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**Kristina B. Krčmarević Bogdanović***
ORCID: https://orcid.org/0009-0002-9254-6504
University of Belgrade, Faculty of Philology, Department of German Studies

**Danijela D. Vranješ****
ORCID: https://orcid.org/0000-0002-3301-6514
University of Belgrade, Faculty of Philology, Department of German Studies

# AI AS A PARTNER IN CRIME: (HOW) DOES AI FOSTER CHEATING IN HIGHER EDUCATION – INSIGHTS FROM LANGUAGE STUDIES

**Abstract:** With the rise of generative artificial intelligence, academic integrity faces new threats, particularly in language studies and through AI-assisted cheating. This study investigates AI-assisted cheating among language students at four Serbian universities through a questionnaire with multiple-choice and open-ended questions. It explores students' motivations for cheating, exam types most vulnerable to AI misuse, common cheating strategies, and proposed prevention measures.

Findings show the main reason for cheating is inadequate exam preparation, followed by overly extensive course materials. Theoretical exams – with essays, open-ended, or multiple-choice questions – are seen as most susceptible to AI-assisted cheating, while those requiring language demonstration are less so. For prevention, students suggest stricter exam supervision and confiscation of electronic devices, but also stress the need for more engaging lessons, clear assessment criteria, and greater transparency to help reduce AI-related cheating.

**Key words**: AI-assisted cheating, language education, preventive measures, academic integrity, AI in education

* kristina.krcmarevic@gmail.com
** danijellavranjes@gmail.com

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## 1. Introduction

The rapid rise of artificial intelligence (AI), especially large language models (LLMs), has profoundly affected education. While AI offers valuable opportunities for teaching and learning, it also introduces new challenges to academic integrity, particularly in language studies, where LLMs can produce human-like text that may compromise the authenticity of student work.

Most research to date has focused on traditional forms of academic dishonesty, such as plagiarism or copying during exams, and the broader role of technology in student misconduct. However, the specific implications of AI tools in language studies remain insufficiently explored. This study addresses that gap by examining the prevalence, motivations, and methods of AI-assisted cheating among language students at four Serbian universities.

Using a questionnaire, the research investigates what motivates students to cheat, which exam types are most vulnerable, which cheating strategies are used, and which preventive measures students recommend. It also compares perspectives between those with and without prior cheating experience.

Findings highlight key motivations, the types of exams most affected by AI misuse, and perceived effective countermeasures. The results provide a foundation for developing strategies to uphold academic integrity in language studies and beyond.

## 2. Previous research

Academic dishonesty is not a new issue. Since the advent of assessments, students have found ways to gain unfair advantages: plagiarizing, using cheat sheets, or, more recently, unauthorized technology like smartphones and spy earpieces. With the rise of AI, these methods have become more sophisticated. This chapter explores traditional academic dishonesty in higher education, student motivations and methods, and the new challenges technology – especially AI – poses for detecting and preventing unethical behavior.

### 2.1 Academic dishonesty: Definition

Any behavior intended to obtain an unfair academic advantage or to mislead an instructor or assessor is considered academic dishonesty and undermines the fundamental principles of academic integrity. Pavela (1978) classifies four types:

1. **Cheating** – using unapproved resources or aids;
2. **Fabrication** – falsifying or inventing data or citations;
3. **Plagiarism** – using another's ideas or words without acknowledgment;
4. **Facilitating dishonesty** – helping others cheat.

These practices have become more prevalent with the advancement of technology, and this paper examines cheating and plagiarism – collectively referred to as "academic dishonesty".

### 2.2 Academic dishonesty: Causes and contexts

Previous research confirms that various factors influence unethical academic behavior, including motivational drivers, classroom dynamics, pedagogical practices, and institutional policies (Newstead et al., 1996; Whitley, 1998; Jordan, 2001; Hutton, 2006; Murdock & Anderman, 2006; Boysen, 2007; Van de Grift, 2007; Hensley, 2013; Orosz et al., 2013; Orosz et al., 2015; Costley, 2017; Pavlin-Bernardić et al., 2017; Fattah et al., 2019; Salehi & Gholampour, 2021). Students driven by extrinsic motivations such as grades and recognition are more likely to cheat than those driven by intrinsic learning goals, who associate cheating with guilt (Newstead et al., 1996; Murdock & Anderman, 2006; Orosz et al., 2013). Salehi and Gholampour (2021) identify key motivations such as lack of preparation, time pressure, course difficulty, or irrelevant content, along with grade pressure and perceived leniency of consequences. When the value of learning is outweighed by performance pressures – especially under weak sanctions – students are more likely to resort to dishonesty (Whitley, 1998; Salehi & Gholampour, 2021).

