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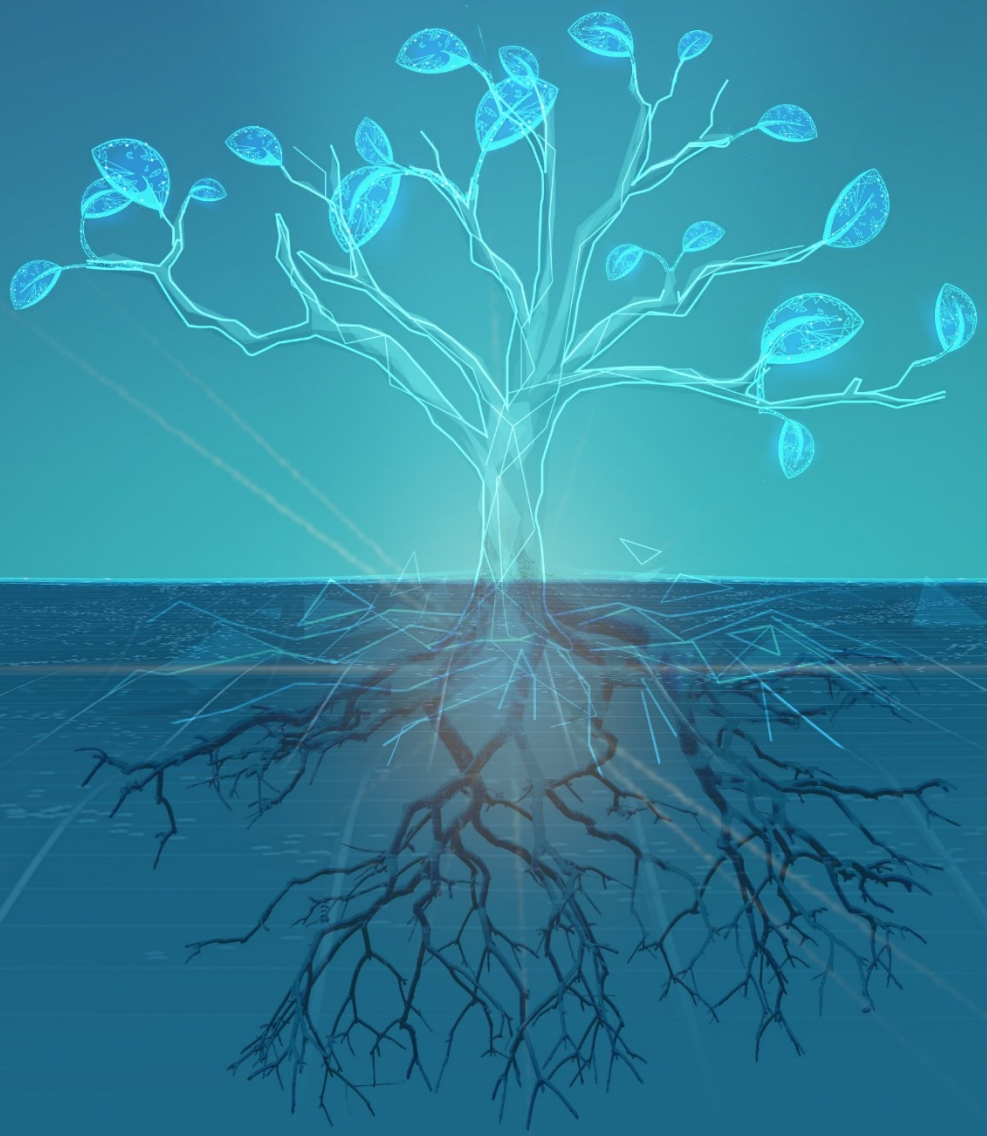

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Institut International de Recherche et d'Action sur la Fraude et le Plagiat Académiques (IRAFPA)

International Institute of Research and Action on Fraud and Plagiarism in Academia (IRAFPA)

Website: https://irafpa.org

Postal Address:

IRAFPA c/o Tal Schibler, DGE Avocats

Rue Bartholoni 6

1204 Geneva

Switzerland

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Editorial

Heidi Reed, Audencia (France)

ORCID: 0000-0003-2693-7953

Cinta Gallent-Torres, University of Valencia (Spain)

ORCID: 0000-0002-4260-7594

Academic integrity is recognized as a fundamental element of quality and trust in higher education. Recent research shows that promoting integrity is not only about preventing misconduct but about creating environments in which ethical behaviour is understood, supported and encouraged. To achieve this, institutions need coordinated actions that involve policies, teaching practices, assessment design and a shared understanding of roles and responsibilities across the institution, especially as the widespread use of digital tools and generative AI (GenAI) introduces new challenges, making it even more necessary for universities to implement strategies that promote responsible academic practices.

In this context, it becomes clear that existing approaches to integrity are still far from sufficient. Universities often lack dedicated staff to monitor ethical practices and ethics committees frequently have limited capacity to address complex cases. External supervision mechanisms are rare, and institutional policies are differently applied across departments and faculties. As a result, ethical principles are often disconnected from day-to-day academic practices, highlighting the need for more coherent and comprehensive strategies that embed integrity as a core aspect of institutional culture rather than treating it as a set of isolated rules.

Given these challenges, the *4th International Colloquium for Research and Action on Academic Integrity*, hosted online by the University of Coimbra on 19-20 June 2025, offered an opportunity to reflect on how higher education institutions can implement and sustain cultures of integrity. The two-day programme brought together contributions on ethical academic promotion, sociocultural drivers of fraud, decolonial

perspectives on integrity, behavioural interventions, students' perceptions of responsibility, and the emerging challenges posed by AI. These discussions show both the urgency of the problem and the diverse strategies that universities can adopt to strengthen integrity as a core academic value.

Among the contributions, Pedro Urbano and Marie-Frédérique Bacque remind us in their historically grounded essay that academic fraud is not a new phenomenon though recent technological developments such as GenAI amplify and create new challenges. They point out that honesty in science is not only morally virtuous, but it is a "practical necessity" of the scientific process. One would expect then that academic institutions would be exceptions of integrity, yet we are faced with a "pandemic" of academic fraud. By tracing the evolution of what they understand to be a social phenomenon, they argue that the causes of academic fraud are technological, social, cultural, epistemological, but most importantly psychological. Dishonesty begins with dishonest individuals. They argue that institutional level phenomena, such as the "Taylorisation of research", act as catalysts that lead individuals with certain predispositions to engage in fraud that they otherwise would not have.

Taking a philosophical perspective, Helen Titilola Olojede asks whether GenAI and research ethics are a contradiction in terms that no institutional policy can overcome. She first examines the definition and nature of research integrity before exploring frameworks and guidelines on AI use in research and writing from a range of academic institutions including UNESCO, universities, academic journals and scientific associations. She argues that while these institutions provide guidance on how to use these tools responsibly, they do not address the ethical concerns behind their creation or how they work. Given the lack of ethics embedded in these tools, she suggests that it is perhaps impossible to use them in a way that fully upholds integrity, but by following institutional guidelines, we may attempt to 'integritise' their use to the extent possible. The remaining articles, however, note that such policies are currently undeveloped or unclear.

Bassem Kandil and Estelle Rached's empirical study explores the practices and perceptions of both master's students and educators on the use of GenAI in thesis research and writing. Through qualitative interviews and a focus group, they examine how graduate students construct their own understanding of academic integrity given a lack of comprehensive university policies. They show how students self-regulate and

often rely on less official guidance from supervisors and peers. On the one hand, they find that students are deeply concerned with ethics and the responsible use of GenAI use, especially around plagiarism and authorship. On the other hand, the lack of clear guidelines sometimes enables students to rationalize otherwise ethically questionable uses. Based on these findings, they recommend not only that institutions provide updated and clear policies but also that academic integrity should be redefined in the digital age of AI. Finally, they argue that policies alone are not enough and add that AI ethics must be taught to students.

Ana Pedro's review of the literature on plagiarism and academic integrity in Portuguese higher education likewise highlights how GenAI and other technological developments necessitates renewed research into this phenomenon. In particular, she notes that most studies focus on student perceptions of plagiarism and decries a lack of research on teacher perspectives and institutional policies. She highlights that the issue is not only having comprehensive ethical codes and policies, but students' awareness of them. Similar to Kandil and Rached, she argues for a pedagogical strategy in which students are taught integrity using practical approaches such as proper citing techniques to avoid plagiarism. To this end, she criticizes that institutional policies often lack a preventative approach. To address the gaps in current research, she calls for greater participation from the academic community in the form of hosting colloquiums or conferences to explore these issues and to develop better practices.

In conclusion, the work presented at the *4th International Colloquium for Research and Action on Academic Integrity* shows how challenging it is to promote academic integrity in the digital age. It explains how technology, social and cultural factors, and human behaviour influence academic practices and how current rules and procedures often do not address these issues. These findings show the importance of ongoing reflection, dialogue and renewed approaches to support integrity as a living value within higher education.

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From Sociopathy to the Academic Fraud Pandemic: New Insights upon the Human Factor

Pedro URBANO; ORCID: 0000-0002-7547-3035[1]

Professor, University of Coimbra, CEIS20, FPCEUC; CIEM

Marie-Frédérique BACQUÉ; ORCID: 0000-0001-6223-4409

Professor, University of Strasbourg, SuLiSoM; CIEM

Abstract

This reflection revisits an earlier text on the relationship between new generations of researchers and academic fraud, developing it in a broader direction but at the same level of analysis: the human factor, as defined by the psychological and sociological contexts of academic fraud, is the first and most important explanation (but not the only one) for dishonest behaviour in science and academia.

Keywords

Academic fraud, plagiarism, unethical behavior, Gen Z, human factor, Generative AI.

Résumé

Cette réflexion reprend un texte antérieur sur la relation entre les nouvelles générations de chercheurs et la fraude académique, en le développant dans une direction plus large, mais au même niveau d'analyse : le facteur humain, tel que défini par les contextes psychologiques et sociologiques de la fraude académique, est la première et la plus importante explication (mais pas la seule) qui rend compte des comportements malhonnêtes dans la science et le monde universitaire.

[1] The work of Pedro Urbano was funded by FCT-Fundação para a Ciência e a Tecnologia under the project UIDB/00460/2020

Mots-clés

Fraude académique, plagiat, comportement contraire à l'éthique, génération Z, facteur humain, IA générative.

