Nothing New Under the Sun:

Generative AI and Educator Anxiety over Academic Dishonesty

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ABSTRACT

In this article, the authors explore the concerns surrounding academic dishonesty related to generative artificial intelligence (GAI). The authors argue that while there are valid worries about students using GAI in ways the displace student work, these anxieties are not new and have been observed with previous disruptive technologies such as the Internet. By recontextualizing this anxiety within a broader historical perspective, educators can develop strategies to mitigate academic dishonesty while leveraging the benefits of GAI integration in education. Drawing upon lessons learned from addressing plagiarism caused by paper mill usage, the authors suggest incorporating multimodal assessments as an effective strategy for ensuring authentic representation of student learning outcomes at all levels of academia but particularly at doctoral level dissertations where oral defenses play a crucial role in evaluating expertise.

KEYWORDS

academic dishonesty, generative Artificial Intelligence (GAI), disruptive technologies, internet plagiarism, multimodal assessment

Following the 2022 release of the first generative artificial intelligence model to capture widespread public interest, ChatGPT, editorials quickly filled with seemingly countless educators and education analysts worrying about its potential for academic dishonesty. Some even proclaimed the end of the college essay as a means of assessment (e.g., Heilweil, 2022; Marche, 2022; Rosenblatt, 2022; Shrivastava, 2022; Stone, 2022). The concern reached such levels that some school districts and universities banned the technology on their campuses—even if just temporarily (Roseblatt, 2023; Yao & Chan, 2023). As the initial shock of generative artificial intelligence's (GAI) capabilities wore off and researchers began cataloging this technology's benefits for students (Bedington et al., 2024; Kohnke et al., 2023), concerns about academic dishonesty remained. While the use of GAI like ChatGPT in higher education has a myriad of potential ethical concerns (e.g., labor exploitation, damage to the environment, data privacy issues, biases in training data sets, potential copyright violations, see the essays in Holmes & Porayska-Pomsta, 2022), its potential for academic dishonesty has received disproportionate attention.

In response to this persistent anxiety, in this article, we explore the underlying concerns about academic dishonesty resulting from the use of GAI, recontextualizing them as part of a larger pattern of educator responses to technologies that can potentially redefine existing systems and industries known as disruptive technologies (Christensen et al., 2018). We argue that while there are valid

concerns about students using GAI to submit work that does not reflect their knowledge or learning, these concerns echo those raised by educators for previous disruptive technologies, pointing specifically at the advent of the Internet. Reframing this anxiety does not eliminate concerns about potential academic dishonesty, it qualifiedly affirms their legitimacy, but it also emphasizes that they are surmountable. And it points to how the disruption wrought by GAI technologies, like the disruption caused by the Internet, will rekindle deeper conversations about how texts are created and engaged. We also identify the ways in which a well-established practice can address the specific worries of graduate faculty working with doctoral students who are writing dissertations or capstone theses.

The following argument unfolds in three steps. First, we examine the anxiety that often emerges following the introduction of a new disruptive technology, arguing that while people in many industries face artificial intelligence (AI)-related anxiety over job replacement, educators experience a unique anxiety about complete student-displacing uses of GAI (a specific type of AI) that amount to academic dishonesty. Second, we then argue that these concerns are not new by drawing parallels with the concerns of educators over the rise of another disruptive technology: the Internet. We argue, furthermore, that while educator concerns that the Internet could increase academic dishonesty were valid, a deeper conversation emerged about how Internet use changed how users engage texts and the process of text production. Third, we argue that while GAI is

a new technology, the concern that students submit work that is not reflective of their knowledge or learning has a long tradition in education and, as such, educators have already developed several tools and strategies to mitigate it. While many of these insights could apply to writers at any level, we conclude by drawing implications specifically for graduate faculty who rely heavily upon dissertations and theses as a means of assessing student expertise.

