

STUDENTS' ATTITUDES TO THE USE OF ARTIFICIAL INTELLIGENCE

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Abstract

This paper aims to raise awareness about recent developments in AI and urge educators to prepare for a wider application of digital tools in the future. The authors emphasize the importance of utilizing AI to achieve the goals while maintaining the integrity of examinations.

Artificial intelligence (AI) has made remarkable progress in recent years, enabling it to be widely adopted in higher education. Today, AI can provide personalized learning experiences, create virtual learning environments and automate grading of students. The release of ChatGPT (GPT stands for Generative pre-trained transformer) in November 2022 gave many educators and institutions cause for alarm as it provided students with access to software potentially able to assist in the writing process of papers and assignments, as well as provide help with literature reviews, identification of research questions and formatting and language reviews of articles. Hence, it became a problem for teachers in higher education that students could be tempted to use AI to write essays and other assignments intended to test their knowledge and abilities. In a recent study, more than half of American college students believe that using AI tools to complete assignments or exams is cheating. In this paper, the authors compare these results with a similar survey of Swedish college students' opinions.

The authors conclude that there is an urgent need to establish procedures and ethical rules for the use of AI in higher education.

Keywords: Artificial Intelligence; AI; ChatGPT; ICT; Higher Education, Educational Software

1. INTRODUCTION

For over 30 years, it has been a trend in higher education to incorporate modern technologies and practices to improve the overall educational outcomes in a cost effective and scalable fashion. Learning management systems, gamification and virtual reality are examples of modern educational technology that has affected planning and implementation of education [1, 2]. The latest addition of digital tools are chatbots; sophisticated programs that can write texts like essays and articles using Artificial Intelligence (AI) and information from the internet.

It is usually agreed that digital tools has the potential to address many contemporary challenges in education, innovate teaching and learning and provide education to growing populations all over the world [3, 4].

At the same time the rapid development of (AI) inevitably bring multiple risks and challenges to the attention of educational institutions and staff [5]. So far, the development has outpaced policy debates and regulatory frameworks in academia and society [3].

It has been pointed out that the use of AI to assess students' performance provide teachers with tools to measure and grade their work, but also facilitate individualized support to mitigate weaknesses in academic performance [6]. Another potential benefit of AI is the possibilities to facilitate distance education where students can engage in the learning process at any time, from their home, Internet cafes, workplaces etc. With the support of AI tools teaching can be individualized, adapted to the pace of the students increasing understanding [7].

The release of ChatGPT (Generative pre-trained transformer) In November 2022 gave many educators and institutions cause for alarm as it provided students with access to software potentially able to assist in the writing process of papers and assignments, provide help with literature reviews, identification of research questions and formatting and language reviews of articles [8, 9]. Hence, it became a problem for teachers in higher education that students could be tempted to use AI to write essays and other assignments intended to test their knowledge and abilities.

1.1 Aim and purpose

This paper aims to raise awareness about recent developments in AI and urge educators to prepare for a wider application of digital tools in the future.

1.2 Method

We compared data from two surveys; one American and one Swedish (see below) to see if there is a difference in opinion between American and Swedish students and if the students perceive a qualitative difference between the new tool Chat GTP and other tools such as calculators or machine translation. Data presented below were published in [10, 11].

1.3 Scope and Limitations

We chose to discuss the impact of AI only in the field of higher education. The data used in this paper were collected by approaching students via E-mail and the figures must be seen as approximate. We believe our conclusions are valid for many educators all over the world since access to Internet, AI and social media serve to diminish national differences between students.

1.4 Artificial intelligence

The following text was written by ChatGPT responding to the query: "Define Artificial Intelligence" :

"Artificial Intelligence, often abbreviated as AI, refers to the development of computer systems and machines that can perform tasks that typically require human intelligence. It involves creating algorithms and models that enable computers to perceive, reason, learn, and make decisions autonomously. AI encompasses various subfields such as machine learning, natural language processing, computer vision, and robotics. The goal of AI is to develop intelligent systems that can replicate or simulate human cognitive abilities and enhance or automate human tasks, leading to improved efficiency and problem-solving capabilities in various domains." [8, 9].