Introduction

The metaphorical expression ‘academic fraud pandemic’ is effective. Through a combination of narrative simplicity, cognitive clarity and emotional resonance, it draws attention to a major problem affecting academia as a *whole*[2] that, until recently, was not widely recognised. Fraud would be serious in any context, but it is especially critical in academia. It directly affects its core, its primary function of producing, preserving and transmitting scientific knowledge, as it violates the fundamental and founding principles of science, including the search for truth, honesty, transparency and responsibility. In this sense, fraud undermines the integrity and credibility of the academic community. It also undermines academic institutions ’pedagogical function of educating, training and promoting critical reflection.

Used ironically in this text, it is not intended to cause alarm, fuel panic or oversimplify a highly complex social phenomenon. The aim is simply to draw attention to the problem itself by postulating that there are fundamental differences between fraudulent behaviour at the end of the 20th century (or earlier) and the scale to which the phenomenon has grown in the 21st century. The metaphor of ‘contagion’ emerges within this specific framework. In the fields of psychology and sociology, the concept has proven to be a valuable tool for elucidating the propagation of ideas, behaviours or trends within groups, communities and societies in a manner that is analogous to the dissemination of infectious diseases. It is in this context that the phenomenon of epidemics of narcissism (Vater et al., 2018), obesity (Caballero, 2007) and myopia (Dolgin, 2015) can be discussed. Although it is imperative to acknowledge that a

[2] The term ‘academic fraud’ (along with associated notions such as academic dishonesty and academic misconduct) is frequently employed to denote actions on the part of students that contravene the anticipated norms of a university or other educational institution. Nevertheless, in this text, a more extensive interpretation has been adopted. It is proposed that the term will refer to deliberate acts of deceit, dishonesty, or misrepresentation carried out in research, teaching, or scholarly work, with the aim of gaining an unjustified advantage or undeserved acclaim. This definition encompasses researchers, teachers and students, and its primary forms, such as research misconduct (which includes plagiarism, fabrication and falsification of data) and other unethical practices (for example, duplicate publication, ‘salami slicing’, suppression of negative results or selective reporting), undeclared conflicts of interest in research or peer review), as well as misrepresentation (for example, falsifying authorship, as in ghostwriting or honorary authorship) and cheating in academia (exam cheating and contract cheating, as in essay mills and ghostwritten theses).

thorough description of a phenomenon merely signifies the initial phase in its scientific inquiry, preceding comprehension and, where feasible, explanation.

However, addressing academic fraud as a social phenomenon is not easy, particularly when it comes to taking that first step. On the one hand, the clandestine nature of the group engenders a certain degree of invisibility. Conversely, in contradistinction to obesity or myopia, for instance, it is challenging to define, let alone operationalise and measure with rigour and objectivity.

This phenomenon is yet more challenging to apprehend. Academic institutions should, in principle, be bastions of integrity and honesty, as their primary objective is to disseminate truth and knowledge. Consequently, the occurrence of dishonesty and fraud within academic settings would appear to be an anomaly. Secondly, social phenomena tend to be very complex — even those that appear simple, as they typically result from underlying factors. The phenomenon of academic fraud is, in fact, extremely complex. Attempting to comprehend it as a simplistic, unidimensional phenomenon is a futile endeavour. A multi-faceted approach is requisite, with the epistemic subject (the human researcher) serving as the point of departure.

This text aims to provide a brief yet broad reflection on the various causes of fraudulent behaviour in the organised world of higher education, research and scholarship. These causes are categorised according to their nature: technological, social or cultural, epistemological and psychological. While the aforementioned causes and categories are important and possess varying degrees of explanatory power, it can be argued that the psychological dimension is the most relevant for explaining the logical contradiction mentioned above, particularly when the phenomenon reaches pandemic proportions. Firstly, for dishonesty to exist, there must be dishonest individuals. Conversely, academia cannot exist without academics (epistemic subjects) and the work these professions require tends to necessitate specific cognitive and personality traits to be productive and successful. These traits include patience, persistence, the ability to delay gratification, and the capacity to project oneself into the future.

Science and dishonesty: A fundamental contradiction

From its earliest beginnings, science has been shaped by the ambition to uncover the truth about our world. However, the relationship between science and truth is far from straightforward. Rather than being a static collection of certainties, science is a dynamic, self-correcting endeavour. As Poincaré (1908) noted, “science is built up with facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house” (p. 168). On the other hand, science can be considered a complex adaptive system, as defined by Murray Gell-Mann. Not only is it complicated (i.e., composed of multiple parts, where the whole cannot be reduced to its parts), but it is also capable of learning, evolving, and responding to changes in its environment (Gell-Mann, 1994).

Science has produced knowledge that is amongst the most reliable that humankind has ever created; however, it is important to acknowledge that all of the scientific establishment's assertions are provisional and that theories are merely approximations of final truths. In order for the scientific community to advance, honesty must prevail. The principle of honesty is the guiding principle that informs the process. Should the integrity of the data be compromised, or should the results prove to be less than satisfactory, the result will be the loss of the compass. It is imperative to acknowledge that the refinement of scientific models is contingent upon the identification and documentation of failures, anomalies and uncertainties. This process is of paramount importance. In this sense, honesty can be regarded not only as a moral virtue, but also as a practical necessity if science is to fulfil its mission. The pursuit of truth is predicated on honesty, and an absence of honesty in the search for truth will inevitably result in its collapse. Irrespective of the sophistication of the experiment or the ingenuity of the theory, an accurate report is essential for comprehension. Science is therefore predicated on a fragile yet vital agreement: that observations will be described as they are. In the scientific community, honesty is defined by more than the mere avoidance of scientific misconduct. This process entails the ability to resist the insidious allure of self-deception, to acknowledge the inherent limitations of knowledge, and to present results as they are, rather than as one wishes them to be.

This suggests that science is one of the human endeavours most resistant to dishonesty, fraud and deception. However, academic dishonesty is also a complex adaptive system in itself. Indeed, even a cursory examination of history is sufficient to

conclude that academic fraud is a long-standing phenomenon, despite its scope being confined for many centuries. However, and most significantly, it has undergone substantial evolution over the centuries, aligning with the advancements in academia, particularly following the dissemination of personal computing in the 1970s and, remarkably, since the late 2010s and the advent of generative AI.

Academic fraud: From Martial to AI language models

The word ‘academia’ comes from Plato’s Academy, one of the earliest known institutions devoted to the pursuit of knowledge. This means that academia has been around for over 2,300 years. The word ‘plagiarism’, meanwhile, was coined by Martial around 100 CE, when he complained that another poet had ‘stolen’ his verses and urged that he be denounced to shame the plagiarist (*impones plagiario pudorem*[3]) long before Erasmus of Rotterdam satirised plagiarists in the 16th century (Bacqué & Urbano, p. 53). As it is an ancient problem in literature and the fine arts, it is necessarily an ancient problem in academia. In fact, it is much older than the oldest of universities.

As extensively documented, plagiarism represents just one example of the various forms of dishonesty and fraud that are impacting academia today. This phenomenon is, as with many such behaviours, dynamic, adaptable and complex, and is subject to constant evolution. This remains valid even when the scope of the analysis is restricted to the last fifty years. For instance, when Umberto Eco wrote *How to Write a Thesis* (1977), he could not have foreseen how his words would be interpreted five decades later. In fact, outside the context of the time, his ironic advice to copy a thesis already done a few years earlier at *another* (but not the same) university (p. 27), risks being taken literally, thereby losing its humorous tone, despite the obvious irony of the author and the explicit paradoxical nature of the advice.

Indeed, a considerable amount of change has occurred in the past fifty years. The period under discussion saw the emergence of the so-called ‘1977 trinity[4], which initiated the microcomputer revolution and engendered a perpetual transformation of

[3] ‘Shame the plagiarist’.

[4] This term was coined by *Byte* magazine in September 1995, to mark the launch of three landmark microcomputers that, together, crystallised the concept of the personal computer as a consumer product: The Apple II, the Commodore PET and the RadioShack TRS-80. These three machines set technical and commercial standards for all subsequent personal computers in an extremely short period of time.

the IT landscape in technological, economic and social respects. Notwithstanding the fact that the term ‘revolution’ should be avoided due to its excessive and hyperbolic use, in this case there is no obvious alternative. Personal computers were indeed revolutionary (and not merely evolutionary) in the sense that they transformed almost everything at the same time, giving rise to entirely new ways of working, playing and communicating. Even plagiarism[5].

In a second phase, they increased their reach while continuing to facilitate it. From the mid-1990s onwards, the phenomenon of the World Wide Web allowed generalised access to the internet. This went from being almost non-existent at the beginning of that decade to almost omnipresent[6], providing access to an ever-increasing number of sources that could be copied. This has been further amplified by the fact that publishers of scientific literature and universities themselves have embraced the web phenomenon by starting to digitise their previous print-based publications and publish directly in digital format. In practice, the opportunities for ‘simple plagiarism ’have increased exponentially due to widespread (though not always free) instant and anonymous access to ever-larger digital archives of specialised literature, including dissertations, theses, scientific articles, book chapters, entire books, manuals and encyclopaedias. It is important to note that neither of these two phases resulted in a significant increase in plagiarism or plagiarists. The estimation of such numbers is always difficult. However, as time progressed, there was a subsequent shift in its *modus operandi*. The phenomenon evolved from simple forms of plagiarism, such as ‘verbatim plagiarism’,’ to more sophisticated and less overt forms. These include mosaic plagiarism, paraphrasing, and self-plagiarism.

The third phase is challenging to correlate with a specific, datable occurrence. However, to avoid oversimplification of such a complex phenomenon, it is possible to posit that it was a transformation from quantity to quality. The progressive escalation in the (ever-increasing) number of (easily accessible) sources of knowledge

[5] Clearly, computers did not create academic plagiarism. However, they have modified its modus operandi in a far-reaching and profound way. Initially, computers greatly facilitated plagiarism: copying a sentence, a paragraph or even dozens of pages now takes literally a second and involves little work or effort. More precisely, they facilitated ‘simple plagiarism' or ‘verbatim plagiarism,’ through ‘copy and paste.’

[6] All this happened in just a few years: according to Roser (2018), estimates for 1990 suggest that only 0.5 per cent of the world’s population was online, in sharp contrast to what happened just a decade and a half later, with figures above 75 per cent in many Western countries. For example: USA (76%), France (86%), South Korea and Japan (93%) Denmark and Norway (97%).

culminated in a ‘critical threshold. ’In particular, new forms and behaviours emerged. For instance, the marked intentionality and growing sophistication of means progressively replaced the previous, relatively naïve, often opportunistic or residual forms. Furthermore, novel phenomena have come to the fore, including predatory journals and new agents such as human actors, economic interests, systems of hegemonic power that are challenging to identify, and even countries with no prior tradition of scientific research.

