

Plagiarism in Higher Education

The Impact of EU-funded Research, Law, and AI on Evolving Academic Norms

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Abstract

What qualifies as plagiarism, and how has its perception evolved over the past decades? Does the rise of digitalization and artificial intelligence redefine the concept of plagiarism, or does it merely introduce new forms of literal copying? The definition and assessment of plagiarism have undergone continuous transformation, particularly with the increasing influence of digital technologies and AI. This raises the question of whether these innovations create novel challenges in identifying and managing plagiarism or simply bring existing problems to the fore in new ways. This paper explores the multi-faceted nature of plagiarism definitions, in particular in national copyright and criminal law provisions as well as EU regulations. It examines EU-funded projects conducted between 2010 and 2019 that investigated plagiarism in higher education, paying special attention to differences between faculty and student attitudes. In addition, the present paper analyses the impact of AI-based technologies, which present both new challenges to, and opportunities for detecting and preventing plagiarism. The research aims at mapping how legal and ethical approaches to plagiarism may evolve with the appearance of these technologies and to what extent the findings of past EU projects remain applicable in the current academic landscape.

Keywords: plagiarism, higher education, artificial intelligence, academic integrity, originality

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“If you copy from one author, it’s plagiarism.
If you copy from many, it’s research.”

(Wilson Mizner)

1. Introduction

Plagiarism is one of the most serious and complex ethical problems in higher education, damaging the integrity and effectiveness of education systems. The phenomenon is not simply a matter of individual student behavior, but also an issue for institutional regulation and social norms. Almost all higher education institutions in Hungary refer to legal norms (typically copyright, sometimes criminal law) in relation to plagiarism, although plagiarism is not a legal category under national law.¹ This paper describes the concepts of usurpation, fraud, theft, infringement of copyright or copyright-related rights, contrasted with the ethical aspects of plagiarism. The main role of higher education institutions is to create and transmit knowledge and to promote the development of critical thinking and ethical research practice.² Plagiarism, however, undermines these principles and, in the long term, threatens the role of higher education in society.³

Originality and authenticity are the foundations of the scientific community. Plagiarism is a total violation of these two principles, which can ultimately lead to a loss of confidence in the education system. Plagiarism also has a negative impact on the quality of education, as it hinders the development of independent thinking and creative problem solving. In addition, the reputation and international competitiveness of higher education institutions suffers when the fight against plagiarism is ineffective.

- 1 Barna Mezey, ‘A tudományetikai felelősség kérdései a magyar felsőoktatásban: Az egyetemi és tudományos élet etikai szabályozása – az egyetemi etikai kódexek’, *Magyar Tudomány*, Vol. 175, Issue 6, 2014, pp. 655–666; István Kollár, ‘Plágium, vagy mások eredményeinek összefoglalása? Egy kutató tűnődése’, *Magyar Tudomány*, Vol. 177, Issue 1, 2016, p. 93.
- 2 Act CCIV of 2011 on National Higher Education (hereinafter: NHE Act), Section 1 (1).
- 3 The preamble of the NHE Act reads as follows: “The National Assembly, aware of its responsibility towards the nation, in accordance with the avowal of the Fundamental Law, agreeing with the need for the spiritual and intellectual renewal of the nation, trusting in the commitment of the young generations becoming university citizens, and expressing its belief that our children and grandchildren will once again raise Hungary by their talent, perseverance and spiritual strength, shall pass a new law to regulate national higher education.”

To understand and prevent plagiarism and strengthen academic (scientific) integrity, a number of projects have been launched in the EU between 2010 and 2019. The projects launched at that time aimed to identify the types of plagiarism, analyze the attitudes of students and teachers in higher education, promote scientific ethics and prevent plagiarism. The present paper discusses, among others, the ENAI (European Network for Academic Integrity), IPPHEAE (Improving the Prevention of Plagiarism in Higher Education Across Europe), SEPPHAI (Supporting the Enhancement of Plagiarism Prevention in Higher Education Institutions) and AIRS (Academic Integrity Research Study) projects, their results and recommendations. Together, these projects have contributed to the development of anti-plagiarism policies in European higher education institutions and to the strengthening of academic integrity.

