

# DIGITALIZATION OF EDUCATION: IS AI AND CHAT GPT A SOLUTION?

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## **ABSTRACT: Digitalization of education: is AI and Chat GPT a solution?**

In recent years, the landscape of education has undergone a profound transformation due to the rapid advancement of digital technologies. One of the most intriguing avenues in this evolution is the integration of Artificial Intelligence (AI) and Chatbots like GPT, which have the potential to revolutionize the way education is imparted and received. By analysing the benefits and limitations of these technologies, this study aims to provide insights into the effectiveness of AI-driven educational tools, their impact on student engagement, and their ability to enhance personalized learning experiences. Additionally, ethical considerations of relying extensively on AI and Chat GPT in education are discussed. The study presented in this paper was conducted on BA and MA students enrolled at the Faculty of Humanities and Social Sciences within Aurel Vlaicu University of Arad, Romania.

**Keywords:** *artificial intelligence, chat gpt, ethics, digitalization, education.*

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## **General Considerations**

More forced than willingly, teachers and professors have experimented the benefits of ICT in education after the sanitary crises of 2019. Scholars in the field of education have long argued for and presented the benefits of digitalizing education or using ICT, at least partly. Most of their attempts hit a wall. However, 2020 was a turning point for educators. School and universities had to invest in technology, in apps and gadgets to facilitate the students' access to education. If we were to identify a benefit of that period, it would be the awakening of education, its placement in a new era, i.e.

the era of digitalization. As all discoveries and advancements, digitalization has both advantages and disadvantages. The extent to which we allow it in our lives and in our professional activity depends on a careful consideration of all these aspects.

At this point, teachers in certain universities can select one of the three teaching/learning style: synchronous, asynchronous or blended learning. There are several ways of teaching that teachers have at their disposal, such as live or recorded sessions, a mix of both live and recorded classes, written coursework, or courses that require attendance to classes. All these represent opportunities for all those involved in the educational process, such as teachers, learners and educational institutions so that courses are adapted to their needs and expectations. This gives way to a large number of combinations of course design which makes delivery diverse and challenging. "Nevertheless, online language courses mainly revolve around the synchronous and asynchronous modes, while blended learning is a category of its own."<sup>1</sup> Synchronous education is based upon the idea that teachers and learners interact in real time on an online platform to which all participants must log in at the same time, despite the term 'synchronous'. This can't be done unless participants have the necessary equipment that allows them to attend the class, such as a smart device or computer and internet connection as well. The characteristic of such classes is that participants can share materials, hear and see each other.

Asynchronous learning and teaching revolve around the idea of sessions being recorded, materials uploaded while learning, performing different tasks at their own pace. Asynchronous courses can be arranged on learning blocks and are clearly structured. This type of teaching deprives the participants of the 'life' element and of the interactive choices specific to synchronous teaching. Blended learning comprises both online teaching and learning and FTF features. They combine activities performed online and physical presence (Garrison and Kanuka, 2004; Graham, 2006). If the online element will exceed the 50% then it will be classified as online or distance education (Bernard, Borokhovski, Schmidt, Tamim, Abrami, 2014; Porter, Graham, Spring, Welch, 2014). 'Flipped classroom' is a sub-category where learners do preliminary work with course materials at home and

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<sup>1</sup> Psoinos, I., D., *Adapting Approaches and Methods to Teaching English Online. Theory and Practice*, Springer, 2021, pp. 56-57.

engage in higher order skills in class such as problem solving or responding critically to what they read at home. The management of blended courses can vary among schools, meaning some can use the online element for assignments and homework done synchronously, while others may have online learning groups to complete and assess a project that may be later presented online or onsite. "The variations, composition and weight of activities in blended learning courses are, evidently, quite versatile and flexible."<sup>2</sup>

One of the most controversial aspects of digitalization nowadays is the use of Artificial Intelligence (AI) and Chatbots (Chat GPT) in education. AI is rapidly progressing and integrating into our daily routines, thanks to the technological advancements of the past decade and the widespread adoption of digitalization across various field of professional activity. Education, too, has embraced information and communication technologies as an essential component of everyday learning. Technological innovations rooted in artificial intelligence present numerous advantages for both students and educators. However, it is crucial to acknowledge the potential risks associated with excessive digitalization. Thus, we have to carefully analyse the advantages and disadvantages.