The fourth phase is of a particularly recent vintage, having emerged within the recent past and being observable in the present. It is temporally concomitant with the emergence and popularisation of large-scale language models in the form of conversational agents. These agents are based on generative AI and are capable of producing coherent and contextually relevant texts that are increasingly similar to, or indistinguishable from, those produced by human beings. The majority of aspects pertaining to this phenomenon remain to be studied, described, and understood; in other words, they are *terra incognita*. The prevailing conditions have been identified as those conducive to the escalation of plagiarism and associated fraudulent practices, particularly in view of the potential for their uncontrolled proliferation.

Academic fraud: The role of society and culture

Despite the existence of a persuasive body of anecdotal evidence suggesting that computers and associated technologies facilitate plagiarism and other forms of dishonest practice, it is important to recognise that these technologies did not originate such practices. Instead, they have been employed to enable their proliferation. However, the responsibility for this pandemic of academic fraud cannot be attributed to them.

The same cannot be said of numerous social factors that characterise the reality of 21st century academia, and which directly or indirectly foster or encourage the use of fraud. As mentioned earlier, the tyrannical and long-standing pressure to publish is directly implicated in various unethical practices, as well as fostering other phenomena such as predatory journals (Bacqué & Urbano, 2025). In accordance with the observations of Bok (2003), it is also pertinent to note the escalating commercialisation

of universities, propelled by market forces, which is progressively eroding the fundamental values and integrity of higher education. In the same vein, excessive concern with academic productivity, as well as the misuse of metrics to quantify it, lies at the root of numerous examples of misconduct, as per Campbell's Law. Similarly, without intending to be exhaustive, it is also possible to mention the active role played by some 'emerging 'and/or 'predatory' economies, whose institutional maturity is questionable. A salient feature of their accelerated industrialisation and economic growth has been the aggressive appropriation of the intellectual property of others, including their work, creativity, ideas, concepts and designs. This practice concerns not only industry and technology, but also science. Scientific fraud is one example of this, having become pronounced or rampant in some of these countries, at least since the early 2000s, and which can be gauged by indicators such as high rates of scientific article retraction, often related to misconduct involving data fabrication and falsification, plagiarism, and false peer reviews (Castillo, 2014; Rivera & da Silva, 2021; Van Noorden, 2023). And there would be much more to say on this topic, including the emergence and spread of predatory journals or paper mills (Else & Van Noorden, 2021; Grudniewicz et al., 2019; Ro & Leeming, 2025; Sanderson, 2024).

Indeed, the role of society and culture is crucial to understanding the phenomenon of academic fraud. The pressure on academia to produce results is a consequence of the general trend of consumerism and mass production identified by Lasch (1985). Therefore, scientific research has also begun to produce goods for immediate consumption. The compulsion to obtain the 'latest innovation' of electrical appliances or hi-fi equipment, as described by Lasch (1985), has spread to the 'state of the art' in scientific literature, encompassing new trends in topics explored or methods employed. In both cases, 'their value lies not in their usefulness or permanence but in their marketability' (Kobo edition, Chapter 1) This change was accompanied by a phenomenon known as 'Taylorisation', which refers to the process of reducing scientific research to a more accessible and simplistic form, thereby diminishing its complexity, originality and autonomy. This transformation has been observed to occur at the expense of the depth and complexity that characterise scientific research in its original state. In other words, as was the case with factory work in the early 20th century, the 'Taylorised science' had profound direct implications for 21st-century academia. The aforementioned implications encompassed the enhancement of

efficiency and standardisation in research methodologies, alongside the imposition of metrics and the cultivation of productivity pressures. The emergence of perverse incentives, such as the ‘publish or perish ’mentality, was also a consequence. Indirect implications of the aforementioned factors included the alienation experienced by many researchers and the depletion of their expertise. The advent of specialisation and division of labour, accompanied by the breakdown of complex tasks into repeatable, quantifiable steps, has effectively rendered expertise in a specific domain accessible to a considerable proportion of the population.

Academic fraud: The emergence of new participants

It is evident that not all branches of science have been affected in equal measure by successive revolutions in science, technology, and society over the past three or four centuries. The exact sciences are less prone to various forms of academic dishonesty due to the nature of their research subjects. While the possibility of fraud persists, it becomes more straightforward to detect and expose in these sciences, which are both more established and more firmly anchored. The aforementioned sciences have also witnessed the development of enhanced mechanisms for verifying, validating or refuting conjectures, hypotheses and results.

Similarly, truly experimental sciences — not just empirical ones — are also more protected from fraud. This is because it is easier to implement objective methods of manipulating variables, rigorous ways of observing reality, and relatively simple methods of replicating procedures and methods to confirm (or not) the obtained results. However, this does not mean that they are free of other problems. For example, new technological resources and instruments (including those enabled by AI) often allow for mass production as if it were a factory process. This tends to compromise or annul the epistemological value of the results and (supposed) knowledge. Similarly, in some of these sciences, including the natural and life sciences, simplified and stereotyped methodological models are often used. There are even routines or ‘templates ’that just need to be repeated. This makes it possible to produce material for a scientific article in a few days without resorting to plagiarism or other fraudulent practices, even though epistemological value of the latter is reduced or even absent.

In contrast, substantial components of the social sciences and humanities are situated at the opposite pole of the spectrum. For instance, the fabrication and falsification of data can have a significant impact on the natural and life sciences, particularly biomedical research, where the pressure to publish and obtain funding is high. However, such practices appear less applicable in the humanities, where the pressure to publish is significantly less pronounced. The subject is too extensive to be addressed in this discussion, but it can be argued that these sciences tend to be less certain and have fewer verification mechanisms due to various limitations relating to their state of development and the characteristics of their objects of study. Galbraith's observations in 1958 concerning the social and economic sciences, that they allow one to hold a belief without the need to demonstrate it, can also be applied in this context. The consequence of this state of affairs is that, within the humanities and social sciences, while the fabrication of data remains a possibility (a phenomenon exemplified by the work of Diederik A. Stapel[7] in the domain of social psychology; Callaway, 2011), there will be an inclination towards the adoption of other practices that are equally, if not more, dubious. These include *p*-hacking (data dredging) and HARKing (Hypothesizing After the Results are Known).

In other words, the stage of development of a science has been shown to render it more or less vulnerable to societal pressures and cultural trends. When considering this alongside the phenomenon of 'Taylorised science 'or a dominant culture organised around mass consumption — which, according to Lasch (1985), encourages narcissism — a more complete understanding of the arrival of new participants in academia, both individually and collectively, including those who did not historically engage with it, can be achieved. A contributing factor to this phenomenon is the perception of a career in academia as both accessible and appealing, a notion that has been further perpetuated by a misguided or excessively idealised depiction of science and scientists, prevalent in stereotypical representations found in global television, films and social networks. While there are several other social, cultural or individual reasons that also explain the worldwide expansion of tertiary education[8] and scientific

[7] "When colleagues called the work of Dutch psychologist Diederik Stapel too good to be true, they meant it as a compliment. But a preliminary investigative report (go.nature.com/tqmp5c) released on 31 October gives literal meaning to the phrase, detailing years of data manipulation and blatant fabrication by the prominent Tilburg University researcher" (Callaway, 2011).

[8] For example, the OECD's "Population with Tertiary Education" indicator shows that, in recent years, ~41.2% of 25- to 64-year-olds in OECD countries have a tertiary qualification. This proportion was considerably lower half a century ago, at around 6% in 1970 (World Bank, n.d.; Our World in Data/Ritchie, 2023).

research[9] — including global population growth and economic development— this phenomenon is still worth considering.

It is evident that not all new entrants possess the necessary cognitive characteristics, personality type or motivations that are suitable for the academic profession. Without resorting to idealisation of either academia or science, and without asserting the existence of a singular academic or scientific profile, it is evident that the pursuit of work within these domains often demands the presence of specific mental attributes for optimal productivity and success. To illustrate this point, the capacity to systematise can be regarded as a pivotal cognitive instrument in the process of navigating intricate accumulations of raw data in pursuit of discernible structures, including patterns, regularities, and periodicities. As stated by Medawar (1963), the notion of a singular scientific mind may be a fallacy[10]. However, it is important to acknowledge that the ability to engage in scientific research and practice is predicated on the possession of this capacity (Urbano, 2021, p. 33). In addition to these cognitive characteristics, others have been posited that pertain to personality and the inherently frustrating nature of scientific research and the profession itself. A scientific career is often a lifelong commitment that offers minimal financial compensation or public recognition. It frequently entails extended periods of uninterrupted dedication, with limited opportunities for personal time off (Bacqué & Urbano, 2025). It is legitimate to question whether the evident psychological vulnerabilities of these new members will render them more susceptible within an academy under pressure to produce immediate, quantifiable outcomes. Should this be the case, there is a possibility that they may be more inclined to resort to ethically questionable practices.

A more salient issue, however, pertains to the psychopathological profile of some prospective participants, which may encompass individuals predisposed to fraudulent behaviour, including those diagnosed with antisocial personality disorder —often

[9] According to the *UNESCO Science Report* (2021), the number of scientists worldwide grew by 13.7% between 2014 and 2018, reaching about 8.8 million.

[10] “There is no such thing as a Scientific Mind. Scientists are people of very dissimilar temperaments doing different things in very different ways. Among scientists are collectors, classifiers and compulsive tidiers-up; many are detectives by temperament and many are explorers; some are artists and others artisans. There are poet-scientists and philosopher-scientists and even a few mystics. What sort of mind or temperament can all these people be supposed to have in common? Obligative scientists must be very rare, and most people who are in fact scientists could easily have been something else instead” (Medawar, 1963, p. 850).

designated as ‘psychopaths’ or ‘sociopaths’[11]— given the propensity for dishonesty that characterizes these conditions.

It is evident that dishonesty does not manifest exclusively within any specific personality type or disturbance. Nevertheless, it is a common occurrence among individuals who are deemed to be clinically disturbed and who demonstrate antisocial tendencies, in addition to deficiencies in empathy, remorse, and guilt. These individuals often engage in dishonest behaviour when they perceive a potential benefit[12]. Despite the lack of scientific evidence suggesting an increase in the prevalence of psychopathy or sociopathy in absolute terms[13], further research is required to determine whether their relative prevalence in academia has changed. Such individuals have traditionally been considered unsuitable for scientific careers, either due to a perceived lack of interest or motivation, or a manifest lack of the necessary skills. Nevertheless, the emergence of novel demographic, economic or sociocultural realities has the capacity to profoundly influence this dynamic, thereby modifying the conditions of access to scientific practice.