The digital age and the development of artificial intelligence have brought new challenges in the management of plagiarism. While these tools create new opportunities for learning and research, they also raise ethical and practical problems that require a new type of regulation and a change of approach. The huge amount of data available on the Internet and the appearance of large language models (LLMs) in the public domain have made it even more difficult to distinguish between original and copied content. This underlines the responsibility of higher education institutions to develop effective anti-plagiarism strategies in the form of policies. To achieve these objectives, it is essential to raise students' awareness of the principles of academic integrity.⁴ Education in ethical behavior, in particular the compulsory teaching of research methodology, would provide significant support in preventing plagiarism. It would enable students to understand the fundamental importance of source criticism, citation and academic responsibility.

The emergence and use of Artificial Intelligence (hereinafter: AI) systems raises quite a few questions in respect of copyright law.⁵ There is still no consensus on whether the use of AI systems qualifies as plagiarism or not.⁶

4 Eszter Benke & Andrea Szőke, 'Akadémiai kultúra és etikai kódexek: vizsgálat a gazdaság-tudományi felsőoktatásban', *Iskolakultúra*, Vol. 34, Issue 9, 2024, pp. 76–95.

5 Anikó Grad-Gyenge & Edit Tomaszovszky, 'Az AI és a szerzői jogi kihívás', in *Mesterséges Intelligencia – felelősségteljes fejlesztések*, Wolters Kluwer, forthcoming, at <https://real.mtak.hu/210037/1/AzAI%20és%20a%20szerzői%20jogi%20kihívás%20%20.pdf>.

6 See Anett Pogácsás, 'A plágium új jelentésrétege? A "társzerzőség" útjai és megítélése a mesterséges intelligencia vonatkozásában', *Iparjogvédelmi és Szerzői Jogi Szemle*, Vol. 19, Issue 5, 2024, pp. 139–155.

Overall, the problem of plagiarism goes beyond individual offences, its impact extends to the whole higher education system, including its ethical, economic, psychological and social dimensions.⁷ Higher education institutions must develop comprehensive strategies that support the strengthening of a culture of academic integrity at the faculty, student and institutional levels, based on common principles and objectives. It is therefore important to understand that plagiarism is not only a problem at the level of the perpetrator, but it also has a serious impact on the reputation of higher education institutions and the credibility of academic work.

2. "He Steals Work and Writes his Name on it":⁸ The Concept, Forms and Dilemmas of Plagiarism

Authorship, the moral norms associated with authorship, already appeared in antiquity, with creators demanding to have their names recognized in the context of their own work.⁹

The term plagiarism comes from the latin *plagiarius* (kidnapper, soul-snatcher), which originally meant a child snatcher.¹⁰ The abducted children were held as slaves, a metaphor for the theft of intellectual property. In antiquity, book copiers were slaves, many of whom were brought to Rome from Greece. The price of copy slaves, especially if they could read and write in Greek, was considerable. In the early days of Rome, most of the professional educators were slaves of Greek origin.¹¹

In antiquity, books were usually copied by someone dictating the text aloud, which the slaves would write down at the same time. Terentius, in his *Eunuchus*, quotes Luscius Lanuvinus as saying that 'it was a thief, not a poet, who told the tale', referring to the literary passages copied from others. A similar approach can be observed in *Martialis*, who compares his own poem to a child that has fallen into the hands of a plagiarist. By the eight-

7 Gábor Király *et al.*, 'Csalással az élre? A hallgatói csalás vizsgálata az üzleti felsőoktatásban', *Vezetéstudomány – Budapest Management Review*, Vol. 49, Issue 3, 2018, p. 36.

8 Mihály Vörösmarty, 'A *plagiarius*', Pest, 1826.

9 Aurél Benárd & István Tímár (ed.), 'A szerzői jog kézikönyve', Közgazdasági és Jogi Könyvkiadó, Budapest, 1973, p. 11.

10 Lexiq.com, 'Plágium', at <https://lexiq.hu/plagium>.

11 Zoltán Gloviczki & László Zsinka, 'Nevelés és iskola az antik és középkori Európában', PPKE BTK, Piliscsaba, 2014, pp. 72–73.

eenth century, literary plagiarism¹² had also been defined as a legal concept.¹³

The concept of plagiarism is widely known, but its exact meaning is not always clear. As the analysis below shows, the definition of the term is complex. In scientific discourse, it is not an uncommon phenomenon that the definition of certain concepts are challenging and there is often a lack of consensus on their interpretation. The essence of plagiarism can be summarized briefly as the use of another people's intellectual property – be it written text, pictures, diagrams, tables, oral communications, videos, data or music – as one's own, either without permission or proper attribution.