1.5 Chat GPT about Chat GPT

The following text was written by Chat GPT in response to the query: "Define Chat GPT":

"ChatGPT is a language model developed by OpenAI. It is based on the GPT (Generative Pre-trained Transformer) architecture, which is a type of deep learning model that uses a transformer neural network to generate human-like text. ChatGPT is specifically designed to engage in interactive conversations with users, providing responses and generating text based on the given prompts or messages. It has been trained on a vast amount of text data to learn patterns, language structure, and context, allowing it to generate coherent and contextually relevant responses. ChatGPT can be used in various applications, such as chatbots, virtual assistants, and other conversational AI systems to facilitate natural language interactions between machines and humans" [9].

The responses from ChatGPT are consistent with the information we have from other sources [9, 12].

In an survey of tweets about ChatGPT intended to investigate the use of ChatGPT five functional domains was identified: creative writing, essay writing, prompt writing, code writing, and answering questions [13].

2. RESULTS

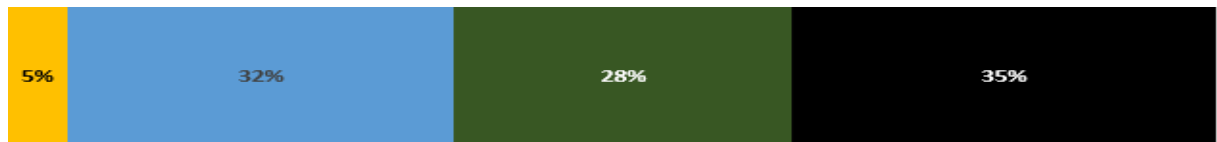
2.1 The students' use of AI tools

The two investigations of the students' acquaintance with ChatGPT (or similar programs) gave the following results for American students: 57% did not have any experience of using it, 43% had used it. Of the Swedish students, 5% was not familiar with ChatGPT, 32% knew about it but did not use it, 28% rarely used it and 35% used it regularly.

How familiar are students with ChatGPT?



Figur 1a American students, No experience of using it (57%) and have experience using it (43%). Results from Mars 6-13 2023.



Figur 1b Swedish students, 5% are not familiar with ChatGPT, 32% are familiar with it but never use it, 28% rarely use it and 35% use it regularly. Results from 5th of April to 5th of May, 2023.

Most students are aware of ChatGPT and between one third and half of them use it regularly. Results are very similar for American and Swedish students. The Swedish students appear to be slightly more aware of ChatGPT and use it more often, but the survey in Sweden was conducted in April to May 2023, the American survey was conducted early in Mars 2023. Since ChatGPT was launched in November 2022 it is reasonable to assume that there is no substantial difference between the groups real-time.

Comment: ChatGPT has spread very fast among young people with access to computers and internet, within six months after launch most students was aware of it and between one third and half of them use it regularly. It means that educators all over the world have to learn about chat-bots and ponder questions like; how to maintain the integrity of examinations, how to evaluate assignments such as essays etc. On a more positive note, educators should of course also look at the potential benefits of chatbots in teaching and learning.

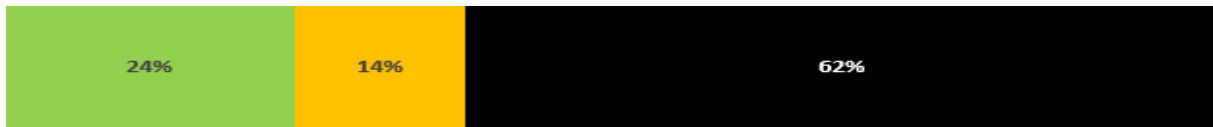
2.2 Students' attitudes towards the use of AI chatbots to complete assignments or tests

The students' opinions about the possibly unethical use of ChatGPT (or similar programs) to complete assignments or tests was outlined, using the statement "Using AI tools to complete assignments and exams is cheating". The results for American students was that 20% disagree, 29% are neutral and 51% agree. Of the Swedish students 24% disagree, 14% are neutral and 62% agree.

Responses to the statement: "Using AI tools to complete assignments and exams is cheating".