Conclusion

It is imperative to recognise that academia cannot be considered as an isolated entity; consequently, any analysis of the intricate social phenomenon of academic fraud must be conducted with a thorough understanding of the profound global transformations that inexorably impact it. For instance, the phenomenon of the ‘Taylorisation’ of scientific research, which, by stripping it of meaning, creativity and autonomy, has been simplified to the point of becoming accessible to people, whose cognitive and

[11] Psychopathy and sociopathy are not recognised as formal psychiatric diagnoses, despite their historical presence in early psychiatry and their continued prevalence in popular discourse. The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) employs the term ‘Antisocial Personality Disorder’ in lieu of the previously utilised designation (American Psychiatric Association, 2013), whereas the *International Classification of Diseases,* 11th Revision (ICD-11) uses the term ‘Dissocial Personality Disorder’ (World Health Organization, 2019).

[12] Consequently, despite the absence of a linear causal relationship, this personality disorder is frequently observed in individuals who engage in delinquent behaviour or are incarcerated.

[13] For example, a meta-analysis of Western adult populations reports that 12.16% have any personality disorder. Within that, Cluster B disorders (which include ASPD) have prevalence rates between 5.5% and 7.2%, though ASPD specifically often appears at the lower end (Volkert et al., 2018). Instead, an increased awareness, discourse and cultural framing of antisocial traits is observable, particularly within the domains of politics, business and media.

personality profiles would not normally guide them in that direction.

The phenomenon of academic dishonesty or academic misconduct cannot be explained only by the personality or psychological profile of those who engage in it. However, this constitutes a solid foundation for the description, comprehension and, if feasible, explanation of the phenomenon. The fundamental basis of academia and science is the result of human effort, motivation and aspirations rather than that of laboratories, instruments or methods. The foundation for this endeavour must be the study of human beings.

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Research Integrity and Generative Artificial Intelligence: An Oxymoron?

Helen TITILOLA OLOJEDE

Professor, Department of Philosophy at National Open University of Nigeria, Abuja, FCT.

ORCID: 0000-0001-9590-5037

Abstract

The prevalence of Generative AI (GenAI) poses several challenges. A study involving more than 1600 scientists found that almost 30% employed GenAI in writing papers, with another 15% in grant applications (Prillaman, 2024). The heavy influence of LLMs in academic writing is evident in an analysis of 950,965 papers between 2020 and 2024, with the swiftest and largest increase of 17.7% in Computer Science. Indeed, fraudulent research practices have increased since the launch of ChatGPT (Olojede, 2024). An overarching concern GenAI has brought into higher education is the issue of academic integrity. But what does research integrity specifically mean in the age of AI? Using philosophical tools of argument, critical thinking, and reconstruction of ideas, this paper argues that while the developmental process of GenAI is anathema to the principles of research integrity, the human using the tools can attempt to salvage the situation by adhering to integrity principles.

Keywords

AI, research, generative AI, integrity, higher education

Résumé

La prévalence de l'IA générative pose plusieurs défis. Une étude menée auprès de plus de 1 600 scientifiques a révélé que près de 30 % d'entre eux utilisaient l'IA générative pour rédiger des articles, et 15 % pour remplir des demandes de subvention (Prillaman, 2024). L'influence considérable des LLM dans la rédaction académique est évidente dans une analyse de 950 965 articles publiés entre 2020 et 2024, avec une augmentation rapide et importante de 17,7 % en informatique (Prillaman, 2024). En effet, les pratiques de recherche frauduleuses ont augmenté depuis le lancement de ChatGPT. L'une des principales préoccupations soulevées par l'IA générative dans l'enseignement supérieur est la question de l'intégrité académique. Mais que signifie précisément l'intégrité de la recherche à l'ère de l'IA ? À l'aide d'outils philosophiques d'argumentation, de pensée critique et de reconstruction des idées, cet article soutient que si le processus de développement de la GenAI est contraire aux principes d'intégrité de la recherche, les humains qui utilisent ces outils peuvent tenter de sauver la situation en adhérant aux principes d'intégrité.

Mots-clés

Intelligence artificielle, recherche, IA générative, intégrité, enseignement supérieur.

Introduction

This paper examines the tenuous relationship between research integrity and GenAI, as the principles and values which both incorporate seem to diverge. This discussion is significant because the use of GenAI in research and writing, if not correctly done, can easily subvert research integrity. To this end, the fundamental question this paper investigates is whether research integrity and generative AI are a contradiction in terms. This aims to find the right balance and uphold the highest ethical principles in research. This article is aimed at anyone interested in the responsible use of AI, drawing on philosophical arguments and discourse analysis.

The Nature of Integrity in Academic Research

Academic integrity has been variously described. The description mainly focuses on learners rather than on lecturers and researchers (Mejía & Garcés-Flórez, 2025). Many attempts to define academic integrity conceive it as abiding by the rules and procedures of educational institutions. At other times, it is seen as compliance with a set of general virtues intimately aligned with truthfulness, honesty, fairness, being respectful and responsible (Unisa, n.d.; University of Pretoria, 2024; Monash University, n.d.; University of Manitoba, n.d.; University of Reading, n.d.). In the words of Iowa State University (n.d.): “Academic integrity means being honest in your academic work, being fair to others, and taking responsibility for your learning. This is demonstrated by doing your own work, based on your understanding of the content, without the use of unauthorized assistance from start to finish for all of your academic work”. The violation of academic integrity refers to ‘academic misconduct’ or ‘academic dishonesty’.

Academic integrity should not be reduced to mere avoidance of plagiarism, while plagiarism is a big part of it as shunning plagiarism is fundamental to the legitimacy of a university and the knowledge earned in various degrees; academic integrity, however, transcends the classroom to adulthood, impacting students’ behaviour as ‘citizens’ of integrity in different life paths (National and Kapodistrian University of Athens Library, n.d.). Research integrity, an aspect of the overall academic environment, pertains to norms aimed at guaranteeing the soundness and reliability of research. Research integrity is vital to realise the societal value and benefits of research. The uniformity and harmonious compliance with standards such as honesty, accountability, professional courtesy, fairness and good stewardship are the distinctive features of research integrity (WCRIF, 2017).

Different practices constitute research misconduct. WCRIF (2017) further highlights fabrication, falsification and plagiarism (FFP) as constituents of research misconduct or severe contravention of research integrity. Detrimental research practices (DRP) are more widespread and more injurious to standard and plausible research than FFP. DP includes acts that contravene essential principles of research integrity, such as poor supervision of junior workmates, misplacement of research data, or indecorous allocation or exclusion of authorship. Other related terms include sloppy science, cutting corners, and incomplete and unusable reporting, all leading to research waste.

Research integrity also relates to every factor that supports responsible research practice and which promotes trust and confidence in research procedures. It reflects all aspects of research, from conceptualisation to design, through the actual conduct of the research, and eventual dissemination. It equally encapsulates the need for a responsible research culture, where environmental and systemic safeguards for responsible research conduct are in place (Armond et al., 2024; UK RIO, n.d.; Imperial College London, n.d; National Academies of Sciences, Engineering, and Medicine, 2017). Research integrity covers values and principles such as rigour, objectivity, honesty, openness, accountability, fairness, stewardship, transparency, respect, and accountability (ALLEA, 2023).

Generative Artificial Intelligence and Questionable Integrity Foundation

Since the launch of ChatGPT by OpenAI, which is arguably the most ubiquitous (Önden & Alnour, 2023), several studies have decried its questionable development and deployment process and the impact it has on various sectors. For instance, there is documented evidence of labour exploitation of Kenyans to remove toxic substances from ChatGPT ahead of its release (Perrigo & Zorthian, 2023), and also cases of various lawsuits filed for copyright and intellectual property of works (data) used to train AI models (Tech Policy Press, n.d.). Hao (2022) recounts a novel wave of digital apartheid in South Africa with the use of surveillance technology to further exploit the poor, marginalised and vulnerable. Berreby (2024), Fraga-Lamas et al. (2021) and Hao (2019) also criticised the energy and water use of AI and its tremendous adverse effect on the environment.

Resting on the UNESCO's Recommendation (2021), the subsequent AI competency frameworks for teachers and students (2024) and Guidance (2023) report highlights eight (8) controversies around GenAI which are: "worsening digital poverty, outpacing national regulatory adaptation, use of content without consent, unexplainable models used to generate outputs, AI-generated content polluting the internet, lack of understanding of the real world, reducing the diversity of opinions and further marginalising already marginalised voices, generating deeper fakes" (UNESCO, 2023,

pp.14-17).[14] Beyond this, there are tons of other concerns around academic and research integrity, data privacy, perpetuation of bias and stereotypes, hallucination and misinformation, widening digital divide and the illusion of social justice (Peters & Olojede, 2025; Alkaissi & McFarlane, 2023; Olojede, 2024; Resnik and Hosseini, 2024; Jaap Wieringa et al., 2021; Kasneci, Seßler, & Küchemann et al, 2023; Olojede & Olakulehin, 2024; Olojede, 2023).

Regulations on the Use of AI in Higher Education

Given these faulty foundations of GenAI and its consequent proliferation and impact on education, several regulations on how to preserve the integrity of research have been put forward (Resnik& Hosseini, 2025; Sage Publishing, 2025; WAME, 2023; Flanagin et al., 2023; COPE, n.d.). In particular, the Committee on Publication Ethics (COPE), Sage Publishing, American Psychological Association, Academy of Science of South Africa, through its South Africa Journal of Science, Journal of World Association of Medical Editors (WAME), and Wiley collectively agree that AI tools cannot be listed as co-authors. Authors must not deflect from their responsibility to certify the accuracy, ethical conduct, and overall integrity of AI-infused content. Routine use of AI need not be cited. All regulations, therefore, agree that transparency and disclosure of AI use are fundamental.

Resnik & Hosseini (2025) detail how AI research and writing disclosure should be conducted in three categories: mandatory, optional, and unnecessary.

Disclosure of AI use is mandatory in the following instances:

1. Craft questions or hypotheses, design and conduct experiments
2. Write portions of a paper, summaries, paraphrase, revise, review or synthesise or systemise content
3. Translate a paper in part or whole
4. Derive data for the literature review, be it systematic or not, quantitative or qualitative and establish gaps in knowledge or problem statement

[14] In addition, UNESCO (2025) anthology explores the philosophy, ethics and pedagogical dilemmas caused by tumultuous impact of AI in education.

v. Produce synthetic data and images used in the paper or research output, etc.

Disclosure of AI use may be optional in the following instances:

1. Edit an already existing text for grammar, spelling, and organisation
2. Locate references while verifying their veracity with search engines
3. Format references into various styles. E.g. MLA to APA

Disclosure of AI use may be unnecessary in the following instances:

1. To suggest words or phrases in an existing sentence for the sake of clarity and readability
2. As a part of a larger operational system but in which AI is not used to produce or

   3. synthesise content or make research decisions. E.g. when a system or machine uses AI.

