

THE (MIS)USE OF OPENAI'S CHATGPT AS A NOVEL COMMUNICATION TOOL IN HIGHER EDUCATION AND THE IMPERATIVE FOR A PARADIGM SHIFT IN STUDENT ASSESSMENT

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ABSTRACT

Advancements in natural language processing offered by ChatGPT by OpenAI have led to its widespread use as a new communication tool in all spheres of life and work. In a short time, ChatGPT has become widely used in higher education too. Students have recognized its ability to generate responses and solve various tasks in their native language. The quick reaction of the youth is positive as it shows that they are keeping up with new technologies, quickly adopting new communication tools that allow them to be more efficient and effective. The widespread use of ChatGPT by students indicates that it has the potential to enhance the quality of higher education. However, research conducted for the purpose of this paper has shown that the use of ChatGPT in higher education in Bosnia and Herzegovina (BiH) has not yet led to this effect. Rather, results suggest there is a widespread misuse of the tool that undermines the basic principles of higher education which cannot be ignored. This paper aims to investigate the (mis)use of ChatGPT in the considered field with the aim of confirming the need for urgent change in the paradigm of student assessment. Such a paradigm shift should take into consideration novel technological and communication conditions in higher education and protect the integrity and ethics of academic work, making the topic of this paper highly relevant.

Keywords: ChatGPT by OpenAI, communication tool, quality in higher education, student assessment, paradigm shift

1. INTRODUCTION

ChatGPT, an AI-powered chatbot from Silicon Valley startup OpenAI released on November 30, 2022, has made progress in natural language processing and has quickly become a widely used communication tool in the field of higher education. Students have quickly embraced this chatbot primarily as a means of generating answers and texts necessary for more efficient completion of their academic tasks. This essentially positive response indicates that students are following and adopting technological trends and new communication tools, and specifically, that they are aware of the potential of ChatGPT that they can effectively utilize. This supports the claim that ChatGPT has the potential to raise the quality of higher

education. It could positively affect reasoning, knowledge retention and explicit reasoning [1]. Many studies published so far indicate that teaching and learning research will experience some of the most transformative impacts, which requires further research. It is crucial to identify and implement policies to protect against the misuse of generative AI [2]. In this sense, the research conducted for the purpose of this paper contributes to further highlighting the issue. In line with the existing body of research, it also points out a potential for wider use of generative AI in higher education, as well as a significant space for further research [3]. Although the ethical use of ChatGPT generally requires a paradigm shift in assessment of students' knowledge, the focus of this paper will be on exploring the identified misuses of ChatGPT in higher education as an argument in favor of the urgent need for changing this paradigm. Namely, identified misuses endanger the integrity and ethics as fundamental principles of higher education. Therefore, it is important to immediately initiate currently possible processes that will to some extent protect higher education, and changing the paradigm of evaluating students is precisely in that category. Planning and implementing other processes that have the potential to protect integrity and ethics in higher education requires more time and resources. In the context of the rapid progress in the application of AI, there is hardly any country that manages to initiate these processes quickly enough. In BiH, an institutional response related to the mass application of ChatGPT and other similar tools certainly cannot be expected quickly. That is precisely why we need to do what is already achievable: change the paradigm of evaluating students and urgently adopt a new range of student activities and tasks that are evaluated.

2. THE (MIS)USE OF OPENAI'S CHATGPT IN HIGHER EDUCATION – IMPERATIVE FOR A PARADIGM SHIFT IN STUDENT ASSESSMENT

According to a study by UBS, ChatGPT is the fastest-growing application in history [4]. The benefits it offers to higher education were recognized immediately upon its launch, but its potential for misuse was quickly identified too. Research conducted in BiH shows that students quickly adopted ChatGPT as a useful tool that could help them tackle a wide range of academic tasks. However, neither in formal university communication channels nor in classrooms was there any discussion about this chatbot and its ethical use. As a result, ChatGPT found itself in a grey zone for some time, where it was widely used by students, often misused, but still not sufficiently mentioned by most professors. University lecturers and universities as institutions were not prepared for the mass use of this chatbot by students. Their slow or non-existent response further encouraged some students to use ChatGPT outside of acceptable ethical practices. The lack of any communication between professors and students on this topic serves as an alibi for many students to use ChatGPT irresponsibly. This further argues that in higher education, a paradigm shift in assessment is imperative and urgent. It is encouraging that previous research in this field indicates that possible misuses should not be viewed as a problem that experts will not adequately address in the future: "Those adaptations include a rigorous and ongoing survey of new technologies and services that could aid students in plagiarism and other forms of cheating, and tweaking homework and other assignments to reduce the effectiveness of those technologies. Many teachers-and anti-cheating software developers—are already doing this, and there is no reason to believe they will be stymied by ChatGPT." [5] Therefore, ChatGPT should continue to be used for the benefit of higher education.

