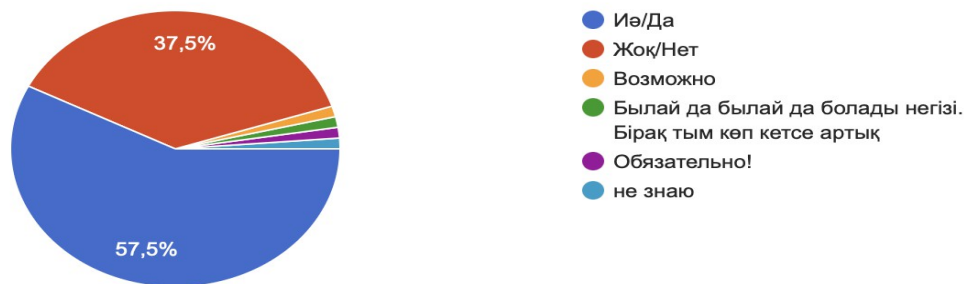

Figure 8

The last open-ended question was asked to investigate new ways of avoiding consequences of AI. The most common ones are about banning AI usage in education and using AI detectors. However, answers about paraphrasing text were also widely shared.

Conclusion

The purpose of this research paper is to determine the consequences of artificial intelligence on the education system. The problem is the increasing level of plagiarism among student due to AI

AI is one of the developing parts of the technologies, which has an impact in every field of life. Nowadays, humanity is using artificial intelligence in the way of making education easier. However, the integration of AI into the education system is changing the traditional method of studying, and faces several challenges and ethical issues.

Upon collecting students' responses, it was clear that AI platforms are widely shared among students and each student knows what ChatGPT is. Also, results show that there are many different AI platforms which are popular between adolescents and adults. According to the Nguyen Quynh Hoa survey (2023) which aimed to clarify their acceptance and disapproval of students in using AI. The research results show that by increasing the popularity of AI apps in the education system, the number of students involved in it, is going up to. Therefore, the popularity of AI platforms is directly proportional to the number of users.

However, responders have suggested issues of AI usage. According to a survey, AI has a significant impact on peoples' cognitive and creative skills, and cools down imagination. More and more students are using artificial intelligence, and believe in their power. It is clarifying the doubts of teachers in Nguyen Quynh Hoas' research.

Additionally, during the process, research faced some limitations and problems. The main one is the size of the sample, in which 80 people took part. This is a normal, but less than recommended size. Moreover, credibility of answers and collected data makes some doubts.

In conclusion, use of artificial intelligence leads to ethical issues in school and education systems. Students are more and more engaged with AI, which also can be the cause of decreasing levels of daily need skills. Government should include restrictions to avoid plagiarism, which closes the real potential of the student and evolves dependence on AI. In school programs, there must be mandatory AI lessons, which will help students not only use the benefits of artificial intelligence programs in an effective way, also, to develop new skills by using them.

Evaluation and Further Research

The study was successful as it reached expected goals and answered the given question. Also provided ways to prevent plagiarism due to using "computer mind". The data collection process was mainly focused on identifying the problem, and possible solutions to it. The next step needs more accurate and expanded data collection; also needs the method of a focus group to find out the real knowledge level of students about AI.

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