Effective pedagogy plays a critical role in preventing academic dishonesty. Van de Grift (2007) outlines five dimensions of quality teaching:

- **Efficient Classroom Management:** Maximizes instruction and minimizes disruption, balancing activities to maintain engagement.

- **Stimulating Climate:** Creates a safe and challenging environment that fosters confidence and independent learning.
- **Clear Instructions:** Delivering structured, clear lessons with active engagement.
- **Adaptive Teaching:** Tailored instruction to diverse needs, while providing targeted support.
- **Teaching Learning Strategies:** Equipping students with cognitive strategies and scaffolding to develop independent learning skills and autonomy.

Costley (2017) emphasizes that engaging instruction, clear grading criteria, and transparent communication of goals and expectations boost student motivation and reduce cheating. Secure and varied assessments also deter dishonesty (Van de Grift, 2007; Costley, 2017). In contrast, poor instruction, irrelevant content, and negative teacher traits correlate with increased cheating, as students disengaged from their courses are more likely to behave unethically (Boysen, 2007).

Strong student-teacher relationships grounded in trust and respect further reinforce academic integrity (Hutton, 2006). When students perceive teachers as fair, engaging, and competent, they are less inclined to cheat (Orosz et al., 2015). Enthusiastic teaching fosters emotional connection, motivation, and honesty through positive role modeling (Orosz et al., 2015). While the impact of classroom competition remains debated (Orosz et al., 2013; Pavlin-Bernardić et al., 2017), Fattah et al. (2019) show that minimizing unhealthy competition and focusing on personal growth reduces unethical behavior.

Institutional policies also shape academic integrity. Vague or poorly communicated policies contribute to cheating (Jordan, 2001), while clear, student-inclusive honor codes are associated with lower dishonesty rates by setting shared ethical standards (Whitley, 1998; Hensley, 2013). Institutions must enforce consistent disciplinary measures and promote faculty supervision during exams to uphold integrity (Whitley, 1998; Hutton, 2006), since uniform enforcement and staff development are equally vital (Hensley, 2013).

In sum, fostering academic integrity requires a holistic strategy: quality teaching, a respectful learning environment, and strong institutional policies. Yet, the growing presence of generative AI introduces new challenges, demanding updated approaches to preserve academic honesty

in a rapidly evolving landscape – even as dishonesty itself long predates digital technology.

### 2.3 Impact of technology and gen AI on academic dishonesty

Traditional methods such as copying or using notes are still common (Salehi & Gholampour, 2021), but technology has greatly expanded dishonest practices. Since the early internet era, plagiarism has surged (Szabo & Underwood, 2004; Anderman & Murdock, 2011), facilitated by easy access to information. One of the most widespread forms is plagiarism, as access to information has become easier and copy-paste practices harder to detect. Sayed & Lento (2015) note three main tech-enabled violations: uncredited use of information, unauthorized resources during exams, and submission of others' work.

Despite a general consensus that plagiarism is unethical (Whitley & Keith-Spiegel, 2002), students often rationalize it. Even paraphrased content must be cited (Hutson, 2024). However, AI now enables undetectable plagiarism. Tools like Turnitin[1] can flag AI-generated content, but results vary and often miss well-crafted prompts or reworded output (Alexander et al., 2023; Dalalah & Dalalah, 2023; Elkhatat et al., 2023; Ibrahim, 2023; Perkins et al., 2023; Weber-Wulff et al., 2023; Halaweh & El Refael, 2024). Incorrectly flagging genuine work as cheating could also harm students' academic futures (Giray, 2024).

Ultimately, when motivational factors meet easy-to-use AI tools for content generation and paraphrasing, the temptation for dishonest behavior increases. As Hutson (2024) notes, generative AI challenges concepts of originality and collaboration, pushing educators to redefine plagiarism.