The definition of plagiarism varies in emphasis from source to source, reflecting the historical and linguistic evolution of the concept. The ancient definition originally understood the term plagiarism as kidnapping, which meant the unlawful taking of a free man or slave. By contrast, modern definitions use the term exclusively in relation to intellectual works. The Dictionary of the Hungarian Language, the Dictionary of Legal Terms and the Dictionary of Foreign Words and Expressions all emphasize the aspect of copyright infringement, *i.e.*, the communication of another's work as one's own without proper attribution. The etymological analysis shows that the concept's semantic shift from Latin to French has evolved through the French language. The Code of Ethics of the Hungarian Academy of Sciences approaches the issue in a broader scientific context, as it considers not only the appropriation of texts but also the appropriation of ideas and scientific results as plagiarism. According to the definition of the Oxford English Dictionary, the definition of plagiarism includes the idea as a protected element. The idea is not protected under domestic copyright law.¹⁴ Overall, the different definitions have in common the lack of originality and unauthorized

12 The first case of plagiarism in Hungarian literature was the so-called *Íliász-pör*. In this case, the rules for referring to another author are laid down for the first time.

13 In 1740, the Wittenberg professor Augustin von Leyser, developing the Roman legal concept, used the term *plagium litterarium* ('literary plagiarism') to give the author criminal protection. Contrary to the broader moral interpretation, only the knowing and intentional appropriation, in whole or in part, in form or in substance, of works protected by copyright under one's own name constitutes plagiarism in law. It is not plagiarism to make an individual, original adaptation of an idea taken from another work. Benárd & Tímár 1973, p. 12.

14 Act LXXVI of 1999 on Copyright, Section 1(6) Ideas, principles, theories, procedures, operating methods, and mathematical operations are not entitled to receive copyright protection.

misappropriation, but each definition places different emphasis on the ethical, legal and linguistic aspects of the concept.

Plagiarism is a very complex concept, and it is important to separate it from inspiration, idea, coincidental similarity and common knowledge.¹⁵ One form of plagiarism is *ghostwriting*, where a student at a higher education institution submits a piece of writing by another person as his or her own, often in exchange for payment. These works are formally original and properly referenced, yet they constitute a serious breach of academic integrity through misrepresentation of authorship. Plagiarism detection software, such as Turnitin, is usually ineffective, as it primarily looks for text concordance rather than verifying authorship.¹⁶ Online ghostwriting services build professionally on students' insecurities and legitimize unethical use in their advertising.¹⁷ Educators can play a major role in identifying the problem, and, if they are lucky enough to know their students' thinking and writing skills, they may be able to spot this type of abuse. But effective prevention requires a holistic approach: rethinking study tasks, ethical sensitization and targeted teacher support.¹⁸

Artificial intelligence technologies pose further challenges in the detection and prevention of plagiarism. According to a recent survey,¹⁹ nearly a third of students have already used ChatGPT for their academic assignments, which could lead to new forms of plagiarism. While AI tools can be useful in supporting writing, they also increase uncertainty around academic purity. Plagiarism detection²⁰ AI tools such as Turnitin AI, DetectGPT and Ghostbuster are already capable of identifying AI-generated content, but their effectiveness is limited. Techniques such as recursive paraphrasing or authorship obfuscation can easily circumvent verification sys-

15 Gréta Varga & Edit Sápi, 'Idegen tollakkal ékeskedve – plágium "mintázatok" sajátosságai egyes műtipusoknál', *Miskolci Joggató*, 2023/1, p. 95.

16 Shawren Singh & Dan Remenyi, 'Plagiarism and ghostwriting: The rise in academic misconduct', *South African Journal of Science*, Vol. 112, Issue 5–6, 2016, pp. 36–42.

17 Lisa Lines, 'Ghostwriters guaranteeing grades? The quality of online ghostwriting services available to tertiary students in Australia', *Teaching in Higher Education*, Vol. 21, Issue 8, 2016, pp. 889–914.

18 Avodele Morocco-Clarke *et al.*, 'The implications and effects of ChatGPT on academic scholarship and authorship: a death knell for original academic publications?', *Information & Communications Technology Law*, Vol. 33, Issue 1, 2024, pp. 21–41.

19 Héctor Galindo-Domínguez *et al.*, 'Relationship between the use of ChatGPT for academic purposes and plagiarism: the influence of student-related variables on cheating behavior', *Interactive Learning Environments*, 2025, pp. 1–15.

20 Singh & Remenyi 2016.

tems.²¹ However, AI can also play a positive role in the teaching of academic writing. Recent developments, such as the Academic Writing System,²² provide a personalized learning experience and have the potential to shape students' anti-plagiarism awareness, attitudes and behavior.