3. RESEARCH METHODOLOGY

The hypothesis of this research is that, in addition to ethical use, students resort to the misuse of ChatGPT in higher education. A survey was conducted among the student population in BiH, while professors-respondents participated in a series of discussion groups/conversations

to test the stated research hypothesis. The primary research question posed was whether students in Bosnia and Herzegovina use ChatGPT, to what extent, for what purposes, and in what manner. This complex question led to a set of relevant sub-questions. Answers to these questions shed light on the issue of usage and identified the most common aspects of misuse of this artificial intelligence (AI) tool by students. Among the group of professors, discussions were held regarding whether they use ChatGPT, whether they were aware of its (mis)use by students and whether they have changed the assessed student activities in order to reduce the effects of its potential misuse.

Researching the extent and manner of (mis)use of ChatGPT as an innovative communication tool in higher education in BiH is part of a broader study of the benefits and challenges that ChatGPT has brought to higher education. This study was conducted during March and the first half of April 2023 in two segments. The first segment was a Computer Assisted Web Interviewing (CAWI) survey consisting of 16 questions related to the degree of ChatGPT usage by students, the purpose and satisfaction of its use, students' opinions on the usefulness of this communication tool for higher education in general and specifically for students. The questions also related to students' views on the ethics of using this tool, their opinions on whether there is any misuse and unethical behavior among students when using ChatGPT. Students were also asked whether they had discussed the use of ChatGPT with their professors and what their views were on the level of familiarity of professors with ChatGPT, its benefits, and challenges. Some questions had a control character. The second segment of the study was focused group discussions (FGD) held with higher education lecturers, which allowed for a deeper understanding of benefits and challenges that ChatGPT has brought. Discussions also shed light on the need to protect the integrity and ethics as basic tenets of higher education, the need to change the paradigm of evaluating students' knowledge, and the general paradigm of higher education that ChatGPT has imposed as an imperative.

The responses in the student questionnaire were of closed type. Three questions offered the possibility of multiple answers. Response scales ranged from three to eight steps. The FGD responses were of an open type and provided in-depth analysis of the topic, and their processing was in line with the processing of qualitative data.

The CAWI questionnaire is intended for the student population of the first and second cycles of study at public and private universities and colleges in Bosnia and Herzegovina (Zenica, Tuzla, Sarajevo, Banja Luka, Mostar), and FGDs were conducted with the university lecturers from Zenica, Tuzla, Sarajevo and Banja Luka. The study within the student population included 304 students, and 29 lecturers participated in the FGD. Data processing went in the direction of defining frequencies and percentages of given responses, which is appropriate for this type of primary research.

4. RESULTS AND DISCUSSION OF RESEARCH RESULTS

The results of the survey show that more than three-quarters of student respondents (75.33%) use ChatGPT as an auxiliary tool in fulfilling their academic obligations. Of these, more than one-third report using it once or twice a week (35.74%), 26.23% of students report using it several times a week, and 1.64% use ChatGPT daily (Figure 1). As shown in Figure 2 below, the most common purposes for using ChatGPT are: to quickly obtain necessary information and answers to questions (73.68%), to assist in solving complex and time-consuming tasks (57.89%), to summarize books and other texts for classes (42.76%). 51% of students use ChatGPT for help with generating homework, essays, and other texts, while 6.25% of students used it for all of the aforementioned purposes. Majority of students (56.91%) indicate that they only used this tool as a work aid in generating parts of assignments but a significant number of students (42.11%) point out that they also used this tool to generate an entire paper they needed. These figures support the claim that students "embraced" ChatGPT quickly and

use it for various purposes as an aid in mastering their academic obligations. This further leads to the conclusion that it is necessary to promptly approach changing the framework of activities evaluated by teachers and the very paradigm of assessment.