The greatest controversy lies with LLMs like ChatGPT[2], which use machine learning (ML) and natural language processing (NLP) to model human language. Their ability to generate fluent text, paraphrase, summarize, and translate makes them attractive and risky in academic contexts, especially because AI-generated content can closely mimic human writing. The applications of generative AI for academic cheating are numerous:

1 http://turintin.com/

2 https://chatgpt.com/

1. Creating entire assignments, such as essays, papers, or code that can be submitted as one's own work (Hutson, 2024; Karkoulian et al., 2024; Kotsis, 2024).
2. Paraphrasing existing text to make it appear original. This can be difficult to detect, as even advanced plagiarism detection software may not be able to flag AI-generated paraphrases (Karkoulian et al., 2024; Kotsis, 2024).
3. Generating responses to exam questions. This is especially problematic in online or take-home exams, where it is more difficult to proctor students (Kotsis, 2024).

That said, not all uses of generative AI in education are unethical. It can support idea generation, outlining, and feedback – practices that stimulate critical thinking (Chiu, 2024; Essel et al., 2024). Roman-Acosta (2024) also shows that AI can enhance coherence, grammar, and clarity when used alongside human editing and thoughtful writing strategies.

Still, students must understand the ethical boundaries of AI use. Content generated with AI should be cited, and the role of AI in an assignment should be disclosed (Karkoulian et al., 2024). This makes AI literacy essential, and educators must guide students in responsible use (Grassini, 2023).

Due to unreliable AI detection, addressing AI-assisted plagiarism requires a reevaluation of teaching methods and assessment strategies. Evangelista (2025) recommends replacing vulnerable formats like essays and multiple-choice tests with oral exams, project-based learning, and open-ended questions that demand personal interpretation. Assignments grounded in students' experiences and designed to foster creativity and critical thinking can further discourage AI misuse (Xie & Chakravarty, 2023; Chiu, 2024; Essel et al., 2024). In-person exams can be secured using lockdown browsers. Finally, institutions must define clear policies on AI use, enforce consequences for misuse, and provide both students and faculty with resources for ethical, informed use.

## 3. Methodology

### 3.1 Current Research and Research Questions

While much research has addressed academic dishonesty – its forms, motivations, and the role of technology – studies focusing

specifically on how AI tools like LLMs are used in language learning environments for unethical purposes remain scarce. This study addresses that gap by investigating the prevalence, motivations, and methods of AI-assisted cheating among philology students at four Serbian universities. Through an analysis of student perceptions and experiences, the research aims to inform strategies for managing AI-related academic dishonesty in language studies. The study is guided by five research questions:

**RQ1:** What factors influence students to engage in unethical behavior during exams?
**RQ2:** Which types of exams are seen as most vulnerable to cheating or plagiarism, and what strategies are used?
**RQ3:** How do perspectives differ between students who cheat and those who don't?
**RQ4:** What strategies do students suggest for preventing academic dishonesty?
**RQ5:** How do students perceive AI's impact on the frequency of cheating?

### 3.2 Research Design and Participants

For the purposes of this study, a questionnaire was distributed electronically to students at four Serbian universities – Belgrade, Novi Sad, Niš, and Kragujevac – using convenience sampling via student-accessed online platforms. The survey remained open for three weeks to ensure broad access. Participation was voluntary and based on informed consent.

The questionnaire targeted 2nd, 3rd, and 4th-year students, as 1st-year students had not yet taken any exams. It comprised three sections: general cheating behavior, AI-related cheating, and attitudes toward AI's influence and potential prevention strategies. Of 198 responses, one was excluded for inconsistency, leaving 197 valid participants.

### 3.3 Data Analysis

Data analysis combined quantitative and qualitative methods. Closed-ended questions were evaluated using descriptive statistics and presented in graphs. Open-ended responses were analyzed via thematic analysis using Saldana's (2013) "coding by committee" method to

ensure inter-rater reliability and to identify key themes and patterns. As presented in Table 2, we identified several overarching themes and their corresponding codes, along with the respective percentages of occurrence. The themes and the codes are the result of the authors' joint decisions, as each item was thoroughly discussed among the authors and placed into the corresponding category upon agreement.