Overall, technological control alone is not enough to deal with ghostwriting and AI-induced forms of plagiarism. Only education in ethics, awareness-raising among teachers, thoughtfulness in assignments and the development of students' literacy skills can provide a real solution.

3. Where Is the Border?

The plagiarist was branded a thief by the Romans, and his act a theft. In Martialis' epigrams²³ the plagiarist appears several times:

52.

Quintianus.

I commend my book to you, Quintianus; -
- Maybe I can only claim it as my own, though
 Your poet recites it as his own -; [...]
 And if you claim to be an author, say,
 That it is I, I have set you free,
 Shout this in evidence four or five times,
 And the plagiarist is ashamed.

53.

The plagiarist.

Fidentinus, pray, there is a page in my poem,
Which is yours, but is also marked with the master's mark,
 And your poems are obviously branded as theft. [...]
 His varied voice, so hurt by the sarcasm.
 My book does not need an accuser, a judge;
 Your card itself says in your ear, "You thief!"

21 Yin Zhang *et al.*, 'Enhancing anti-plagiarism literacy practices among undergraduates with AI', *Interactive Learning Environments*, 2025, pp. 1–15.

22 Noriko Kano, 'The Efficiency of the Academic Writing System: Can Prewriting Discussion be Eliminated?' *LET Kanto Journal*, Vol. 5, 2021, pp. 39–57.

23 János Csengery, 'Marcus Valerius Martialis epigrammáinak tizenegy könyve a Látványosságok Könyvével', MTA, Budapest, 1942, pp. 70 and 75.

The earliest form of copyright infringement is plagiarism, the first meaning of which – as discussed above – is kidnapping, child abduction, soul theft. It does not require a deep and precise semantic analysis, nor a serious psychological background to understand the meaning of these terms and to feel their impact and energy. A negative sentiment is attached to them, since we associate the activity with appropriation. Plagiarists take something that is not theirs; a kidnapper deceives others as if the child he has kidnapped was his own. A soul-scoundrel is a person who, for his own benefit or that of the group he represents, misleads others on matters of ideology, politics or morality, and seeks to influence them to serve a false cause in good faith.²⁴ Plagiarism has been included in the category of forgery.²⁵ It existed as a moral norm, the violation of which was punishable by public ostracism and humiliation.

Even in the 1700s, plagiarism was considered one of the greatest sins of scientists, but it was difficult to prove. At that time, plagiarism was understood as a scientific technique of paraphrasing, *i.e.*, taking small passages from a work and inserting them into their own text. It was during this period that the practice of Abstraction (making extracts) became widespread, which was considered to be less for the head than for the hand, and therefore it is difficult to distinguish from plagiarism. This period saw the emergence of historiography as an innovation of the time. It was not simply understood as being without reference, but rather as an intellectual dependence on colleagues in the discipline.²⁶

The diagram below clearly shows that plagiarism is at the border between social and legal regulation. As emphasized above, plagiarism is not a legal doctrine and the term is not found in any copyright law. We can speak of plagiarism in cases where the unauthorized use of a work, coupled with a false attribution of authorship, infringes the rights of the original author. Although the two concepts may seem identical to the layman, copyright infringement is a much narrower concept and therefore acts of plagiarism can only constitute copyright infringement in very specific cases.

24 Quoting the Hungarian language dictionary.

25 Tamás Nótári, 'A magyar szerzői jog fejlődése', Lectum, Szeged, 2010, p. 18.

26 Daniel Fulda, 'Plagieren als wissenschaftliche Innovation? Kritik und Akzeptanz eines vor drei Jahrhunderten skandalisierten Plagiats im Zeitalter der Exzerpierkunst', *Berichte zur Wissenschaftsgeschichte*, Vol. 43, 2020, pp. 218–238.

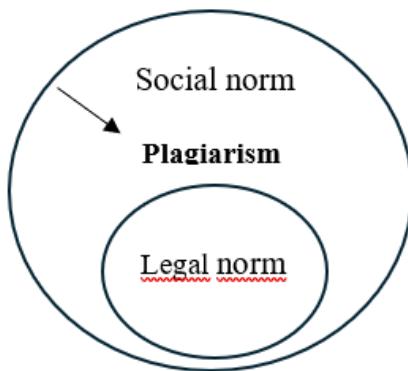


Figure 1. The place of plagiarism in the system of norms

Plagiarism is when someone uses a work created by another author,²⁷ or parts of it, without attribution to the author, or without the author's permission, as if it were their own. In other words, he presents himself as the author, even though he has taken the ideas contained in the words or sentences from someone else. The right of attribution is a moral right which prohibits a work from being published under another person's name or without the author's permission. Related but not identical²⁸ to this is the concept of plagiarism, which is the slavish copying of another person's intellectual work²⁹ and publishing it under their own name or taking extracts or parts of another's work without attribution to the author.³⁰

The right to use the name also provides protection in the less common case where the name of a person other than the author appears on the work.