AI AND THE EDUCATOR'S ANXIETY

In many respects, GAI is one of the more substantive disruptive technologies in the last two decades because of its ability to create new markets and redefine existing ones. The term disruptive technology (now more commonly referred to as disruptive innovation) has taken on a wide range of definitions and criteria in business theory since its initial use in 1995 (Bower & Christensen, 1995). However, broadly speaking, a *disruptive technology* is technology that holds the potential to redefine (or disrupt) existing markets and industries (Christensen et al., 2018).

GAI is particularly disruptive due to its rate of adoption, for which it is helpful to refer to Rogers's (1962) theory of the diffusion of innovation. Part of Rogers's theory identifies five successive categories or groups who adopt a new technology or innovation: innovators (2.5% of users), early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%). If one considers faculty and students separately, as what Rogers (1962) would call social systems, the diffusion of GAI between the two groups is substantially different, though both show rapid adoption. In other words, as Coffey (2024) put it in a recent *Inside Higher Ed* article, "Students continue to run laps around faculty when it comes to using generative artificial intelligence" (para. 1). Coffey's (2024) conclusion draws on her comparison of separate studies of each group. A Pearson (2024) study of 800 nationally representative students in the spring of 2024 found that 56% of them had used GAI to increase productivity and 51% had used it to get better grades (para. 4). By comparison, Ruediger et al. (2024) conducted a national survey of faculty and, while 72% of faculty had used GAI at least once for an instructional purpose, only 32% had some degree of confidence about how to use GAI as instructors. These data show how faculty are experimenting with GAI, but that experimentation does not equate to confidence to adopt it into their practice. Comparing students to faculty using Rogers's (1962) categories, then reveals that the students are already into the latter majority category while faculty are a step behind (approximately 20%) in the early majority stage—and all this less than 2 years after GAI first became widely available to the public. If being a disruptive technology means redefining the industry, GAI has already proven disruptive in higher education.

It is common for such disruptions to introduce new degrees of anxiety or uncertainty into their respective industries (Aoun, 2017), and few industries are positioned to escape AI's impact (Susskind & Susskind, 2022). The study of AI-related anxiety is an emerging field of research (Johnson & Verdicchio, 2017), and the contributing factors to this anxiety are complex and multifaceted (Li & Huang, 2020). What is clear is that AI-related anxiety can take different forms in different industries as AI is likely to impact different sectors in different ways (Susskind & Susskind, 2022). Despite the breadth of its impact, job replacement is a core concern for many industries, since AI tools are capable of taking over numerous routine tasks currently performed by humans (Aoun, 2017; Gong et al., 2019; Hopcan et al., 2024).

While some educators shared the general worries about being replaced by AI (Hopcan et al., 2024), a unique form of AI-related anxiety quickly manifested and gained popular attention in 2022 within the field of education. While cheating itself is not something that requires technology (eyes can always simply stray to another's paper or screen), technology can open doors to newer more nuanced ways of cheating. The concern most widely publicized among educators was that students could use GAI to create and submit work that does not reflect their learning (Abd-Elaal et al., 2022; Eke, 2023). That is to say, much of the early anxiety in the field of education was over the potential that students would use it to cheat (e.g., Heilweil, 2022; Marche, 2022; Rosenblatt, 2022; Shrivastava, 2022; Stone, 2022).

While submitting evaluative assignments using GAI with minimal or no human participation is what most troubled educators— what we call student-displacing uses—we want to acknowledge that is not the only way the technology can impinge on traditional methods of learning. As we illustrate in Figure 1, a spectrum of possibilities exists for how students might use AI and GAI ranging from benign to troubling according to existing notions of how student content should be produced. Indeed, AI technology and/or its forerunner, machine learning (ML), are already widely used and tacitly accepted by educators in the form of grammar checks like those in Apple's Pages, Google Docs, Grammarly, Microsoft Word, etc. (see, for instance, the discussion of how Google's grammar check uses ML in Hoskere, 2019). And these uses of ML and AI are themselves a step beyond uses of analytical technology ranging from calculators to sophisticated statistical or language-analysis programs like the decades-old programs SPSS (initially released in 1969) and NVivo (initially released in 1997). Apart from well-established uses of ML and non-generative AI, the new possibility of using GAI to co-create—like using it for brainstorming, discovering sources, summarizing sources, or using its output (based on a specifically worded prompt) as a rough draft to be modified and corrected—all fall on a sliding scale that differs in degree from full student-displacing usage. As Werse (2024) pointed out, some uses of GAI enable students to shortcut parts of a learning activity, thereby resulting in them missing out on elements of the learning process. Concerns about this kind of use relate to the effectiveness of student learning experiences and thus differ in kind from those concerns related to academic honesty wherein the student is functionally uninvolved in completing the assignment. For the sake of clarity, we focus here on the clearly justified concerns about the far end of the student-displacing side of the spectrum, in which students use GAI's work entirely in place of their own.