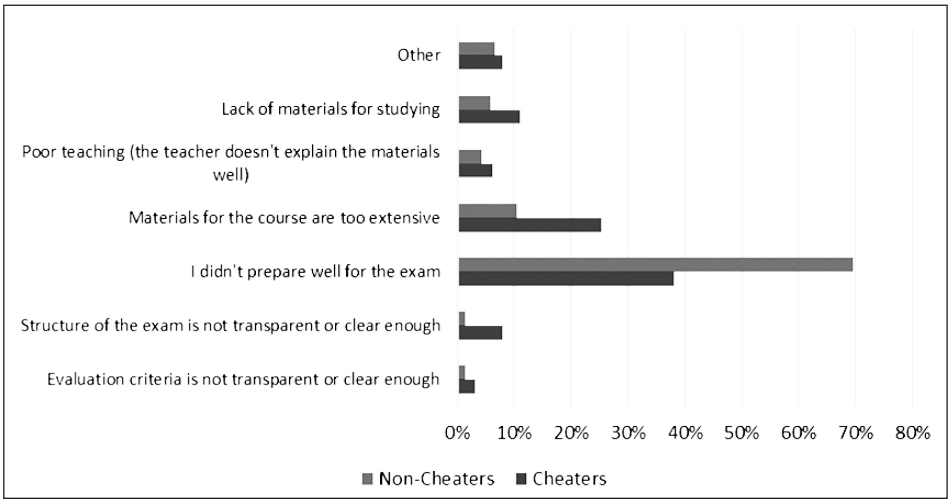
The study first identified whether students had previously cheated, allowing the distinction between personal experience and perception of others' behavior. Two participant groups – those who had cheated and those who had not – answered the same set of questions, enabling comparative analysis. To assess statistically significant differences between the groups, chi-square tests with post-hoc Bonferroni correction were conducted.

## 4. Results

Given the sensitivity of the topic, the authors anticipated that students might hesitate to answer truthfully if asked to name their faculty or department. To ensure greater anonymity and reduce the likelihood of false responses, demographic questions were excluded from the questionnaire. Nevertheless, the possibility remains that some participants were not entirely honest in their answers.

The first section of the questionnaire focused on students' general experiences with academic dishonesty. Encouragingly, less than a third of respondents (31.8%) reported having cheated in exams, whether with or without AI. Among those, only 20.6% stated they had used AI for cheating at least once – about 7% of the total sample. Based on these responses, students were divided into two groups and given similar sets of questions from different perspectives: those who had used AI for cheating answered questions about their experiences and views, while those who had not were asked for their perceptions of AI-related cheating.

Students who admitted to cheating were asked about their motivations, while non-cheaters were asked about what they perceived to be common reasons for such behavior. As shown in Graph 1, the majority cited insufficient exam preparation or overly extensive course materials as key reasons, while fewer pointed to poor teaching or a lack of transparency as primary causes.



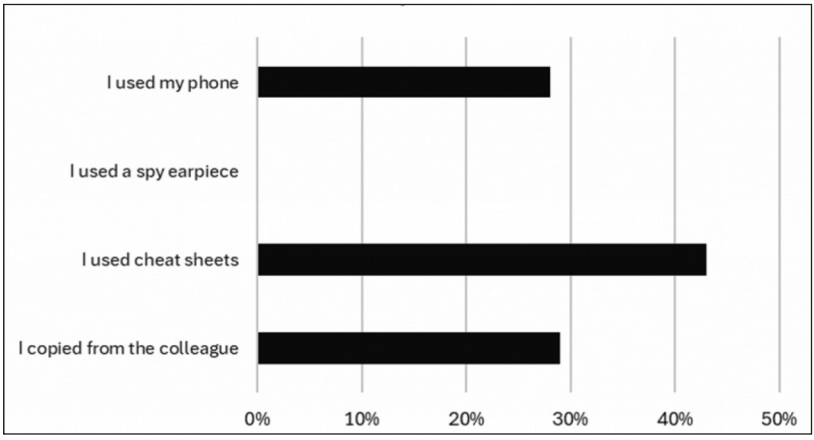

**Graphical representation 1.** *Most common reasons for cheating*

To examine whether cheaters have different perceptions of the main reasons for academic dishonesty compared to non-cheaters, we have conducted a chi-square test followed by a post-hoc Bonferroni correction. The tests have shown that the answers between the two groups are not statistically different, which means that both groups of students see the main reasons for cheating in a very similar way (Table 1).