27 Under current domestic and international legislation, we mean the human being, *i.e.*, artificial intelligence systems are not considered authors. See *Thaler v Perlmutter*, No. 22-CV-84-1564-BAH, at <https://caselaw.findlaw.com/court/us-dis-crt-dis-col/114916944.html>.

28 It is important to emphasize that plagiarism is not the same as the right to attribution, as known from copyright law, nor is it the same as quotation.

29 Plagiarism is also called slavish copying under copyright law. Varga & Sápi 2023, p. 95. The present paper will later discuss the place of plagiarism in the legal-ethical normative system, where I take the position that plagiarism is not a legal category, but an ethical, moral one. In the context of higher education, plagiarism is identified as an ethical concept. I do not agree with the authors' lawyers' understanding of slavish copying as plagiarism. In my view, slavish copying is only one type of plagiarism, not a synonym. The act of slavish copying implies intentionality, but is not supported by several international studies (see *e.g.* John Walker, 'Student Plagiarism in Universities: What are we Doing About it?', *Higher Education Research & Development*, Vol. 17, Issue 1, 1998, pp. 89–106) of plagiarism as a careless form of representation.

30 Dénes Legeza (ed.), 'Szerzői jog mindenkinél', SZTNH, Budapest, 2017, p. 95.

One conceivable form of this is plagiarism in the most extreme sense, or the institution of the 'negro' writers of the mid-nineteenth century. Nowadays, this rule is more likely to be applied in practice when a co-author with greater professional authority 'forgets' to include on the finished work the name of a collaborator who has been involved in a creative way. The personal right to recognition of authorship is a safeguard against such infringements of copyright, all the more so because this right, like all personal rights, is non-transferable, non-sellable and cannot be validly waived by the author in favor of another person.³¹

According to the Great Commentary on the Hungarian Copyright Act LXXVI of 1999,³² it is not the intellectual activity that is protected by the law, but the *result* of that activity, *i.e.*, the work. The interpretation then clarifies that it is not in fact the work itself that is protected, but rather the rights of the rightsholder in relation to the work, *i.e.* the copyright relationship, which is the subject of copyright law. The indirect object of this legal relationship – an indispensable element – is the copyright work. This is where plagiarism itself really comes into its own, since the work must belong to the author, *i.e.*, the work has a personal link to the author, it is subjectively original, and has not been taken from someone else. It infringes the recognition of authorship if someone presents another person's work as their own. Also important in the context of plagiarism is the individual character of the intellectual activity, which is an original, individual, particular expression of the author that must be reflected in the work. The law emphasizes that intellectual activity can only be related to man, and that a work of authorship can only be a work of human authorship. The individual, original character of the content must be expressed in thought, put into the text, in a precise and clearly perceptible manner. As a minimum, the work must not be a slavish copy of another work. And this brings us to the question of whether plagiarism is a legal or an ethical concept.

An interesting and thought-provoking cross-cultural approach to plagiarism³³ is that the form of reference is unfamiliar and incomprehensible to academics of the Far East, but is extremely important in Western culture and academia. Students in the Far East have been socialized to believe that citing sources can be downright offensive, because it implies that one is not famil-

31 Benárd & Tímár 1973, p. 102.

32 Péter Gyertyánfy & Dénes Legeza (eds.), 'Nagykommentár a szerzői jogról szóló 1999. évi LXXVI. törvénnyhez', Wolters Kluwer, Budapest, 2021, 1(6).

33 Tamás Bíró, *Plágium a zsidó hagyományban és a felsőoktatásban*, at <https://birot.web.elte.hu/files/plagium-BT.pdf>.

iar with the sources in question. If they do quote, it is necessary to do so literally, as it is insulting to the quoted author not to quote his words or ideas accurately, but to paraphrase them, which in turn has the effect of correcting the author's words. By contrast, plagiarism is perhaps the greatest scholarly crime in Western academic life. In this community, we rarely find exact, verbatim quotations, and in fact, in academia, exact quotations longer than a few lines are expressly avoided. We prefer to paraphrase the ideas of the author cited in our own words. While in the East, communal knowledge, collectivism is in the foreground, in the West, individual traits and individualism are considered as virtues.