Before moving on, however, it is worth pointing out how the spectrum of ways to co-create with GAI has birthed institutional guidance that is accordingly varied and sometimes tentative, as is exemplified by Perlmutter's (2024) recent advice in *The Chronicle of Higher Education*. Talking to administrators, Perlmutter encourages his readers not to reject the AI revolution but also to carefully develop institutional plans for its use in conversation with a broad contingent of the campus community. Institutional policies from across the country all show qualified embrace of GAI (e.g., see samples of guidance aimed at different constituencies from UCLA, University of Chicago, MIT, and the University of Texas).

Figure 1. Spectrum of Student Displacement by Technology
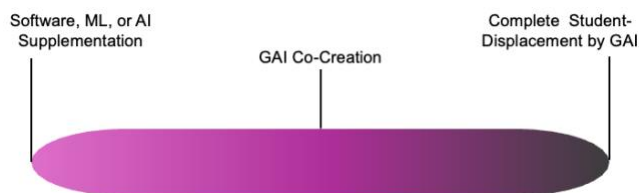
The growing apprehension regarding GAI's capacity to facilitate academic dishonesty that completely displace the student has sparked diverse reactions among educators worldwide. While some have resorted to traditional methods such as in-person, handwritten examinations to deter students from turning in GAI generated content that does not reflect their knowledge (Cassidy, 2023), others have taken broader measures. For instance, New York Public Schools and the University of Hong Kong initially banned GAI use within academic settings (Roseblatt, 2023). These responses reflect the depth of concern and anxiety that many educators experienced with the sudden advent of public use and open-access GAI technology. In many respects, this technology posed a threat to traditional learning experiences and educational assessments (Weale, 2023; Zhai, 2023).

While companies such as ZeroGPT, Copyleaks, and Turnitin have developed numerous tools to detect AI generated text, the comfort those tools provide is illusory. Other tools have emerged on their heels that use the AI detectors against themselves, like undetectable.ai, iteratively running text through one or more AI detector until it produces text that registers as being human made. Granted, such developments are unsurprising given that the central goal of GAI development is to imitate human communication; in a sense, the whole industry is an anti-AI-detection factory.

Educators have remained ambivalent concerning GAI's promise and threat. Many educators and institutions have transitioned away from their initial reactionary approaches to embrace more nuance, exploring ways to harness the advantages of GAI while mitigating its challenges (Chen & Lin, 2024). But not everyone is so positive. The field is still replete with a remarkable breadth of opinions on the subject—ranging from GAI's enthusiastic adopters to those still actively resisting it in education spaces. The complicated juxtaposition of GAI's potential to amplify the educational experience with its potential to contribute to student academic dishonesty has institutions struggling to produce policies and guidelines to direct faculty toward the former while avoiding the latter. Indeed, the fluctuating landscape of juxtaposed apprehension and acceptance is perhaps best illustrated by the rapid change of authorial policies at *Science Magazine*. Initially, in October 2023, the magazine enacted a prohibition on GAI, citing it as academic misconduct. However, in the next month (November 2023), the editorial board reversed its stance, accepting manuscripts co-created using GAI technology as long as authors disclosed GAI use.