There are, nonetheless, slight variations in the recommendations. International Committee of Medical Journal Editors (ICMJE) states that data analysis with the assistance of AI should be made known in the section on methods, WAME recommends "When an AI tool such as a chatbot is used to carry out or generate analytical work, help report results (e.g., generating tables or figures), or write computer codes, this should be stated in the body of the paper, in both the Abstract and the Methods section". Sage publications make a distinction between "assistive AI tools and generative AI tools". On the one hand, Google's Gmail, Microsoft's Outlook, Word and other similar tools, which suggest, correct and improve content that a human has authored, are assistive AI tools. On the other hand, "generative AI tools such as ChatGPT or Dall-e which produce content, whether in the form of text, images, or translations. Even if you've made significant changes to the content afterwards, if an AI tool was the primary creator of the content, the content would be considered "AI-generated" (Sage Publishing, 2025; Massachusetts Institute of Technology, n.d.).

Conclusion

To the question that forms the title of this paper, is research integrity and generative AI an oxymoron? Let us examine this in the form of an argument.

Premise 1 - the principles and values of integrity include: honesty, openness, accountability, transparency, and respect;

Premise 2 – the process of development and deployment of GenAI incorporates an ethically questionable database: full of copyrighted materials; the black box problem, new wave of incentives for plagiarism and misrepresentation from the internet. It thus lacks transparency, openness, and respect for people's copyrighted works and IPs.

Premise 3 – based on premise 2, there are regulations from various organisations addressing how integrity could be upheld in AI use for research and writing.

From the foregoing, the development and deployment of most GenAI models of today, if not an anathema to the process required for research integrity, often clash directly with the principles of research integrity.

Objections to this argument would go along the lines of appealing to the potential benefits of GenAI (Peters & Olojede, 2025; De Simone et al, 2025; Olojede, 2024; Clugston, 2024). While this is true, it conflates the benefits of AI in education with the meaning of research integrity and the core philosophical and practical challenges AI poses to the very foundation of research integrity. Nonetheless, while there is a lack of integrity in the process and the tool, there can indeed be integrity in the humans using the tools. The extent to which we can successfully 'integritise' a faulty process is up for discussion.

Statement on Transparency

Anthropic ClaudeAI (Sonnet 4.5) was employed to format the reference in APA style, while the author further formatted this. The abstract was translated into French using DeepL. Other than this, no aspect of this paper was either written or generated by AI.

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Academic Integrity and Thesis Writing at Master's Level in the Digital Age

Bassem KANDIL

Professor, Saint Joseph University of Beirut, Faculty of Education, Lebanon

Estelle RACHED

Professor, Institut Catholique de Paris, France

Abstract

The use of Generative Artificial Intelligence (GenAI) applications in the research work at the graduate level provided unprecedented opportunities for researchers and significant challenges to academic integrity. The study aims to explore the practices and perceptions of master's students and educators in higher education regarding academic integrity in the age of GenAI. Based on qualitative data collected from interviews conducted with graduate students in education and a focus group with their respective supervisors, the findings reveal a dual role of GenAI in both supporting research work and challenging traditional norms of academic integrity. The study identifies gaps in institutional policies, supervisors' preparedness, and student uncertainty working in an AI driven academic environment.

Keywords

thesis writing, Generative Artificial Intelligence, academic integrity, AI ethics

Résumé

Le recours aux applications d'intelligence artificielle générative (IAG) dans les travaux de recherche menés au niveau du Master en sciences de l'éducation offre des

opportunités inédites aux chercheurs, tout en présentant des défis liés à l'intégrité académique. La présente recherche explore les pratiques et les perceptions des étudiants de master et celles des enseignants universitaires concernant cette intégrité à l'ère de l'IAG. S'inscrivant dans une approche qualitative basée sur des entretiens menés auprès d'étudiants en master et des *focus group* conduits auprès de leurs directeurs de recherche respectifs, cette étude révèle que l'IAG renforce la productivité mais elle remet en question les normes traditionnelles de l'intégrité académique. Les résultats soulignent des lacunes liées aux politiques institutionnelles, à la préparation des directeurs de recherche et à l'incertitude ressentie par les étudiants dans un environnement académique marqué par l'intelligence artificielle.

Mots-clés

Rédaction de thèse, Intelligence artificielle générative, intégrité académique, éthique de l'intelligence artificielle

Introduction

Generative Artificial Intelligence (GenAI) is influencing almost every aspect of our lives. Doing research in higher education institutions is no exception. Graduate students are integrating AI tools into the various aspects of their academic life, including research work and thesis writing. Research supervisors are also using GenAI applications in their work, and they are supposed to provide guidance for their students.

In graduate programs, especially those involving thesis writing, the stakes are high: students must produce original research, contribute to scholarly discourse, and uphold rigorous ethical standards (ICAI, 2021). However, this already complex process has been further complicated by the proliferation of GenAI technologies capable of producing human-like text, translating languages, and summarizing research. These tools challenge conventional ideas of authorship and originality, making it more difficult to distinguish between legitimate academic support and unethical shortcuts (Flanagin et al., 2023).

The process of writing a thesis at the master's level presents a unique challenge in maintaining academic integrity, as it requires original thought, rigorous research, and adherence to ethical guidelines. The main issue or problem is the tension between the

benefits of using AI in research work or thesis writing and the potential risks to academic integrity. Should students use GenAI in thesis writing or not? If yes, what are the boundaries of such usage? How can they use it and still respect the standards and ethics of empirical research? To address the above stated issues, the following research questions were raised:

Research Questions

1. How do MA students in Education, at a private university in Beirut, use GenAI tools (e.g., ChatGPT) in thesis writing?
2. How do GenAI tools influence academic integrity in writing theses, and what ethical considerations arise from their use?
3. What institutional policies or guidelines are available or needed to regulate the ethical use of AI in academic research?

This research will contribute to the growing body of knowledge on academic integrity by providing empirical insights into the factors that influence ethical research practices in graduate education. The findings will help institutions refine their policies and support mechanisms, ultimately fostering a culture of integrity that benefits students, supervisors, and the academic community.

Literature Review

In the era of GenAI, academic integrity in thesis writing faces additional challenges. As GenAI systems can generate text that mimics original work, content is often prone to uncredited use of AI in academic work or what scholars term “AIgiarism” (Sipayung et al., 2025). Since current plagiarism checkers struggle to reliably detect AI-generated content, students may be more tempted to misuse AI (Ortiz-Bonnin & Blahopoulou, 2025).

At the same time, overreliance on AI can reduce student autonomy as GAI assistance may inadvertently suppress critical thinking and reduce students’ engagement with the intellectual aspects of thesis writing (Chan et al., 2023). In thesis writing specifically, recent research shows that doctoral students are using GAI for various writing tasks but remain unsure where legitimate assistance ends and plagiarism begins, including

dilemmas about whether to disclose GenAI involvement (Hoomanfard & Shamsi, 2024).

Educational institutions are responding unevenly, some ban GenAI tools in research work while others focus on teaching students about ethical AI use. Nevertheless, most universities still lack clear policies or guidance on GenAI use (Ortiz-Bonnin & Blahopoulou, 2025).

Academic Integrity in Contemporary Contexts

Academic integrity encompasses a commitment to values such as honesty, fairness, respect, and responsibility, as outlined by the International Center for Academic Integrity (ICAI, 2021). In graduate education, academic integrity goes beyond avoiding plagiarism; it also involves critical thinking, ethical data handling, and proper attribution of ideas. Scholars like Bretag (2013) emphasize that academic integrity should be seen as a proactive, educative framework rather than a reactive, punitive mechanism.

GenAI in Education

GenAI tools, particularly large language models (LLMs) such as ChatGPT, Gemini, and Copilot, have rapidly found their way into higher education contexts. These tools can write fluent paragraphs, summarize articles, assist with data analysis, and mimic academic tone. According to a global student survey conducted by Turnitin (2023), nearly 60% of university students admitted to using AI tools for at least one academic task, from generating ideas to drafting sections of assignments.

Such an integration of AI tools may encourage over-reliance and hinder the development of critical thinking skills if used without proper guidance (Lund & Wang, 2023). Educators and scholars are invited to draw a line between acceptable academic assistance and AI-enabled academic dishonesty.

Ethical Dilemmas and Authorship Ambiguities

A central challenge presented by GenAI is the ambiguity surrounding authorship and originality. Traditional norms assume that the writer is the intellectual originator of the content. However, when a student inputs a prompt and receives a fully formed paragraph in return, the issue arises: who is the true author? AI tools cannot be credited as authors because they cannot be held accountable (Nature, 2023; Flanagin et al., 2023).

More concerning is the phenomenon of AI hallucination, where models generate convincing but fabricated information, such as non-existent citations. A study by Else (2023) found that over 30% of AI-generated academic abstracts contained fictitious references. This not only misleads readers but also undermines the credibility of academic or research work, especially in theses.

The emergence of GenAI tools calls for a reassessment of traditional academic integrity principles. These tools fundamentally change how students engage with academic tasks, especially in writing and research synthesis. While traditional academic misconduct focused on issues like direct plagiarism or cheating, AI introduces subtler forms of ethical grey areas such as idea laundering (presenting ideas generated by AI as one's own original thought), AI-generated paraphrasing, and source hallucination (Perkins et al., 2023).

Conceptual Framework

This study adopts a hybrid conceptual framework that integrates Bandura's Social Cognitive Theory (SCT) and Vygotsky's Socio-Cultural Theory to investigate how graduate students navigate academic integrity in thesis writing when using GenAI tools.

Bandura's SCT emphasizes the reciprocal interaction between personal factors, observed behaviors, and the social environment. In the context of GenAI use, student decisions about ethical conduct are shaped by self-efficacy, peer modeling, and institutional norms. The theory also introduces the concept of moral disengagement, explaining how students may rationalize ethically questionable use of GAI —such as

copying generated content— when such behavior is normalized by peers or perceived as low-risk (Bandura, 1999).

Complementing this, Vygotsky's Socio-Cultural Theory views learning as a socially mediated process where tools like GenAI act as cultural artifacts (Vygotsky, 1978). Through interaction with thesis supervisors, peers, and institutional discourse, students construct their understanding of originality, authorship, and academic responsibility. GenAI may serve as a scaffold within students' Zone of Proximal Development (ZPD), supporting their ability to draft, revise, or understand complex academic content. The ZPD represents the zone between current ability of a student and his or her potential growth with assistance. GenAI facilitates such assistance by providing adaptive and timely support that bridges what learners can do alone and what they can achieve with guidance.