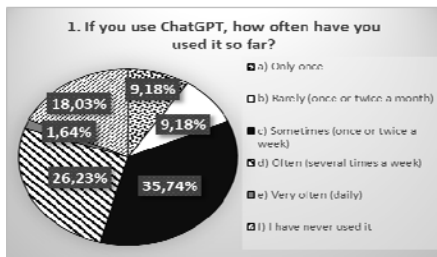


Figure 1. Frequency of ChatGPT use

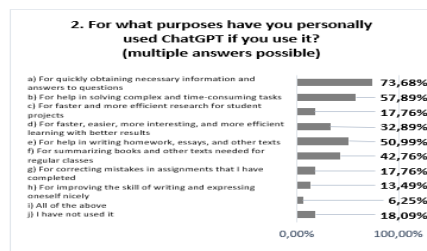


Figure 2. Purposes ChatGPT is used for

Regarding the existence of ethical dilemmas around the use of ChatGPT, more than two-thirds of students (70.72%) believe that the use of ChatGPT in their population occurs "often" or "sometimes" in violation of socially accepted ethical codes (see Figure 3 below). However, only a small number of students (23.36%) report being concerned, even though they are "fully" or "partially" aware of the challenges (such as maintaining the ethics and integrity of higher education, the risk of reduced student engagement during their studies, the risk of lower levels of output knowledge and competencies after graduation, and the difficulty of finding a job, and the degradation of academic degrees). A worrying 54.28% of students who are "fully" or "partially" aware of ethical challenges state that they are "not currently disturbed" by them, while 9.21% of students state that it is not important to them at all. Also, a very high percentage (44.41%) of students report being tempted to "copy complete answers generated by ChatGPT without citing them as a source and/or without modifying /supplementing generated answers" in the preparation of their written assignments (Figure 4 below). Further 8.55% chose not to answer this question. It is therefore clear that the results confirm that students use ChatGPT for ethically questionable practices, and that misuse is not just present but widespread. This is undoubtedly an argument for urgent change in the student activities that professors are assessing, as well as the paradigm of assessment itself, all in order to protect and strengthen the underlying goals and principles of higher education.

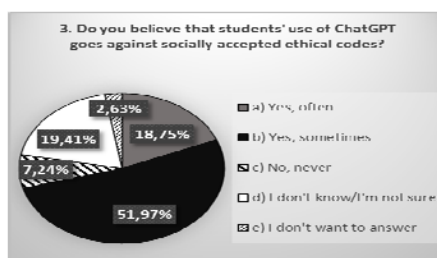


Figure 3. Do you believe students use ChatGPT?

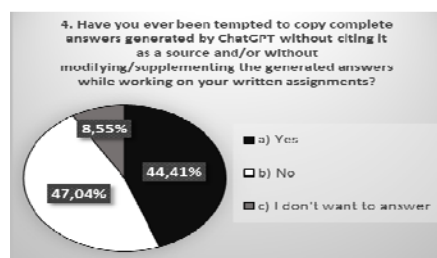


Figure 4. Have you ever used ChatGPT in an academically dishonest manner?

On the other hand, university professors who were interviewed in the FGD confirmed that in a worrying percentage of cases they were not ready for the rapid expansion of ChatGPT and its wide acceptance by students in such a short period of time. 79.30% of professors had not started using ChatGPT for academic purposes at the time of the interview, and even 75.90%

of them expressed that they were not familiar with the spectrum of activities for which their students (mis)use this AI communication tool (Figures 5 and 6 below). Additionally, 51.70% of the professors believe that there are no misuses by students, 34.50% stated that they "do not know" about such cases, while only 13.80% of them think that misuses exist, but that they are rare and at an individual level. Only 10% of them are aware of the possibility that student misuse of ChatGPT already exist. All mentioned is very concerning, especially considering the data that 70.72% of students stated that the use of ChatGPT in their population often or sometimes takes place outside ethical frameworks. Obviously, professors are not sufficiently informed about the real state of use and misuse of ChatGPT by their students. This is probably the reason why 90% of them continued to implement the same method of evaluation and the same framework of tasks that they evaluate even after the widespread breakthrough of ChatGPT into their daily academic activities (see Figure 7 below).