- ✦ In terms of advantages, we have identified:
- ✦ Rapid feedback
- ✦ Personalized learning
- ✦ Fast and automate administrative tasks
- ✦ Tutoring
- ✦ Access to learning

*Rapid feedback* is definitely an advantage of AI both for teachers and for students. It is said that educators spend 31% of their time planning lessons, grading papers and doing all sort of administrative work. Spending so much time with such issues takes from quality time they could spend with their students. On the other hand, students find it disturbing having to wait maybe two or three days for an answer. AI can help students find an answer to their questions in almost no time and frees up some of the teach-

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<sup>2</sup> Hrastinski, S., *What do we mean by blended learning?* In TechTrends, February 63(4), 2019.

ers' time. Teachers can reduce time spent on preparing instructional materials and supervising students, allowing them to focus more on engaging and assisting students directly. AI-powered assessment systems enable efficient evaluation of students' work, providing timely feedback that enhances students' understanding and facilitates error correction. Moreover, these systems enable educators to comprehensively assess student performance by processing vast amounts of data.<sup>3</sup> This empowers instructors to gain insights into students' strengths and weaknesses, enabling them to tailor their teaching methods accordingly.

*Personalized learning* is considered very trendy in education. Specialists argue the need to create personalized materials and learning experiences according to the student's interest, proficiency level and educational background. AI has the potential to evaluate a student's proficiency in a specific subject and customize the learning materials accordingly, enhancing their effectiveness (Annuš, 2022: 5099). AI enables students to advance at their individual learning speed, leading to more personalized and efficient learning experiences. Through AI, educational materials can be generated and adjusted automatically to match the student's proficiency level. It can also identify their weaknesses and prepare the materials accordingly.

*Fast and automate learning tasks* is another advantages offered by AI programmes. Numerous administrative tasks within educational institutions involve manual and time-consuming processes. These tasks include managing student records, generating timetables, and issuing certificates. AI can take over some of these tasks and free up the teacher's time for other more human activities.

*Tutoring* is a useful tool provided by AI through chatbots. While teachers sometimes don't have enough time after classes to answer the students' questions, chatbots can answer questions anytime with a speed of 2.7 seconds. However, we should note that a chatbot cannot replace a teacher.

*Access to learning* refers to the fact that AI makes learning accessible for students anytime and anywhere because they can find tasks without having to wait for the teacher. It is a solution for underprivileged learners who have the chance to learn without having to commute.

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<sup>3</sup> Panigrahi, A., Joshi, "Use of Artificial Intelligence in Education", *The Management Accountant Journal* 55, 2022, p. 65.

But besides advantages, AI has also disadvantages. Some of them are already visible whereas others will occur on the long run:

- ✦ Lack of emotional intelligence
- ✦ Less human interaction
- ✦ Addiction
- ✦ Financial issues
- ✦ Unemployment of teachers
- ✦ Laziness in students and teaching staff
- ✦ Technical problems
- ✦ Ethical issues
- ✦ Data protection and GDPR issues

We shall refer to some of the disadvantages of using AI in education. The costs of implementing and using AI in an ethical and responsible manner can be pretty high for educational institutions. They depend on the number of students and the degree of personalization. Involving AI in teaching on a regular basis could increase the tuition fees. On the other hand, the ethical issues related to data protection and plagiarism are very sensitive. AI collects personal data of students and teachers and this aspect can raise privacy issues. The way we handle, use and protect data is controversial. The use of information generated by chatbots in papers and tasks solved with the help of AI are to a certain extent unethical. It has not been regulated yet but it can be considered a form of plagiarism or even intellectual theft as it is not the work produced by the person who uses the chatbot. There are already universities that use a plagiarism checker to detect papers generated by AI.