Together, these two theories offer a comprehensive lens for analyzing the interplay between individual agency, institutional culture, and tool mediation.

Methodology

This study employed a qualitative approach to provide an in-depth exploration of the issue under examination. Qualitative methodology was chosen for its ability to capture the lived experiences and perceptions of students and faculty.

Participants

A purposive sampling approach was used to select the current master students in the faculty of education at a private university that is located in Beirut-Lebanon. These students were selected because they are actively working on their theses. Twenty students and eight supervisors took part in this study. Students were at various stages of thesis completion. Supervisors were selected based on their active involvement in the advising of theses of the selected students. Inclusion criteria ensured participants had experience with or used AI-assisted writing tools.

Data Collection Methods

The researcher conducted interviews with the students as well as the focus group with the supervisors. Participation was voluntary and anonymity as well as confidentiality were ensured. The researcher clearly stated that the aim of this study is to provide insights that will help in the development of clear and practical guidelines for an ethical and responsible use of GAI in academic research and thesis writing. And for this purpose, we are seeking input from various stakeholders.

Interviews with Master Students: Semi-structured interviews were conducted with the participating students. Each student participated in a one-to-one interview lasting for approximately 40 minutes. Interviews were guided by a protocol that included open-ended questions about the GenAI tools they are using and for what purposes. In addition, questions covered challenges faced during thesis writing and opportunities made available by GenAI. Also included were questions about the ethical use of AI and the availability of guidelines or relevant policies.

Focus Group Discussions with Supervisors: A focus group was organized with the eight thesis supervisors to understand their perceptions, experiences and strategies for promoting academic integrity among students. Questions covered topics about GenAI and its use in research work. Additional questions covering academic integrity and its promotion were included as well.

Document Analysis: Thesis writing guideline and academic integrity policy were reviewed. The aim was to spot whether GenAI and academic integrity were explicitly addressed in the available documents.

Findings and Discussions

This study employed qualitative research design, using thematic analysis as outlined by Braun and Clarke (2006) to analyze the data. Thematic analysis was selected for its flexibility and systematic approach to identifying, analyzing, and reporting patterns within qualitative data. The analysis began with data familiarization through repeated readings of the transcripts and initial notetaking. This was followed by the generation of initial codes, where segments of data relevant to the research questions were systematically labeled. Codes were then collated into categories and themes were

generated. Finally, themes were supported by narrative descriptions supported by data extracts. Below you will find the themes emerged from the interviews done with students.

RQ1. How do MA students use GenAI tools in thesis writing?

Theme 1: GenAI is used as a support tool with a focus on surface-level academic assistance.

Students primarily use AI tools such as ChatGPT, Gemini, Copilot, and DeepSeek as cognitive assistants to enhance the writing process. The tools are commonly used for brainstorming, clarifying ideas, summarizing articles, and improving grammar and structure. Notably, students emphasize that AI is used to *support*, not replace, their academic work.

S1: “I primarily use it for brainstorming, summarizing articles, and getting structure ideas... I always verify the information from reliable sources.”

S7: “I usually write a detailed prompt... I consider this AI tool as a helper and a guide without replacing my work.”

S8: “I use AI for restructuring my writing and ensuring that my content follows a coherent scope and sequence.”

Though a few participants mentioned using AI for tasks like identifying research gaps or analyzing data, the overall trend was focused on surface-level academic assistance rather than deep analytical engagement.

Theme 2: Perceived benefits of AI are tempered by concerns about overreliance and accuracy.

While participants appreciated the efficiency, clarity, and confidence AI provided in academic writing, many expressed concerns about over-dependence and reduced critical thinking. Several participants also mentioned the potential for AI to provide outdated or inaccurate information.

S2: “The biggest advantage is timesaving... but it also lacks the ability to critically analyze or generate truly original insights.”

S3: “It saves me time... But I know more about the context of the responses I collected, so in data analysis I depend on myself.”

S10: “I've noticed that the information is outdated sometimes... I might want to make sure it's accurate and not outdated.”

RQ2. How do GenAI tools (e.g., ChatGPT) influence academic integrity in thesis writing, and what ethical considerations arise from their use?

Theme 3: Students adopt Self-regulated Strategies to uphold Academic Integrity

Despite the lack of formal training, students showed a strong sense of ethical responsibility. They commonly emphasized verifying AI outputs, paraphrasing responses, and not relying on AI for personal analysis or original argumentation.

S5: “I never copy and paste AI-generated content directly into my thesis without verification.”

S9: “I try my best to use AI tools as a helper... then I paraphrase in my own language.”

S12: “I always paraphrase AI-generated content to avoid plagiarism... and I use my own words.”

S13: “I make sure to review, rephrase, and rewrite the content in my own words to ensure authenticity.”

Students were divided on whether AI-generated content should be cited. Some advocated for transparency if the tool contributed directly to content creation, while others argued that AI cannot be ethically cited because it doesn’t produce original work.

Theme 4: Lack of Institutional Guidance creates Ethical Ambiguity and Unequal Practice

All participants noted the absence of clear university policies on AI use in thesis writing. While some had informal discussions with supervisors, most relied on personal judgment or external sources (such as what other universities are doing in this regard) to define ethical practices.

S4: “There are no clear guidelines from the university. My supervisor advised me to use AI cautiously.”

S12: “No formal guidelines have been provided. Different professors have different opinions.”

S14: “My university has not provided clear guidelines yet... In Lebanese universities, AI policies are still vague.”

Participants called for specific institutional policies outlining what is considered acceptable use, the percentage of AI-generated content allowed, and the expectations for citation and transparency.

RQ3. What institutional policies or guidelines are needed to regulate the ethical use of AI in academic research.

Theme 5: The future of thesis writing will require balancing technological advancement with human insight

Participants expect AI tools to become more embedded in academic research and thesis writing. While acknowledging this inevitability, they emphasized the importance of maintaining intellectual integrity and human judgment.

S1: “AI will likely become a standard tool in research... but there is a risk of students relying too heavily on AI.”

S7: “Maybe they [future students] can focus on the positive and ethical way of using it… not trying to sneak around.”

S16: “AI might develop the ability to generate original thoughts… It starts as a tool for assistance but can easily become a crutch.”

Students advised their peers to use AI wisely, verifying content and ensuring their work remains rooted in their own understanding and analysis.

Recent studies suggest that students have diverse attitudes toward AI use. While many students are aware that copying AI-generated content without attribution is problematic, fewer understand the restraints of indirect paraphrasing, partial edits, or summarization without citation. Sok and Heng (2024) observed that students often rationalize AI use as a modern form of peer support, particularly when institutional guidance is vague or outdated.

The lack of standardized norms around AI disclosure emerged as a significant challenge in this study. Students often used AI tools without fully understanding the ethical implications, while supervisors lacked clear guidance on how to interpret or manage such usage. Transparency is critical. As recommended by academic

publishers like Springer and Elsevier, AI-generated content should be disclosed, specifying the tool used and the purpose it served (Elsevier, 2023).

Reconceptualizing academic integrity in the AI era means shifting from a punitive framework toward a more developmental and proactive approach (Bretag, 2016). This includes integrating critical discussions on authorship, responsibility, and intellectual ownership in academic writing courses. Afterall, students' integrity decisions are not just personal but socially constructed and culturally mediated.

As for the supervisors, the following themes emerged from the focus group:

Theme 6: There is no consensus among the supervisors regarding the proper or acceptable use of GAI.

P2: "How can we ban something that we are currently using."

P5: "Can we allow students to use AI-generated output if they cite it."

P6: "I guess it is okay to use it for data analysis or citing references."

Theme 7: The ethical use of GAI in research is something worth including in a written policy at the university level.

P4: "What is not ethical without GAI, is also not ethical with the use of GAI."

P8: "Academic integrity, as a concept, shouldn't be affected by the use of any tool."

As for the revision of the available policies, nothing was mentioned regarding the ethical use of GAI during thesis writing or in research work. And when we followed up on this matter, we were told that the draft guidelines have been outlined and will be shared soon.

Findings indicate a systemic lack of training and institutional support for both students and supervisors. Most of the ethical confusion stems from the absence of clear frameworks.

Despite the widespread use of AI, institutional responses remain fragmented. Hughes and Eaton (2022) highlight that most universities have yet to update their academic integrity policies to reflect AI advancements. Many institutions continue to rely on plagiarism detection software like Turnitin, which may not reliably detect AI-generated text. Moreover, there is a lack of formal training for faculty on how to address AI-related integrity issues. This institutional lag has created a policy vacuum, leaving students

and supervisors to navigate ethical decisions independently. Universities should adopt certain disclosure statements for theses and academic submissions. This would not only promote accountability but also help normalize responsible AI use. For example, a student might include a note such as: “Sections of this text were generated with the assistance of ChatGPT for language refinement.”

Leading academic organizations, including UNESCO and the International Association of Universities, have begun issuing position papers calling for urgent reforms to integrity policies considering AI’s rise (UNESCO, 2023).

Institutions must be accountable for providing explicit guidance and ongoing professional development opportunities.

Training should cover not only technical aspects (how to detect AI-generated content) but also conceptual and ethical dimensions (e.g., when is AI use legitimate vs. deceptive?). As McGee (2024) argues, the ethical use of AI should be incorporated into research methods courses and faculty development programs alike.

A promising approach is the co-creation of policies with stakeholders, including students, to foster shared ownership. Recent work by Kassorla et al. (2024) highlights the effectiveness of student-led AI literacy initiatives in increasing engagement and compliance with academic integrity policies.

Conclusion

This study demonstrates that the use of GenAI in thesis writing is widespread, poorly regulated, and ethically ambiguous. Master students often rely on GenAI tools for legitimate support but lack the guidance to distinguish this from academic misconduct. Supervisors and institutions are similarly underprepared, contributing to inconsistent practices. This mirrors observations in recent research; for example, a global analysis by Jin et al. (2025) found that many universities are adopting GenAI in teaching and research yet still lack comprehensive policies to govern its use. Despite that some universities emphasize academic integrity, the absence of detailed and written frameworks leaves a gap in ensuring consistent and responsible AI use (Jin et al., 2025).

The findings call for urgent institutional action: policies must be updated, AI ethics must be taught, and academic integrity must be redefined for the digital or AI age. Only by

doing so can higher education uphold its foundational values in a world transformed by artificial intelligence. A systematic review by Bittle and El-Gayar (2025) underscores the urgent need for explicit GenAI guidelines to accompany academic work. Their analysis concludes that effective integration of GenAI must be paired with clear usage policies and ethical guidelines. In practice, this means institutions should update their academic integrity policies to define transparent rules for AI usage, provide faculty training on AI tools, and educate students about ethical AI practices (Bittle & El-Gayar, 2025). These measures echo the voices from our participants for clearer direction, highlighting that without formal guidance, learners remain uncertain about acceptable use of AI in doing research.