As is common with new technology, a lack of familiarity often corresponds with increased anxiety or distrust (Johnson & Verdicchio, 2017). With GAI, it did not help that journalists and editorialists, at times, sensationalized its impact on various industries in their speculations about its future (Autor, 2014). Despite the sensationalizing, the initial educator concern over GAI's potential to contribute to academic dishonesty is a valid one that is worth acknowledging and holding in tension with the numerous benefits GAI can offer to students. The ability to construct learning experiences and then assess the outcomes of those learning experiences is an important part of the role of an educator. Even beyond the valid yet slightly more punitive concern with academic integrity, any technology that enables students to circumvent parts of the learning process or submit content that does not reflect their learning is remarkably disruptive to the central goal of educators. Our purpose for this article, however, is not simply to recognize or validate the reality of these concerns; rather, we seek to reframe these concerns within the broader context of educator apprehensions surrounding disruptive technologies, aiming to foster a more comprehensive understanding of the challenges and opportunities presented by GAI integration in education.

WE'VE BEEN HERE BEFORE: THE INTERNET

This is not the first time educators have experienced concerns over academic dishonesty prompted by a new disruptive technology. As with GAI, the Internet's launch in the early 1990s ushered in a disruptive technology that promised (or threatened) to leave few industries untouched. We do not want to overstate the comparison between the 1993 public launch of the Internet and the 2022 opening of ChatGPT for public use. Indeed, it took 7 years for the internet to achieve the same kind of adoption rate as is currently true of college students (compare *Internet, Broadband Fact Sheet*, 2024; Pearson, 2024). To be sure, numerous differences, nuances, and three decades of technological change separate the two. However, we want to recognize the parallels between the two that can help educators concerned with GAI's potential to recontextualize their anxiety about academic dishonesty (see the comparison also drawn in Anson, 2022).

The rise of the Internet sparked widespread concerns about a potential surge in plagiarism (Chao et al., 2009; Lester, 2008; Renard, 1999). For instance, authors like Snapper (1999), attempted to think through how the Internet would affect issues of copyright piracy and plagiarism. Snapper (1999) argued that, in the Internet age, concerns about plagiarism would outweigh concerns about copyright; plagiarism's unmooring of a document from its proper attribution causes "harm to the reading public" (p. 129) by disconnecting claims from the sources that might be used for corroboration and for further reading. But delineating what constituted a violation of plagiarism (or copyright) conventions was not at all clear. The situation Snapper (1999) identified initiated a technological arms race for services like Turnitin.com that aimed to detect and thus deter students from copying and pasting material from the Internet. Consequently, educators sometimes restricted students' Internet access to ensure its appropriate use within an academic context. This phenomenon also prompted a shift towards fostering Internet literacy among educators who sought ways to incorporate relevant online resources into their teaching practices (for example, see Hill & Ford, 2000; Newcomb et al., 1998).

Whether or not the Internet fueled a rapid increase in academic dishonesty has been more complicated to prove than initially suspected. On the one hand, some studies claimed quite definitively that the Internet substantively increased academic dishonesty. For instance, a 2007 study of librarian involvement in the detection and prevention of plagiarism concluded that "an increasingly computer-literate student body has…magnified the scope of the problem" (Stepchyshyn & Nelson, 2007, p. 7). On the other hand, in a more comprehensive assessment of plagiarism in higher education, Eaton

(2021) cautioned that there is ultimately no conclusive evidence that the Internet directly caused an increase in plagiarism, especially given the corresponding exponential increase in textual production. No doubt, part of the challenge comes from the lack of longitudinal studies that definitively compared plagiarism rates before and after the rise of the Internet.

While it may be difficult to prove definitively that the Internet fueled a rise in academic dishonesty, it is clear that the influence of the Internet over reading and writing practices led to conversations about how this disruptive technology changed users' fundamental approaches to engaging and creating texts (Carr, 2011; McCulloch, 2020). This sentiment found deeper theoretical grounding in the philosophy of technology work that acknowledged how technological innovations often impact technology users, eventually transforming cultural norms (Postman, 1992). In line with McLuhan's (1964) often-quoted phrase, the "medium is the message" (p. 23), Carr (2011) and Eaton (2021) suggest online media have redefined how readers approach and engage texts. Lam (2011) provides an example of how digital formats have caused a transition of text engagement and reading leading to the rise of a *cut and paste culture* wherein learners effortlessly compile preexisting ideas, quotes, and observations without truly synthesizing them into their intellectual framework (see similarly Lester, 2008).