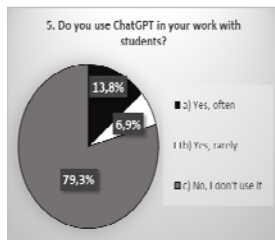


Figure 5. Use of ChatGPT by professors

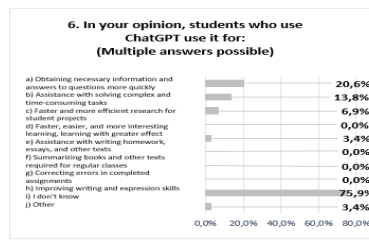


Figure 6. Perceived purposes of students' ChatGPT use

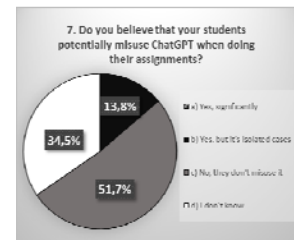


Figure 7. Perception of ChatGPT misuses by students

Unfortunately, even 62.83% of students said that they have never talked about ChatGPT with their professors. The lack of this kind of communication is certainly one of the triggers for a significant level of unethical use of this communication tool in universities. However, it is encouraging that two-thirds of students (70.72%) believe that there would be progress if there were greater knowledge among professors about the potential, benefits and challenges of ChatGPT, and that quality education and transparent communication and discussions about the topic of artificial intelligence and ChatGPT would improve the quality of higher education in Bosnia and Herzegovina. These research results should be a warning to institutions that it is time to enter into thoughtful studies and discussions about the ethical and purposeful use of ChatGPT in the field of higher education.

5. CONCLUSIONS

The progress in natural language processing offered by OpenAI's ChatGPT has quickly led to its widespread use as a new communication tool in the field of higher education. According to research results, students have noticed the benefits of ChatGPT in a short amount of time, but also potential for its misuse. Although the research indicates a clear stance among respondents from universities from BiH that ChatGPT can contribute to the quality of higher education, the results also show that in BiH this has not yet happened. It can be concluded that this is a result of research-confirmed widespread misuse of ChatGPT by students. Also, insufficient preparedness of most of their professors to use ChatGPT functionally in teaching, as well as to respond to the evident misuse of this tool by their students is certainly an additional reason why benefits that ChatGPT creates have not yet been fully utilized. Misuse not only leads to reduced student engagement in completing tasks, a lower level of output knowledge and competencies, and creation of a false picture of the success of students who are currently in the process of education, but also negatively affects the value of degrees, ethics, and integrity of higher education institutions. Evident misuse must be immediately and unequivocally suppressed. Therefore, urgent action is needed to change the paradigm of

assessing student work, among other processes. This should certainly represent only a transitional phase leading to the development of new strategies for working with students and changes in educational paradigms in general, which is the only correct path, but it still requires additional financial and time resources. The aforementioned urgent actions aimed at changing the practice of assessing student work could be considered as "putting out the fire" that is already affecting the quality of higher education due to identified misuse. Furthermore, such changes are the only realistic and feasible action for preventing chatbot misuse in conditions where an adequate institutional response to the use of ChatGPT in teaching is lacking. By changing the assessment paradigm, identified misuse can be immediately suppressed, and the level of output knowledge and competencies of students who are currently in the process of education can be maintained. This would provide the field of higher education with the conditions to reap the benefits of ChatGPT and further its development despite the challenges it brings.

In order to protect the integrity and ethics of academic work, it is advisable to urgently adopt a new assessment paradigm. It needs to be based on quickly changing the traditional way of working, interacting, communicating and grading in the classroom, changing the types of tasks that are evaluated. It also needs to be based on implementing ChatGPT in a thoughtful and transparent manner in all aspects of teaching, verifying the authenticity and originality of work and regularly changing the syllabus. The new range of activities and new paradigm of assessment of student work should take into account the widespread use of ChatGPT-a and other chatbots among students, while at the same time protecting knowledge, ethics and integrity of higher education.

This paradigm shift can be implemented relatively quickly within existing rules and regulations. This does not, however, absorb the institutions from the responsibility to start strategically protecting higher education from irregularities related to unethical use of ChatGPT and other chatbots in academic work. It is therefore important to adopt appropriate regulations, practices and instructions as quickly as possible. Continuous work with students on developing their ethical awareness and creative and critical thinking is crucial, both for them individually and the society they live in. To achieve all these goals, educating professors and students on all aspects of academic work in new technological circumstances should therefore not be delayed.

6. REFERENCES

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