4. The EU Framework on Plagiarism

Almost all studies on plagiarism describe it almost unanimously as the most serious unethical behavior in education. In order to prevent plagiarism and, where appropriate, to reduce its incidence, it is essential to identify and understand the causes of plagiarism. The following summarizes some projects in which the exploration of the possible causes of plagiarism played a significant role.

Higher education institutions have a responsibility to ensure the quality of degrees and academic integrity. Plagiarism undermines this.

Table I. Summary of the European projects about the plagiarism

	ETINED	IPPHEAE	ENAI	SEPPHAI	AIRS
Full name	European Network of Information Exchange on Ethics and Integrity in Education	Impact of Policies for Plagiarism in Higher Education Across Europe	European Network for Academic Integrity	Supporting the Enhancement of Plagiarism Prevention in Higher Education Institutions	Academic Integrity Research Study
Duration	From 2015 to this day	2010–2013	From 2017 to this day	2022–2024	From 2020 to this day
Funding	Council of Europe	European Commission	European	Erasmus+	University and

	ETINED	IPPHAE	ENAI	SEPPHAI	AIRS
		sion (Erasmus, Life-long Learning Programme)	Commission, voluntary membership		research funds
Geographical scope	50 countries (States Parties to the European Cultural Convention)	EU-27 Member States	Global (mainly Europe)	EU Member State	International
Main objective	Promoting academic integrity and fighting corruption in education	Examining the effectiveness of anti-plagiarism policies and making recommendations	Developing academic integrity and building community	Support for preventive measures against plagiarism	Researching and raising awareness of academic integrity
Methodology	Identification and dissemination of good practices, seminars, development of guidelines	Online questionnaires, interviews, case studies	Research, training, recommendations	Development of educational materials and tools	Empirical research, surveys
Main activities	Organizing seminars (e.g. on plagiarism), sharing best practices, developing guidelines	Compare plagiarism policies, collect data from students, teachers and managers, make recommendations	International cooperation, conferences, research	Support for teachers and students, awareness-raising campaigns	Examining academic integrity in different countries
Results achieved	Increasing the capacity of higher education institutions to detect plagiarism, promot-	Recommendations to tackle plagiarism, set international	Developing guidelines for academic integrity,	Development of teaching aids, training materials	Publishing data and research on aca-

	ETINED	IPPHEAE	ENAI	SEPPHAI	AIRS
	ing academic integrity	benchmarks, raise awareness of academic integrity	establishing an international network		demic integrity
Key findings	Academic integrity contributes to improving democracy and the quality of education	Plagiarism management varies across the EU, with institutions not always applying the directives consistently	Institutional support is key to ensuring academic integrity	The effectiveness of measures to prevent plagiarism can be increased	Challenges to academic integrity vary globally, influenced by cultural factors
Recommendations	Raising awareness of plagiarism and academic integrity, establishing common standards and procedures	Developing common policies, international cooperation, developing tools to prevent plagiarism	Enhancing institutional cooperation, supporting education	Expanding education programmes, using prevention tools	Continuation of detailed research, global comparative analyses
Applicability of results	Across Europe, to higher education institutions and government bodies	Within the EU at institutional and national level	For the international academic community	Developing educational institutions and policies	International research and education policy

As far as secondary schools are concerned, the Genius (plaGiarism or crEativity: teachiNg Innovation versUs Stealing) project³⁴ was a program designed mainly for these schools, under the EU's Lifelong Learning Pro-

³⁴ A detailed description of the project can be found here: <https://www.fenice-eu.org/genius-en.htm>. The project is analyzed in detail here: <https://www.sciencedirect.com/science/article/pii/S1877042814006223>.

gramme, in which, alongside the development of digital skills, the issue of plagiarism also played a central role. The project involved seven European countries: Greece, Italy, Portugal, Romania, Spain, Turkey, United Kingdom. Each participating country's higher education institution also supported the above initiative, which was important because it provided participants with reliable information and training on the issue of plagiarism. This could be a very good practice to be followed in the future, so that high school students are already aware of plagiarism, its prevention and the main copyright and ethical principles in general.