The fundamental nature of this shift in understanding is perhaps most evident in how the Internet prompted (or perhaps sped up, following developments in the philosophy of language and semiotics) the expansion of terms like literacy. Noting how technology was providing for ever-greater diversity in communication, The New London Group (1996) proposed the term multiliteracies as a way to encompass what they described as the "local diversity and global connectedness" (p. 64) created by the Internet. Since then, scholars have continued to expand *literacy*, further losing its ties with the traditional concepts of reading and writing of physical texts (for example, see the call for even greater variety in theoretical conceptions of literacy by Smith, 2017).

The broader cultural shift in how students conceptualize their relationships with texts in online spaces is, in many ways, a deeper and more foundational issue that has implications for the concerns about academic integrity. Definitions of academic integrity and concerns over academic dishonesty, at least when it comes to textual production, often rest on a certain set of norms and assumptions about authorship, intellectual property, and textual production. These assumptions and norms, however, can differ across industries and disciplines (Anson, 2011), which can result in slightly different criteria for what constitutes academic dishonesty (Holdstein & Aquiline, 2014). In creative writing, for example, alluding to the language or including the words of another without attribution can be a clever tribute to a role model whereas any unattributed language in a doctoral dissertation could be grounds for academic dismissal. In both of these cases, the assumptions concerning authorship, textual production, and intellectual property differ profoundly; what is an erudite flourish in one context is detrimental to one's career in the other.

In summary, while GAI is a new form of technology, the educator's concern that a new disruptive technology could increase academic dishonesty is not. Three decades ago, educators experienced an equally disruptive technological development; and while there are many differences between GAI and the Internet, the anxiety that educators experienced in response to the technological advancements is remarkably similar. The rise of public access to GAI

and the Internet both raised concerns that students could use them to submit work that did not reflect their learning. Both have also disrupted understandings regarding how texts are produced and engaged with. Seeing the present anxiety over GAI and academic dishonesty in light of the advent of the Internet demonstrates how both are part of a larger pattern wherein educators encounter and eventually engage disruptive technologies. This perspective can help modern users see that the present anxiety is valid, normal, and yet, not permanent. While many educators initially expressed concerns over the potential of the Internet to increase plagiarism, they eventually developed ways of assessment that leveraged the strengths of the Internet while mitigating its potential for academic dishonesty. While the anxiety that students could use GAI to cheat is real and justified, educators will continue to develop activities and assessment strategies that leverage GAI's strengths while mitigating its shortcomings. Furthermore, as with the Internet, a deeper, more foundational conversation about how GAI can change students' fundamental assumptions about authorship, intellectual property, and textual production will emerge, which will reframe educator's concerns about academic integrity.

NEW TECHNOLOGIES, OLD SOLUTIONS

While GAIs are new, worries about student-displacing work are not new and, likewise, the ways in which educators have mitigated these concerns, even in their most pernicious forms, are not new. Perhaps the most insidious and impregnable form of student-displacing work made more prevalent by the Internet is the contract cheating industry, which has undeniably expanded over the last several decades (Bartlett, 2009). Students with ill intent are now easily able to attain a custom paper, tailored to their assignment's specifications, from any number of websites, some of which even employ out-of-work academics and former faculty (Delaney, 2012). Awareness (and concern) of just how prominent this industry is substantively rose in 2010 following the *Chronicle for Higher Education's* publication of David Tomar's provocative exposé of his experience as a paper mill professional (Dante, 2010a, 2010b; Tomar, 2012). Tomar's (2012) account shed light on the industry's reach, revealing instances where students had navigated entire graduate programs by submitting purchased papers instead of writing even a single paper. The globalization of this industry has allowed it to progressively offer its services at lower and lower costs to willing students (Bartlett, 2009; White, 2016). Purchased papers can be notoriously difficult to catch because, unless a student admits to it, it is remarkably difficult to prove definitively that a paper was written by one human author and not another (one could calculate the degree to which a paper matches the vocabulary, style, and syntax of a given author, but that is all).