**Table 1.** *Most common reasons for cheating: Cheaters vs. Non-Cheaters*

| | Reason | *p*-value | Significance (Bonferroni) |
|---|---|---|---|
| 1 | Evaluation criteria unclear | 1.0 | Not significant |
| 2 | Exam structure unclear | 0.3343 | Not significant |
| 3 | Didn't prepare well | 0.0745 | Not significant |
| 4 | Materials too extensive | 0.1438 | Not significant |
| 5 | Poor teaching | 1.0 | Not significant |
| 6 | Lack of materials | 0.6273 | Not significant |

Students who admitted to cheating were further asked to explain which strategies or tools they had used. As shown in Graph 2, the most common methods included cheat sheets, mobile phones, and copying from peers. Notably, no participant reported using spy earpieces.




**Graphical representation 2.** *Cheating methods applied by respondents*

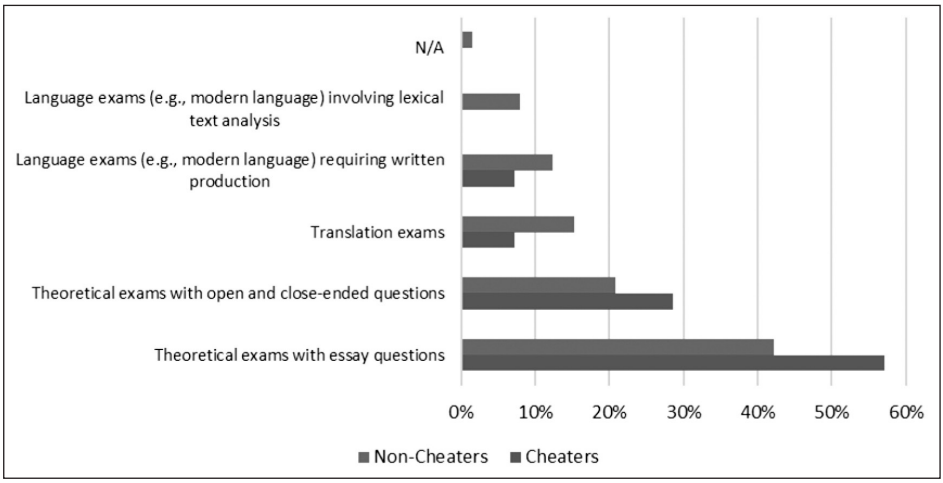
Furthermore, both groups were also asked about the types of exams in which they had used AI, or deemed most vulnerable to AI-assisted cheating. As Graph 3 illustrates, exams requiring substantial written responses – theoretical exams with essay or open/closed questions – were seen as most at risk. While fewer cheaters reported using AI in translation exams, non-cheaters considered these particularly susceptible. Similarly, AI use was reported in written language exams, but non-cheaters generally did not consider them suitable for cheating.

A chi-square test comparing the responses of AI users with non-users (or non-cheaters) found no statistically significant difference in their perception of which exams are most vulnerable to AI-assisted cheating ($p = 0.65$). This suggests that students tend to cheat using AI in precisely the types of exams their peers also view as most exposed.

Students who had used AI to cheat further elaborated on their methods:

- **Theoretical exams with essay questions** by using ChatGPT to generate concepts and concise answers, generate essays on literary topics after providing it with relevant literature and summarize lecture notes or scripts (for exam preparation).
- **Theoretical exams with open and close-ended questions** by using ChatGPT to generate answers to multiple choice or fill-in-the-blank questions after typing in shorter or key versions of the exam questions.

- **Translation exams** by copying the content in question into an AI-tool and asking it to provide the translated version.
- **Language exams requiring written production** by using ChatGPT to generate answers.




**Graphical representation 3.**

*Types of exams mostly jeopardized by AI-assisted cheating*

All participants were asked what teachers can do to prevent AI-assisted cheating. Their suggestions were grouped into four categories: **prior**, **during**, **after the exam**, and **not applicable suggestions**.

**Table 2.** *Recommended preventive measures*

| Theme | Code | Percentage (Code) | Percentage (Theme) |
|---|---|---|---|
| Measures prior to the exam | Enhancing the Quality of Lectures and Providing Stimulating Teaching Materials | 10.2 | 37 |
| | Clarity and Transparency in Examination Requirements | 10.2 | |
| | Exam Format and Assessment Modifications | 6.5 | |
| | Enhancing Exam Preparation | 3.7 | |
| | Support and Guidance | 2.8 | |
| | Exam Question Design to Mitigate AI-Generated Answers | 1.2 | |
| | Education on Academic Integrity and correct Usage of AI | 1.2 | |
| | Reducing Course Load | 1.2 | |