Figur 2a American students, 20% disagree, 29% are neutral and 51% agree



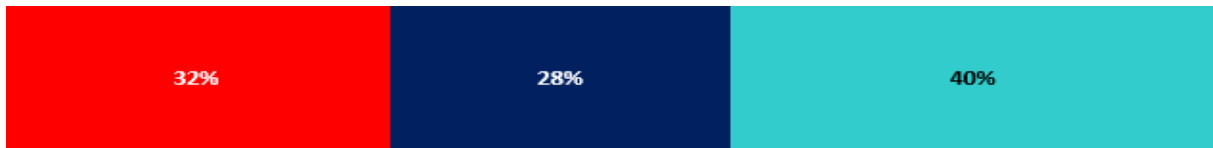
Figur 2b Swedish students, 24% disagree, 14% neutral and 62% agree

Comment: Educators and students have to discuss chat-bots, possibly try them out and then consider issues about integrity of tests and examinations. More than half of the students agree that using chatbots to complete assignments is unethical, probably most teachers would agree.

2.3 Students' attitudes concern about the impact of AI chatbots in education

The students' concerns about the use of ChatGPT (or similar programs) in education was demonstrated, using the statement "the use of Chatbots goes against the purpose of education". The results for American students was that 32% disagree, 28% are neutral and 40% agree. Of the Swedish students 58% disagree, 14% are neutral and 28% agree.

Responses to the statement "the use of Chatbots goes against the purpose of education".



Figur 3a American students, 32% disagree, 28% are neutral and 40% agree



Figur 3b Swedish students, 58% disagree, 14% neutral and 28% agree

Comment: The traditional purpose of higher education, beyond schooling or training, is to teach students how to think, rather than what to think. The question then is whether the use of AI tools poses a threat to students' development and make students less likely to think for themselves. On the other hand, AI is not going away and students have to get acquainted with it and critically analyze its application and effects in education and their future careers.

2.4 The difference in students' attitudes towards language tools and ChatGPT

The question about language tools was given only to the Swedish students. Examples of Language tools are Google translate, automatic captions on YouTube and Language learning apps. These tools are widely used by the Swedish students, in particular translation tools.

Responses to statements about concerns about the future influence on students' learning.



Figur 4a Swedish student responses to the statement "I am concerned about how AI-chatbots will impact students' learning in the future". 34% disagree, 12% Don't know/prefer to not say and 54% agree.



Figur 4b Swedish student responses to the statement "I am concerned about how AI language tools will impact students' learning in the future". 63% disagree, 17% Don't know/prefer to not say and 20% agree.

Comment: The students obviously see a major difference between the impact of previously available language tools and chatbots such as ChatGPT. We don't know how much of their concerns are due to the temptation for students to use the tools to manage assignments and exams, but the difference is significant.

3. DISCUSSION

With the rise of AI, teachers, educational institutions faces several challenges. Many people are worried about the impact of AI on the quality of education, the market value of some educations is questioned and the future career of many students uncertain.

The universities should of course utilize AI to improve both education and administration if it is cost effective, maintains the quality of education and provide students with good learning experience. In addition, in the future, higher education must prepare students for new skillsets, necessary in increasingly automated industry and societies [14].

Reaping the benefits of AI requires that prospective users trust not only the technology, but also its use by humans. Within education, this may require new policies, particularly around examination and grading of students [15]. In order to initiate a process to establish such policies one must first take the opinions of both teachers and students into consideration [16]. A policy in this field has to be adapted to the opinions of both groups to be successful.

Some numbers shown above indicate that almost 20% of students use AI extensively to complete their assignments, another 50% of students consider that practice unethical, this matter need to be resolved. The use of AI in education and society highlights the importance of free debate and exchange of opinions regarding ethical matters.

4. CONCLUSIONS AND RECOMMENDATIONS

How to use AI in education is an important question for universities. They need to develop and implement policies regarding the use of AI, both as a tool for teaching and learning, but also for use in administration. In particular, the integrity of exams and awarding of degrees is an urgent matter to address, as some students may be tempted to use AI far more than intended by their teachers. Whether such use of AI is smart, somewhat unethical or outright cheating is a matter that needs to be discussed, clarified and regulated. Whatever the policies say, practice will depend a lot on the students' opinions and perceptions of the universities' policy.

We strongly urge people involved in education to familiarize themselves with AI tools such as ChatGPT, it is only with solid knowledge about these tools and their use you can discuss or debate these issues in a constructive way.

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