Another disadvantage is that it will reduce human interaction between teachers and students and student-student interaction. Automate learning activities require no human interaction and without it, students will not develop emotional and social skills. AI will never possess such “human” skills. Brackett et al. (2019) state that emotional intelligence is a critical predictor of academic and professional success therefore educators should create supportive and safe environments that encourage students to express their emotions. Thus, we recommend limitation in the number of activities generated and conducted through AI. The most impor-

tant concern for teachers is related to the ethical issues related to the use of AI. Students can use its tools to cheat on assessments and graduation papers. Kavale and Forness (2019) mention that Ai can generate papers or complete assignments thus undermining the task's educational value. However, there is a solution to this problem. Teachers should reconsider the traditional way of assigning tasks shifting towards more creative and open-ended tasks which involve creativity, subjectivity and imagination, ingredients that AI does not have. Creativity, problem-solving and critical thinking tasks cannot be yet solved by machines.

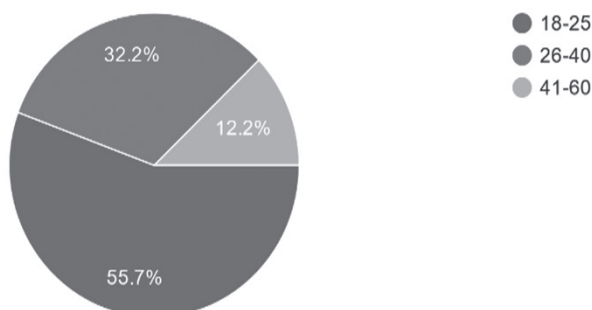
## Research Findings

We conducted a study on a sample of students enrolled in the Faculty of Humanities and Social Sciences within Aurel Vlaicu University of Arad, Romania. The faculty hosts 6 undergraduate programmes in 5 fields of study (Philology, Public Administration, Theology, Communication and Music) and 5 MA programmes. We distributed a questionnaire via Google forms and received 115 responses. The questionnaire investigated the students' opinion on the use of AI in education. They had to answer 22 questions most of them multiple-choice or ranking questions. The results for the most relevant questions are presented below.

As seen in the chart below, most students are aged 18-25, namely 55.7% of the respondents. Thee age is relevant for the study, as young students, the so-called Generation Z are digital natives that can handle technology very well and we assume that they would be more interested in working with ICT and AI tools.

In ce categorii de varsta va incadrati

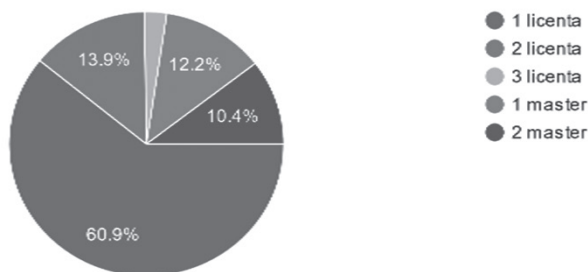
115 responses



The next three questions reveal information about their year of study, programme of study and their employment status. We see that 60.0% of the respondents are in the first year of study. This information is quite relevant for their future answers because it means they are at the beginning of their academic path, not yet accustomed to academic tasks and practices. Most respondents are enrolled in preschool and primary school education programmes and 62.6% state they are employed. Their employment status is also relevant because it shows us how much spare time they have to spend on academic tasks and assignments. Being employed and studying leaves less time for deadlines and the temptation of chatbots is higher.