| | | | |
|---|---|---|---|
| Measures during the exams | Prohibition of Electronic Devices | 19.1 | 40.2 |
| | Enhancing Monitoring and Control | 15 | |
| | Increased Emphasis on Oral Examinations | 3.7 | |
| | Technological Interference (Jammers) | 1.6 | |
| | Implementing Secure Browser Environments | 0.8 | |
| Measures after the exam | Implementing Stricter Punishment for Cheating | 2.4 | 4.9 |
| | AI Literacy and Use of AI- and Plagiarism-Detection Software | 2.4 | |
| Not applicable | Nothing | 10.6 | 17.9 |
| | Uncertainty | 3.7 | |
| | No Answer | 3.7 | |

As shown in Table 2, most responses (40%) focused on measures during exams, especially banning and confiscating devices beforehand. About 15% emphasized improved monitoring – more supervisors, smaller rooms, and prompt response to suspected cheating. Students also recommended more oral exams, technical interference devices, and secure browsers.

Over one third of responses involved pre-exam measures, primarily enhancing lecture quality and increasing transparency. Suggestions included clearer and more engaging teaching, detailed explanations of complex topics, adapting to students' attention spans, and providing interactive, clear, yet high-quality and stimulative materials. Students also called for transparent exam requirements, better alignment between lectures and exam content, and sample exams with clear evaluation criteria. They proposed varied and fair exam formats that test understanding and critical thinking rather than rote memorization. Some students favored giving more weight to pre-exam obligations and organizing additional prep classes and consultations. Others stressed the need for moral support, teacher empathy, and a shift toward prioritizing learning and personal growth over grades. Several recommended using AI-generated answers as teaching tools to foster ethical use and understanding of academic integrity.

Post-exam measures were mentioned less frequently (4.9%). Suggestions included stricter penalties for cheating and better tools or teacher awareness for detecting AI-generated content.

The fourth theme included students who provided no suggestions or believed nothing could be done. About 10.6% felt that cheating is

inevitable, especially for disengaged students, and not something teachers can prevent.

Finally, when asked if AI facilitates cheating, 57.6% of participants agreed, while 27.8% were unsure. Encouragingly, 52.5% believed AI wouldn't necessarily increase cheating, or were uncertain (29.3% said no; 23.2% were unsure).

## 5. Discussion

This paper aimed to explore the prevalence of AI-assisted cheating among language students at four Serbian universities, investigating underlying motivations and techniques used.

Findings show that although only a small number of students reported using AI for cheating, its primary use is for generating text in theoretical, essay-based exams – consistent with previous studies (Hutson, 2024; Karkoulian et al., 2024; Kotsis, 2024; Evangelista, 2025). Theoretical exams with open-ended questions followed, while language exams with written tasks appear less vulnerable. Even multiple-choice exams are not entirely exempt. Notably, the perspectives of students with and without cheating experience showed no significant differences.

The main motivation for cheating was insufficient preparation or overly extensive content, aligning with findings by Salehi and Gholampour (2021), who reported similar reasons including inadequate preparation, time constraints and exam difficulty. Interestingly, participants in this study emphasized the need for more preparatory classes and consultations. Unlike Salehi and Gholampour's participants, who mostly copied from peers, our respondents relied more on cheat sheets, though peer copying and phone use were also common.

Although only 6.6% admitted using AI to cheat, their detailed responses offer insight into how AI is applied across exam types. As in other studies, AI was frequently used to generate entire essays or entire assignments (Hutson, 2024; Karkoulian et al., 2024; Kotsis, 2024; Evangelista, 2025), as well as responses to open- and close-ended questions (Kotsis, 2024). Surprisingly, translation exams were least affected.

Findings suggest that students mainly use AI to generate answers with minimal personal input, showing a lack of critical engagement. This

may stem from insufficient instruction on ethical and productive AI use, an area where teachers can play a key role. As others have argued, when used appropriately, AI can promote critical thinking and aid learning (Chiu, 2024; Essel et al., 2024). AI literacy and guidance on ethical use are thus essential, as per Grassini (2023).