Ethical standards and academic integrity constitute the soul of empirical research. Without respecting them or abiding by them, there is no meaning for doing research. Afterall, the aim of research is the development of humanity, nations, and countries; something that can't be done without being honest with our selves regarding research work. Artificial Intelligence has obliged us to reaffirm or reassure the importance of relevant fundamental concepts such as authorship, originality, and intellectual property in research work. Thus, establishing a robust ethical framework for GenAI use in higher education is a critical priority. Such a framework would mitigate misuse and maintain trust in thesis writing and research work by outlining boundaries that uphold academic integrity while still allowing for innovation.

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Plagiarism and Academic Integrity in Higher Education Institutions in Portugal: A Critical Literature Review

Ana PEDRO[15]

Professor, Universidade de Aveiro (Portugal)

ORCID: 0000-0002-0179-3589

Abstract

The relationship between plagiarism and academic integrity has been a concern for Portuguese higher education institutions in recent decades and, more recently, partly due to technological developments that have occurred with the emergence of artificial intelligence and its use in higher education. We will seek to know students' perspective on plagiarism, as well teachers' perspective of plagiarism, which pedagogical practices were developed and implemented, and higher education institutions recommendations to promote academic integrity. The review covers the period 2010-2024. We searched in Scopus and Web of Science the following descriptors: plagiarism and higher education Portugal; academic integrity; academic ethics. We found that the approach to this topic already allows us to understand the phenomenon to a minimal extent. The conclusions point to both the need of an ethical-evaluative training and institutional policies.

Keywords

Ethics, academic integrity, plagiarism, higher education, Portugal.

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Résumé

La relation entre le plagiat et l'intégrité académique est une préoccupation pour les établissements d'enseignement supérieur portugais depuis plusieurs décennies et, plus récemment, en partie en raison des progrès technologiques liés à l'émergence de l'intelligence artificielle et à son utilisation dans l'enseignement supérieur. Nous chercherons à connaître le point de vue des étudiants sur le plagiat, ainsi que celui des enseignants, les pratiques pédagogiques qui ont été développées et mises en œuvre, et les recommandations des établissements d'enseignement supérieur pour promouvoir l'intégrité académique. L'étude couvre la période 2010-2024. Nous avons recherché dans Scopus et Web of Science les descripteurs suivants : plagiat et enseignement supérieur au Portugal ; intégrité académique ; éthique académique. Nous avons constaté que l'approche de ce sujet nous permet déjà de comprendre le phénomène dans une mesure minimale. Les conclusions soulignent à la fois la nécessité d'une formation éthique et évaluative et de politiques institutionnelles.

Mots-clés

Éthique, intégrité académique, plagiat, enseignement supérieur, Portugal.

Introduction

It is not surprising that higher education has been facing increasing ethical challenges in part due to mass education, European internationalization and openness to the world, or, more recently, due to technological and digital changes. This fact entails with inevitable repercussions on university institutions that have forced them to review the choice of their principles and conduct.

However, if with the advent of the internet and its use in academia and scientific research, we were forced to face the phenomenon of plagiarism[16] —which led us to rethink the role of universities in society—, the emergence of artificial intelligence (AI) has brought equally significant ethical challenges, as it has intensified and diversified plagiarism (Peixoto, 2017). Higher education institutions still experience enormous difficulties in combating academic fraud, given its incidence and scope. In our view,

[16] According to Ramos and Morais (2021, p. 92), plagiarism occurs when the following characteristics are observed: i) incorrect declaration of authorship or originality of texts, ii) lack of credit to cited sources, and iii) irrelevance of the intention with which the plagiarism occurs.

one of the most important explanatory factors seems to lie in the assumption made by some teachers that, just because students attend university, they automatically know and apply information literacy skills. However, we consider this assumption to be a major fallacy. In fact, the academic career of most students of the secondary and vocational education demonstrates exactly the opposite, as they have always been familiar with plagiarism, particularly when teachers asked them to write and submit academic work (Dias et al., 2013). What we can conclude from this fact is that academic fraud which includes plagiarism[17] has become widespread and its prevalence has been the subject of increasing attention from the academic community, making its prevention a clear concern for different higher education institutions (Ramos & Morais, 2020 and 2021; Braga, 2016; Glendinning, 2014). It is in this context that it becomes essential to understand students' perceptions and attitudes towards plagiarism, so that higher education institutions can develop and implement effective anti-plagiarism policies to promote and maintain a culture of academic integrity (Terra et al., 2021; Saraiva, 2018).

The systematic review on plagiarism and integrity in higher education institutions in Portugal that we present here refers to the period between 2010 and 2024, because no studies were known before this date.

According to a survey carried out by www.b-on.pt, a Portuguese well-known online library, especially used in universities (Teixeira & Rocha, 2010), 79% of publications on plagiarism are from 2010 to 2020, showing that academic research and publication on the subject have occurred mainly in the last decade with a few exceptions, with publications in recent years. One reason may be that the problem has become even more frequent and serious in recent years, despite the lack of knowledge about its extent and characteristics (Caldas et al., 2021; Peixoto, 2017). On the other hand, we believe this phenomenon may also be the result of the massification of higher education, as well as the growing heterogeneity of the student population who attend it and who have access to the internet and AI.

[17] Plagiarism differs from other forms of academic fraud in that, in order to avoid committing it, students must not only adhere to a code of honesty that prevents them from engaging in any form of fraud, but must also possess a specific set of knowledge that enables them, on the one hand, to recognise the various manifestations of this practice and, on the other, to understand the rules involved in the use and crediting of external sources (Morais et al., 2022, p. 91).

We sought to find answers to some of our research questions considering divided into three levels: 1. undergraduate and post-graduate students: What is the definition of plagiarism for these students? What is the most frequent type of plagiarism used by them? What are the reasons indicated by them for their use? 2. Teachers: What are the teachers' reactions to plagiarism when confronted with it? What anti-plagiarism pedagogical practices have they developed and implemented? 3. Institutional policies: what recommendations aimed at promoting academic integrity have been made by higher education institutions?

According to the analysis of the studies carried out in Portugal, as we can see in the table below, we found that there are more studies from the narrow and restricted approach (Domingues, 2022; Morais et al., 2022) of analyzing students' perceptions (93%) and far fewer studies on teachers and institutional policies for a culture of academic integrity (1%) as well as studies on librarians (1%) and higher education universities (5%). In turn, the systemic or holistic approach[18] focused on university management, seeking to understand the role of teachers and institutional codes of conduct that emphasised academic integrity and ethics[19]. In the studies selected for analysis searched in Scopus and Web of Science, the methodology used was mainly quantitative, based on questionnaires, and mainly descriptive and normative, grounded in theoretical analyses (Morais et al., 2022). Few qualitative studies were found that used interviews. In addition, there was only one study conducted using photovoice (Sierra-Martínez et al., 2024). Furthermore, there are no records of studies on the impact of AI use by higher education students, perhaps because the topic is still recent and researchers need time to study and analyse it. Some more generalist studies on plagiarism were excluded, which only discussed its etymological origin and other

[18] According to Domingues (2022, 1869), a holistic approach to plagiarism should be oriented towards both knowledge and control of the phenomenon. It should recognise the extent and importance of plagiarism (Stuhmcke et al., 2016), investigate causes rather than symptoms, establish interconnections between the network of procedures and actions (Macdonald & Carroll, 2006), and apply a code of ethics to the higher education system (Stuhmcke et al., 2016). A holistic approach should consider the available organisational, human, scientific, technical and regulatory resources, documented process (Ewing et al., 2016), policy, student preparation, learning and teaching strategies to foster preventive actions, consistency of proceedings and penalties, and communicate an unambiguous definition of plagiarism (Devlin, 2006).

19 We refer to ethics taking into account its semantic distinction in Greek culture between éthos and êthos, where the latter variation means: "[…] way of inhabiting the place where one lives (not exactly the dwelling, but the experience itself) […] of nature or character, in the sense of a personal nature or a subjective way of being […] the power of critical judgement, which came to qualify human conduct in reference to the concepts of good and evil, fair and unfair, beautiful and ugly" (Spinelli, 2009, pp.41-42).

rhetorical associated themes, but which distanced themselves from the reality of its occurrence in practice.

Plagiarism and integrity in higher education institutions in Portugal			
Number of Scientific articles (24)	**Books (2)**	**Theses (2)**	**Reports (5)**
Plagiarism: 21	Fraud and plagiarism at university the urgency of a culture of integrity in higher education, University of Coimbra (2015)	Master's dissertation in criminology: *Effective fight against the crime of plagiarism: respect for the social function of immaterial property and scientific production as a focus* (Porto, Lusófona University, 2018);	Plagiarism policies in Portugal, (2014); CNECV (2018), Integrity in scientific research – recommendation Strategies to promote academic and scientific integrity – higher education institutions in Portugal (2019)
Culture of integrity: 6	Plagiarism and academic integrity in the information society Open University, Lisbon (2020)	Master's dissertation/sociology *From intransparency to crime in science and higher education. An empirical study of deviant and corruptive processes in Portugal* (University Porto, 2009)	Report of the 1st conference on fraud and ethics in education and research (2019) Scientific integrity report (2023) Fac Medicine, University Porto.

Table 1. Plagiarism and integrity in higher education institutions in Portugal. Source: Author.

Results

Plagiarism from the students' perspective

We will now present some of the findings from the literature on the definition and perception of plagiarism from the students' perspective, as well as the types of

plagiarism[20] they most commonly use and their main motivations for resorting to it. For example, regarding the perception of plagiarism by higher education cycle, undergraduate students generally showed a general lack of knowledge about what constitutes plagiarism (Morais et al., 2022). However, this lack of knowledge decreased as they progressed in their academic studies at master's and doctoral level. Undergraduate students were the ones who most often revealed that they did not have a clear and correct understanding of what constitutes plagiarism, while master's and doctoral students were the most accurate in their definition, even though they had some doubts about what plagiarism is. Only literal plagiarism is clearly recognised at all levels of education. We also wanted to know which types of plagiarism were most commonly used among students. The most frequent types of plagiarism were copying part of other authors' academic work without citing the source; copying the academic work of other colleagues; signing group work without having contributed to its preparation.