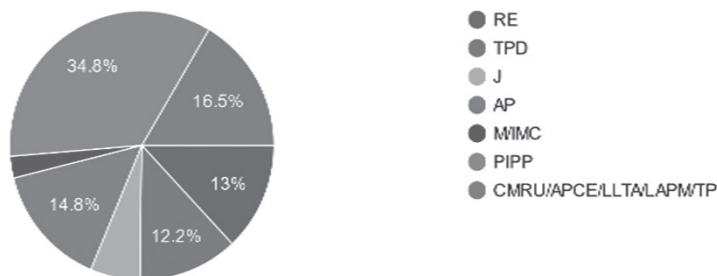
#### In ce an de studii sunteti

115 responses



#### Bifati programul de studii

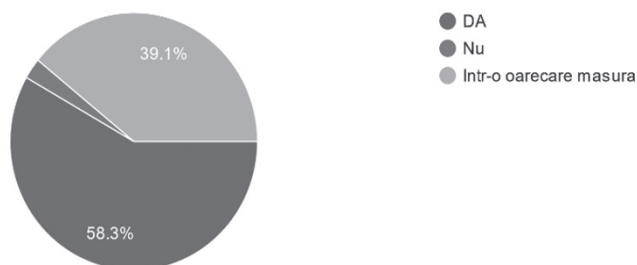
115 responses



The 5<sup>th</sup> question investigates the students' opinion on the usefulness of integrating ICT in teaching. Probably given their age, the pandemic they went through with its technological benefits made 58.3% of students consider that ICT is necessary in education whereas only 2.6% are against it. If we were to compare the percents of students that are against ICT integration (2.6%) with the percent of students aged 41-60 (12.2%) we see that Generation X and the Boomers are also keen on integrating technology and are open to new trends in education although they are called digital immigrants, i.e. people that have not grown up with technology.

Considerati utila integrarea tehnologiei in educatie?

115 responses

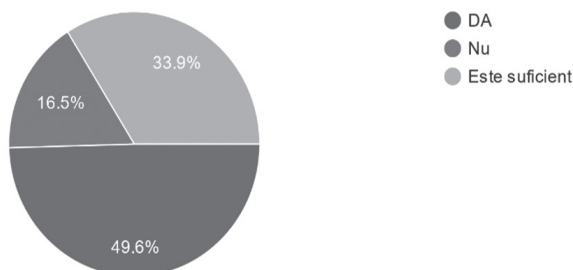


The next question tried to identify the educational platforms used by the students. From their responses, we see that they are familiar with many of them. They mentioned google classroom, Kahoot, Canva, Twinkl, Brainly etc. Relevant for our study is that 6.95% mentioned the familiarity with Chat GPT and AI.

Another questioned aspect was the students' desire to have more digital classrooms, namely that teachers would use more technology in teaching.

V-ar placea ca profesorii sa foloseasca mai multa educatie digitala in activitatea de predare?

115 responses

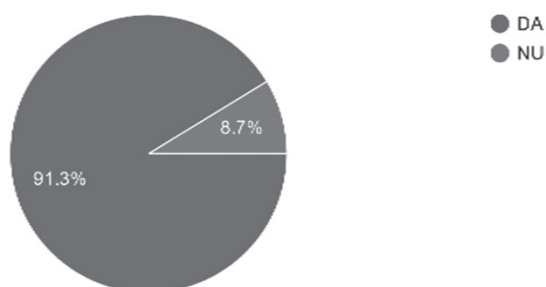




As seen, 49.6% would appreciate more technological involvement in teaching whereas 16.5% consider that it is enough. Not at all surprising, are the answers to the next question. 91.3% of the respondents have heard of AI programmes and tools and only 8.7% state that they are unfamiliar with this concept. The fact that AI has been so intensively mediatized all over the public space, on TV, radio, the social media etc makes us doubt this percentage but the answers come to contradict us.

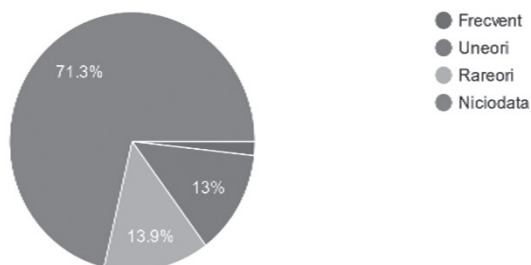
#### Ati auzit de programe de inteligenta artificiala?