5. The Digital Transformation of Plagiarism

The launch of ChatGPT in November 2022 almost immediately triggered a technological panic, primarily due to concerns about the impact of artificial intelligence (AI) on education and research. In the eras of information revolutions, the emergence of new technology has generally caused mass panic; the emergence of the printing press, computers, and the internet followed a similar trajectory.³⁵ In 2021, Sarah Elaine Eaton argued that technology is leading us into a 'post-plagiarism' era – one in which the co-authorship of humans and technology is fully accepted, and the final product is seen as a hybrid creation of both. In this post-plagiarism era, people use AI applications on a daily basis to enhance and refine creative outputs. Soon, it may become impossible to distinguish where human writing ends and machine-generated text begins, as both forms will intertwine and become indistinguishable. The key issue is that while individuals may delegate full or partial control to AI applications, allowing technology to generate content on their behalf, humans remain ultimately responsible for the output. It is crucial to prepare university students for this reality, which is not a distant future but the present.

Where does the boundary lie between AI-generated content and plagiarism? Is there even a clear boundary, or is AI-generated text just another form of plagiarism? The latest large language models (LLMs) are capable of human-level performance in text generation and modification. However, these models can produce inaccurate information, and users may not always

³⁵ Sarah Elaine Eaton, 'Artificial intelligence and academic integrity, post-plagiarism', *University World News*, 2023, at: <https://www.universityworldnews.com/post.php?story=20230228133041549>.

be aware of these limitations. AI-generated texts often either lack proper citations to their sources or produce fabricated references, *i.e.*, the system is ‘hallucinating’.

Under the harmonized copyright framework of the European Union, the fundamental requirement for copyright protection is originality. The EU copyright³⁶ directives succinctly define this principle as ‘the author’s own intellectual creation’, which must express the author’s individual creativity and personality. The CJEU has elaborated on the criteria for originality in multiple rulings (*Infopaq*,³⁷ *Painer*,³⁸ and *Murphy*³⁹ cases), stating that a work qualifies for copyright protection if: (i) the author is able to express their creative abilities through free and individual choices (*Painer*); (ii) the work reflects the author’s personal involvement (*Painer*); (iii) the creative process allows room for the type of artistic freedom protected under copyright law (*Murphy*).

Based on these rulings, most European countries grant copyright protection to works that result from human involvement and where the author has engaged in a substantive creative process. Consequently, works in which AI merely assists human creativity are generally eligible for copyright protection, whereas those entirely generated by AI without human input are typically not. Future legislative developments and court rulings will play a crucial role in determining how AI’s expanding role can be accommodated within the copyright framework.⁴⁰

The European Artificial Intelligence Regulation (hereinafter: AI Act), adopted on 21 May 2024, aims to address the risks posed by AI while fostering innovation. The Act entered into force in August 2024 and will be fully applicable by summer 2026. However, certain prohibitions on specific AI applications came into effect in February 2025. The integration of AI into higher education presents numerous opportunities and challenges, particularly in the realm of academic integrity. As AI technologies become more prevalent in the educational environment, it is essential that institutions implement strategies that preserve academic values while taking advantage of

36 P. Bernt Hugenholtz & João Pedro Quintais, ‘Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?’, *IIC – International Review of Intellectual Property and Competition Law*, Vol. 52, 2021, pp. 1190–1216.

37 Judgment of 16 July 2009, Case C-5/08, *Infopaq*, ECLI:EU:C:2009:465.

38 Judgment of 1 December 2011, Case C-145/10, *Painer*, ECLI:EU:C:2011:798.

39 Judgment of 4 October 2011, *Joined cases C-403/08 and C-429/08, Football Association Premier League and Others*, ECLI:EU:C:2011:631.

40 Eleonora Rosati, *Originality in EU Copyright. Full Harmonization through Case Law*, Edward Elgar, Cheltenham, 2013.

AI's potential. Below, I outline key issues and propose solutions for navigating AI's dual role in academia.⁴¹

When generating content with AI tools, users must first provide instructions, typically through a prompt.⁴² The AI tool interprets this prompt and generates text based on the vast dataset it has been trained on. The AI Act emphasizes transparency regarding the datasets used for training language models. One of the most fundamental issues regarding AI tools is being aware of the sources from which these models derive their content. The determination of whether we are dealing with plagiarism when using AI can only be made based on the answer to the previous question. OpenAI, for example, claims that its various ChatGPT models have been trained on vast amounts of internet-derived data.

The indication of AI application or use in the texts of dissertations prepared by students is the so-called 'accuracy dilemma'. A significant number of domestic higher education institutions use Turnitin software for plagiarism detection. Text-matching analysis plays a crucial role in verifying the authenticity of academic work. However, it is an important question how reliable is it? Generative AI models evolve rapidly, posing challenges for text comparison methods.