There were also some plagiarism practices considered less serious by students, such as submitting the same work in different subjects (Morais et al., 2020 and 2022). Based on this data, we noticed that there seems to be an established policy among students to legitimise or socialise academic fraud based on mechanisms of trust and solidarity (Domingues, 2002). There seems to be a tolerance for sharing the authorship of academic work with others who were not involved in its production, based on the expectation that, someday in the future, they will also benefit from this practice (Morais et al., 2020).

As for the main motivations for committing plagiarism, it seems to lie in the fact that students are unable to manage their time well enough, (almost) always leaving academic work to the last minute or due to pressure from family or the job market to get good grades (Teixeira, 2011; Teixeira & Rocha, 2010). In addition, the fact that they feel that there is no detection or subsequent penalty for those who plagiarise leads

[20] In scientific literature, it is possible to identify different types of plagiarism, such as: i) word-for-word plagiarism (i.e., the use of direct quotations, whether from text or any other element, without correctly crediting the source of these quotations); ii) mosaic plagiarism, which involves altering details of the text or other elements, with or without crediting the sources; iii) self-plagiarism, which includes situations where a particular element is presented as original when it has already been disclosed in full or in large part at an earlier date; and iv) the purchase or any other form of appropriation of the authorship of elements belonging to others (Morais et al., 2022, p. 92).

them to resort to it more naturally and normally, as something that everyone does[21]. The existence of a culture of plagiarism that prefers to ignore this phenomenon, which knows it exists but does nothing about it, is therefore highly detrimental to a culture of integrity and honest practice in academia (Peixoto, 2017).

In addition, students' low awareness, or even ignorance, of the existence of ethical codes in the higher education institutions to which they belong contributed to many of them being unaware of plagiarism policies. In turn, regarding the ethical codes of conduct of institutions, there are some shortcomings to point out. In fact, these were characterized by being, for the most part, too generic, as well as largely unknown to the academic community. Even in cases where some codes explicitly referred to plagiarism, they revealed a lack of preventive strategies regarding this phenomenon.

Teachers and Plagiarism

Next, we wanted to know how teachers assess incidents of plagiarism, how they react when faced with cases of plagiarism, what measures they take and how they proceed. From the selected studies, it was possible to see that, in the undergraduate studies, the most common penalty of teachers towards incidents of plagiarism was to reprimand and force students to rewrite their work; others chose to cancel the assignment and send the student to take an exam, and a significant number of teachers cancelled the assignment but allowed the student to continue with periodic assessment (Ramos & Morais, 2018).

As for teachers who detected plagiarism in coursework for master's and doctoral programmes, where students are required to write theses and scientific projects, most

[21] Taking into account the three comparative studies conducted by Teixeira and Rocha in the 2000s, it was possible to highlight the importance of context, if there was a more or less favourable trend towards plagiarism, in determining its occurrence. Thus, in environments favourable to plagiarism, students' propensity to plagiarise tends to be greater; the greater and more severe the penalties, the less incentive students have to engage in dishonest behaviour; in schools where codes of honour exist, the propensity to copy among students is lower (Teixeira and Rocha, 2006, 92). According to these assumptions, it was possible to state that, although academic fraud was widespread in Portugal and Spain (Teixeira & Rocha, 2008), Portuguese students were less prone to fraudulent behaviour, while Spanish students were more prone to copying than their Austrian counterparts, with no significant differences found between Austrian and Romanian students (Teixeira & Rocha, 2006, p. 92). In turn, the probability of copying is significantly lower among students in Scandinavia, the US and the British Isles, when compared to their counterparts in southern Europe. Surprisingly, this probability is also lower for the African bloc. However, students from Western European countries and, especially, Eastern Europe revealed statistically significant higher propensities to commit academic fraud (Teixeira & Rocha, 2010).

teachers choose to discuss the issue and force students to rewrite their thesis/project, a practice not provided for in the codes. Few reported the incident to others, whether to the head of the department, the university's teaching council, or even the rector.

To prevent plagiarism, teachers believe it is important to impose stricter penalties on those who commit plagiarism, inform students about the rules on plagiarism, and ensure that work is submitted to plagiarism detection tools (Ramos & Morais, 2018; Teixeira, 2011; Teixeira & Rocha, 2010).

Based on this data, we can conclude that the attitudes teachers typically adopt are more preventive than punitive ones when confronted with situations of plagiarism, as they have shown little willingness to report cases of plagiarism that arise, and choose to resolve them privately and confidentially.

Institutional recommendations

Finally, we wanted to know what anti-plagiarism recommendations were made by higher education institutions, whether or not they were included in the available documentation. The analysis of institutional documents has revealed that, then as now, they are vague or silent on the conceptual definition of academic fraud, on the definition of strategies for its prevention, on the definition of effective mechanisms for detecting academic fraud, as well as on the academic and disciplinary sanctions for fraudulent behavior. (Almeida, 2016; Peixoto, 2017; Peixoto et al., 2016).

In view of the existing data, we decided to group them into three levels: prevention, teaching, and institutional policies. It was suggested that prevention against plagiarism should begin at the very start of academic schooling, in the very first years, as it is not a phenomenon exclusive to universities. In other words, there is an understanding that fraud prevention should be introduced from the beginning of the academic experience, for example, in primary education (Hallak, 2021; Peixoto, 2016). However, the biggest change lies in the possible actions of teachers, required by institutions, in the sense of: 1. Prioritising ethical training on academic integrity; 2. Offering training modules on ethics, correct use of sources, and scientific writing; 3. Adopting more participatory teaching methods that incorporate critical thinking skills; 4. Including education on

plagiarism as an integral part of the curriculum for all subjects; 5. Being consistent with consistent and coherent teaching of anti-plagiarism principles and practices; 6. Prioritising ethical training in academic integrity and ethics based on moral philosophy and academic writing; 7. Creating and offer modules that teach how to cite and reference using APA standards; 8. Contributing to the knowledge, dissemination, and understanding of clear pedagogical rules focused on the ethics of honesty and a culture of integrity; 9. Developing essential educational strategies aimed at preventing plagiarism, in which students can develop practical outcomes (posters, tutorials, educational leaflets, videos), (Sierra-Martínez et al., 2024; Terra; Moreira & Gomes, 2021; Sanches, 2019; Matos & Sousa, 2017).

Therefore, there is a widespread understanding of how important and significant it is to adopt a positive educational and pedagogical perspective on resolving the phenomenon of plagiarism (Almeida et al., 2016; Festas; Matos & Seixas, 2020; Festas; Seixas & Matos, 2022; 2023; Nunes, 2025; 2019) rather than basing action on exclusively and purely negative attitudes that contribute nothing to the learning of writing skills, for example, which are clearly lacking. However, this does not mean that when instances of plagiarism are identified, punitive measures should not be taken, accompanied by other measures to re-establish the positive values that education, in its essence, requires.

With regard to institutional anti-plagiarism policies, there is a strong desire to develop and implement an ethical culture of integrity that is truly internalised by the entire university community. To this end, the data indicate that these measures must first be made known to everyone, and therefore higher education institutions should seek to promote and disseminate a culture of integrity that encompasses its different dimensions, both in terms of individual behaviour and institutional teaching practices, curricula, methodologies and types of assessment adopted (Nunes, 2019 and 2025; Peixoto et al., 2016). These institutional anti-plagiarism policies must also be made effectively visible, transparent and, above all, effective to the entire academic community.

Discussion

Our critical perspective: the future as we want it? Nowadays, there is greater awareness of this scientifically studied phenomenon and its understanding in its various nuances, both from the point of view of students and teachers and higher education institutions. This study has therefore provided an updated overview of the situation in Portugal, identified the shortcomings that still exist and, thus, determined the direction to take in terms of educational intervention. It was also possible to identify the effective resonance, in university teaching practice, of some of these studies with positive results. However, this has not been reflected in the investment in both research and effective educational practice currently being made in Portugal, either at the research level, as publications relating to 2025 on this topic are practically non-existent, or in the lack of initiatives to hold a variety of colloquiums and conferences. It is worth noting one exception, in that the International Colloquium on Ethics and Integrity in the Social Sciences and Humanities in the Age of AI is held annually at the University of Aveiro, since 2024.

This situation, however, does not reflect yet other international realities, such as those in Spain[22] and in Switzerland where IRAFPA[23] contribute to the necessary continuity of understanding and study of the phenomenon, given that plagiarism, as a phenomenon, is unlikely to disappear completely. It can therefore be concluded that it is absolutely crucial to carry out more research on a culture of integrity in higher education that now also considers the ethical use of AI in the context of university education.

A holistic theory (Domingues, 2022) that integrates all levels and types of plagiarism is therefore necessary, since the phenomenon is complex and must be analyzed in all its aspects (agent level; micro level; meso level; macro level) without forgetting the importance of a new level “[...] transversal, technological, due to its ability to influence all the above-mentioned levels. Given the rapid evolution of digital tools and artificial

[22] The University of A Coruña (Spain) has been very active in this area over the years through research projects, research groups on plagiarism, publications, and the organisation of national and international conferences.
[23] IRAFPA is an international Institute of Research and Action on Fraud and Plagiarism in Academia destinated *to create a forum for international, interdisciplinary scientific discussion on fraud and plagiarism, to aid and assist individuals and institutions affected by academic fraud or plagiarism, to conduct theoretical and applied research in those specific fields, and to formulate and disseminate a methodological protocol with respect to fraud and plagiarism*. (https://irafpa.org/en/).

intelligence that are transforming the way knowledge is researched, produced, and shared, their inclusion is particularly relevant" (Gallent-Torres & Sureda-Negre, 2025, p. 24). (translated from Spanish)

Therefore, we can conclude that there is a need for further research with systemic preventive approaches, involving universities and university policies that are openly anti-plagiarism and emphasised the necessary visibility for the entire academic community with regard to existing codes of conduct; to create academic and pedagogical regulations, assessment regulations, statutes, regulations for students, and letters of rights and duties for the academic community, making these documents more effective in practice (Pedro, 2023).

Conclusions

It is essential that universities clearly opt for an ethical culture of academic integrity and actively and, above all, effectively promote it in their academic communities, so that no one can claim ignorance or lack of attitude. In this sense, it is important that they take responsibility for disseminating it,ensuring that it reaches each and every one of us in the most varied ways and possibilities. At the same time, there is a need for a substantial change in the attitude of teachers who, through the use of active methodologies, the provision of scientific literacy modules for students, among other measures, can introduce change through education, as a lasting foundation for change. In this regard, we must not forget the fundamental role that students can play by involving them creatively in the production of anti-plagiarism output, making them their greatest advocates and spokespersons. We believe that only in this way, that is, with the consistent and coordinated support of everyone (because this is a cause for each and every one of us) will it be possible to persist in the humanistic values that we want to continue to guide us as a society, such as transparency, honesty, and responsibility.

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