115 responses



#### Ati utilizat aplicatia Chat GPT pentru rezolvarea sarcinilor de lucru de la universitate?

115 responses



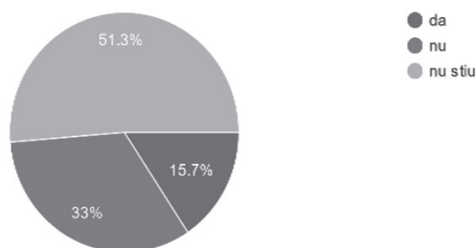
However, of those 91.3% who have heard of AI, 71.3% state they have never used it to complete educational assignments, 13.9% rarely and 1.7% frequently.

Next question investigated an issue that is quite controversial at this point, namely the ethical aspect of using AI in education. Because it is not yet regarded as plagiarism and because it does not involve using someone else's work, 51.3% of the students do not know whether using AI is an ethical be-

haviour. 33% state that it is not whereas 15.7% believe that it is ethical to use AI. Given the fact that certain universities have started checking papers for texts generated by AI, this aspect will be definitely researched from now on. The percents are somehow encouraging. Next question is linked to this one because it wanted to find out the students' opinion on plagiarism aspects. 47% do not know whether the use of chatbots can be considered plagiarism, 29,6% believe it is and 23.5% say that it isn't. We notice that there is a balance between the percents in these two questions, in other words students support their views in terms of ethical issues and plagiarism.

Considerati ca utilizarea Chat GPT este un comportament etic

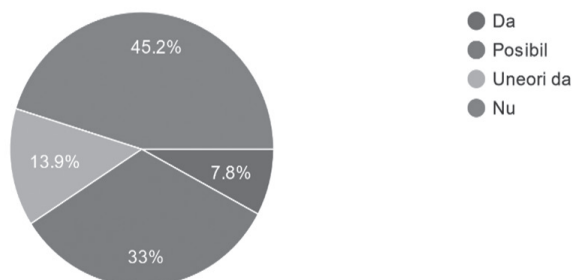
115 responses



When asked whether they would use AI and Chat GPT to complete certain academic tasks, 45.2% answered no, 33% consider it an option and 7.8% answered affirmatively. Given the fact that most students are in the first year of study, professors should carefully consider this aspect and identify teaching solutions and assign tasks that involve creativity, problem-solving and decision-making that are at this point impossible to be carried out by AI.

Luati in calcul utilizarea chat gpt in elaborarea lucrarilor ulterioare?

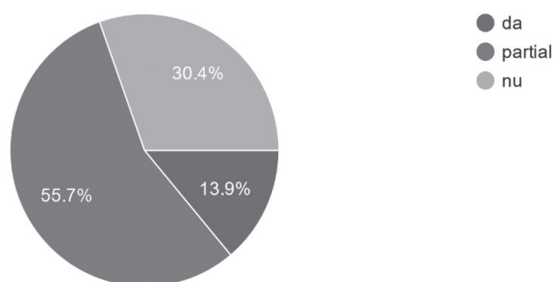
115 responses



Surprising, however is the answer given to the next question and contradictory to the previous answers. 55.7% consider that using AI and Chat GPT is partly correct and fair which comes in contradiction with the previous answers. 30.4% state that it is not correct whereas 13.9 believe that it is. We see that the percents are quite the same for people who do not have any ethical issues with AI but differ for those who are not yet sure how to view AI.

Utilizarea Chat GPT este o modalitate corecta de lucru?