Large language models, such as ChatGPT or LaMDA, exhibit significant variations in content quality. Educational institutions must definitely take these facts into account. AI systems often struggle with contextual and semantic understanding, which affects the quality and reliability of their outputs. Opinions vary on whether using AI constitutes academic misconduct or whether improper use is the primary concern – or perhaps the situation may be more nuanced than that. The automatic generation of content as a substitute for independent academic work is perhaps the clearest example of a threat to academic integrity. However, AI can also support academic integrity through advanced plagiarism detection tools, personalized learning experiences, and simulations that promote awareness. Teaching students the ethical use of AI and proper attribution practices is essential.

Researchers identify three main factors driving the increase in plagiarism: the spread of digital technology, the attitudes of newer generations, and cultural backgrounds. Studies indicate that plagiarism is often driven by the desire for higher grades, academic pressure, or differing perceptions of what

41 Thomas Conway, 'AI and Academic Integrity in Higher Education: A Caution on Punitive Approaches', in Tracey Bretag (ed.), *Handbook of Academic Integrity*, Springer, 2016.

42 Nuno Sousa e Silva, 'Prompts as code?' *Kluwer Copyright Blog*, 5 November 2024.

constitutes academic dishonesty. Some students do not even realize they are committing plagiarism or do not consider it a serious issue. Institutions that clearly define academic dishonesty and plagiarism, and enforce strict policies, tend to report lower rates of plagiarism. Research by McCabe et al. suggests that ongoing discussions on academic integrity can help reduce plagiarism.⁴³

The New York Times⁴⁴ has claimed that some of ChatGPT's responses contain near-verbatim excerpts from its articles. If these allegations are accurate, tools like ChatGPT may be plagiarizing the authors of the training dataset by reproducing their words and sentences without proper citation.

6. Is This the End?

A thorough analysis of the concept of plagiarism, along with efforts to uphold academic integrity, demonstrates that plagiarism is primarily an ethical rather than a legal issue, as it endangers the credibility and reputation of the academic community. Legal and ethical approaches to plagiarism, particularly the measures implemented within the framework of EU projects, provide a crucial foundation for preserving academic integrity. European-level guidelines and initiatives, such as researcher ethics codes and anti-plagiarism programs, represent significant progress in reducing and preventing plagiarism. Higher education institutions must combat plagiarism through both legal and ethical means to ensure the authenticity of theses and the integrity of academic writing and research. The projects discussed in this paper play a fundamental role in shaping students' ethical behavior. On the long run, these efforts can help ensure that students fully comprehend the importance of academic integrity and recognize the legal and ethical consequences of plagiarism.

Considering the numerous challenges associated with the interpretation of plagiarism, it is essential to develop a comprehensive action plan that formulates recommendations for addressing plagiarism effectively in the future. These recommendations should, on the one hand, promote a more

43 Katalin Doró, 'Students' perceptions of cheating and plagiarism: An exploratory study among Hungarian EFL undergraduates', in Beatrix Fregan (ed.), *Success and challenges in foreign language teaching*, Nemzeti Közszolgálati Egyetem, Budapest, 2014, pp. 43–47.

44 Bobby Allyn, 'The New York Times takes OpenAI to Court', *npr.org.com*, 14 January 2025, the lawsuit is available at https://nytco-assets.nytimes.com/2023/12/NYT_Complaint-Dec2023.pdf.

unified approach and, on the other hand, emphasize the necessity of recognizing the different forms of plagiarism interpretation and imposing corresponding sanctions accordingly. To achieve a more standardized approach, the European Code of Conduct for Research Integrity⁴⁵ could serve as a model for all higher education institutions within the EU. Furthermore, it is important to strengthen cross-border cooperation, which is key to the exchange of legal enforcement experiences related to plagiarism. The coordinated protection against plagiarism (primarily software that examines text similarity) fills a crucial gap. It is of paramount importance to distinguish between intentional and unintentional plagiarism, with appropriate differentiation in the application of sanctions. Additionally, the rules and penalties concerning plagiarism must be defined with precision and detail, particularly in relation to students. Moreover, higher education institutions should make research methodology training mandatory, focusing on the practical development of writing skills and creative thinking to provide a solid foundation for academic integrity.

Ultimately, the effective fight against plagiarism will be successful only if the appropriate combination of ethical standards, legal regulations, and education is achieved. The future academic community can function effectively and credibly only if ethical research conduct and anti-plagiarism practices are prioritized in both education and research.

45 See at <https://allea.org/code-of-conduct/>.