Preventing AI-assisted cheating is complex. Students emphasized in-exam measures such as confiscating devices, increasing supervision, and acting swiftly on misconduct, which is consistent with Hutton (2006) and Whitley (1998), who advocate for active monitoring and reporting. However, students also pointed to pre-exam strategies, such as improving transparency and teaching quality, echoing Costley (2017). To prevent academic dishonesty, our respondents further advocate for a mix of well-designed, specific, and diverse questions that prioritize understanding and analysis over memorization. These approaches align with calls for oral exams, project-based learning, and personalized assessments to reduce AI misuse (Costley, 2017; Evangelista, 2025).

While theoretical exams can adapt in this way, adapting practical language exams poses a challenge. CEFR[3]-based tests rely on standard formats, and as AI gains a role in language learning, updates to CEFR descriptors and exam design may be needed (CEFR, 2020).

Improving teaching quality was repeatedly emphasized – clearer instruction, engaging materials, better accessibility, and adapting to current learning challenges. These align with findings that student satisfaction with teaching reduces dishonest behavior (Boysen, 2007; Van de Grift, 2007; Costley, 2017). Additionally, participants favored competence development over rote learning, supporting Fattah et al.' (2019) view that a growth-oriented classroom culture promotes integrity and mutual respect (also see Hutton, 2006). Orosz et al. (2015) also highlight the importance of positive teacher-student relationships, enthusiasm, and role modeling in promoting honest academic behavior.

Post-exam punishments were the least supported prevention measure. Still, as Costley (2017) notes, clear consequences are important for establishing expectations. A balanced approach would include transparent AI use policies outlining acceptable practices and consequences for violations – clarifying the ethical use of AI and reinforcing integrity.

To implement this, teachers themselves must be equipped to meet

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these challenges through AI-focused training. Workshops and professional development can help educators tailor instruction to today's tech-savvy students. This is vital, as participants believe AI will make cheating easier and harder to detect, increasing its frequency.

Despite offering relevant insights, this study is limited by its reliance on self-reported data and its context-specific focus on Serbian universities. Broader studies could help generalize findings.

Nevertheless, the study contributes to literature on AI's impact on academic integrity. Its findings offer guidance for developing teaching practices and institutional policies that address AI-assisted cheating. Promoting an ethical academic culture in the age of AI will require cooperation among students, educators, and policymakers.

## 6. Conclusion

This study aimed to explore AI-assisted cheating among Serbian language students and identify effective preventive measures for maintaining academic integrity in the digital age.

Findings show students mainly use AI to generate shallow content and basic answers rather than support critical thinking, likely due to limited awareness of its educational potential. Inadequate preparation and overwhelming or unclear course materials were key motivations for cheating. While many students suggest stricter supervision or claim cheating cannot be prevented, others emphasize the importance of clear expectations, improved teaching quality, and better learning materials.

Suggested preventive strategies include personalized, critical-thinking-based exams, oral assessments, and enhanced preparation support. A combined approach – addressing both pre-exam and in-exam measures is essential.

As AI evolves, educational institutions must proactively adapt policies and practices to uphold fairness and academic integrity.

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**Kristina B. Krčmarević Bogdanović**
**Danijela D. Vranješ**

## VEŠTAČKA INTELIGENCIJA U ULOZI SAUČESNIKA: KAKO VEŠTAČKA INTELIGENCIJA PODSTIČE VARANJE U VISOKOM OBRAZOVANJU?

**Rezime:** Razvoj generativne veštačke inteligencije donosi nove izazove akademskom integritetu, posebno u oblasti filologije. Ova studija istražuje zloupotrebu veštačke inteligencije među studentima jezika na četiri univerziteta u Srbiji putem upitnika sa zatvorenim i otvorenim pitanjima. Analiziraju se motivi za varanje, vrste ispita najpodložnijih zloupotrebi AI alata, korišćene strategije i predložene preventivne mere.

Rezultati pokazuju da su glavni razlozi za varanje nedovoljna priprema i obimno gradivo. Najugroženiji su teorijski ispiti, posebno oni sa esejima i pitanjima otvorenog tipa, dok su ispiti iz jezičkih veština manje pogođeni. Studenti predlažu strožu kontrolu i zabranu elektronskih uređaja na ispitima, ali i naglašavaju važnost poboljšanja kvaliteta nastave, transparentnosti i angažovanosti. Nalazi pružaju uvid u borbu protiv neetičkog ponašanja u eri AI tehnologije.

**Ključne reči:** varanje uz veštačku inteligenciju, studije jezika, preventivne mere, akademski integritet, VI u obrazovanju