115 responses

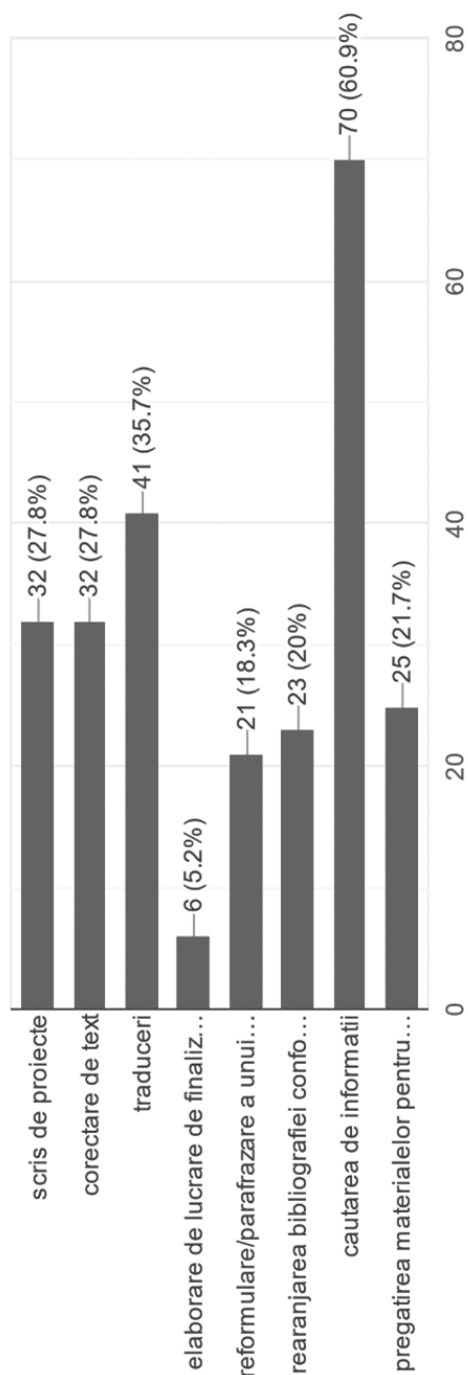


The last aspect that I want to approach in this paper is the students' opinion on the activities they would solve and conduct with the help of AI. We provided a short list of tasks and they ranked them. The results show that most students (60.95) would use Chat GPT to find information on a given topic, 35.7% for translations and 27.8% for text correction and project writing. At this point, dissertation writing is on the last position with 5.2%. AI can have many benefits if used appropriately, considering the ethical and moral issues associated to it. Chat GPT is a good tool for translations, information search and why not corrections. However, it should be moderately used for task completions, project writing and other tasks that involve "human" skills and knowledge assessment.

The study investigated also other aspects but those will be analysed in a separate study. In the pages of this one, we have tried to investigate the students' opinion on ethical aspects related to the use of AI in a digitalized education and the extent to which it is considered a helpful tool and not a form of plagiarism.

## Selectează pentru ce activități ai folosi Chat GPT

115 responses



## Conclusions

Needless to say, that education cannot exist without progress. Generation Z needs technology, digitalization and interactive learning to fully and appropriately develop. The digital natives function at their highest potential when exposed to learning experiences that are tailored on their learning needs. Chalk has to be replaced by a digital pen, blackboard by a smartboard and the traditional teacher by a modern, digitalized and engaged teacher. Along with many aspects of digitalization, the emergence of AI revolutionized teaching. We can play dead and pretend it does not exist or we can be one step ahead it and make it work for us.

AI can be used to personalize learning, ensuring a tailored approach for students. It facilitates adaptive learning platforms, enabling students to grasp complex concepts at their own speed, fostering a deeper understanding. AI-powered tools analyse vast amounts of data, providing valuable insights into student performance and learning patterns. Educators can use this data to identify areas of improvement, make interventions, and enhance teaching strategies. AI-driven chatbots and virtual assistants can perform administrative tasks, such as enrolment processes and student queries, freeing up educators' time to focus on teaching. This efficiency not only saves time and resources but also enhances the overall educational experience for both students and teachers.

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