Educators have deployed strategies to combat the paper mill industry that have a long history in education—incorporating other complementary ways for students to demonstrate their learning in addition to (or sometimes in place of) their written product. Specifically, one of the most common ways to ensure that a student's paper reflects their understanding of the topic is to use multimodal assessment, asking students to supplement their papers with an oral discussion or presentation (Eaton, 2021). While a presentation might be scripted with GAI, having Q and A after a presentation, or better yet, simply a conversation (especially if it is in-person), leaves little room for students to hide their own thinking behind their GAI-produced answers. Multimodal activities are not

only great assessment strategies from a learning outcomes perspective, they also allow educators to compare the understanding demonstrated in a student's oral presentation on a topic to the understanding evident in a written product.

These same strategies can be applied to mitigate the concern over student-displacing work in the realm of doctoral dissertations or other graduate theses. Ensuring that a student's product accurately represents their learning is of utmost importance, particularly at the doctoral level in which the dissertation or a capstone thesis project is meant to clearly demonstrate their expertise and justify their degree. The dissertation or capstone thesis project is often accompanied by an oral defense or discussion, in which students answer questions about their studies. Despite being centuries old and already in common use, oral defenses can assume new significance as educators wrestle with the potential for GAI-created dissertations (as opposed to AI-enhanced or co-created). The well-established multimodal form of assessment is not just helpful for mitigating academic dishonesty, it is also good educational practice to ensure that students are able to demonstrate their expertise in a variety of media and settings (something of particular value for scholar-practitioners). As White (2016) highlights, this requires additional time and resources from the dissertation committee to uphold academic standards and ensure that any assistance provided falls within acceptable boundaries. Nevertheless, educators can draw upon this familiar practice to help mitigate concerns that GAI has been used inappropriately to generate content that does not accurately reflect the student's expertise.

The use of multiple modalities can also serve as a means for educators to effectively assess, in a less formal way, graduate student learning in the classroom setting. Here again, such use conforms to well-established practices in line with seminar-style graduate courses. In the context of a seminar-style course, students are given the opportunity to demonstrate the depth of their knowledge of a subject through questioning from peers or by the instructor. Using seminars also has the benefit of teaching the oral communication skills necessary to succeed in an oral defense of a dissertation or thesis.

CONCLUSION: NOTHING NEW UNDER THE SUN

In the words of the biblical book of Ecclesiastes, "There is nothing new under the sun" (*New Revised Standard Updated Edition*, 2021). Educators have long worried about new technology's potential to enable student cheating. Contextualizing the current educator anxiety concerning GAI with past responses to new technologies allows for self-reflection upon not just the potential of GAI to revolutionize written assessments including graduate dissertations and theses, but also upon the reasons educators might be tempted to respond with concern. While there are differences between the Internet and GAI, in both cases, educator anxiety over its potential to contribute to academic dishonesty coexists with exciting possibilities offered by the new technology. One does not necessarily have to invalidate the other. Furthermore, modern educators can learn from the rise of the Internet to not just focus on the technology's potential for academic dishonesty but rather to look deeper into how GAI could alter students' approaches to text engagement and text production—two foundational assumptions that underly the distinction between honest or dishonest academic conduct.

The primary concern over the use of GAI in academic settings is complete student-displacement in which students submit work that does not reflect their knowledge, misleading educators and constituting academic dishonesty. While there are acceptable ways for students to use GAI to enhance their work, such uses exist on a spectrum with increasingly complicated questions and increasing anxiety about cheating for educators. This concern is merely the newest instantiation of a well-established worry that has ranged from cutting and pasting material for assignments to the quite extensive contract cheating industry. However, studies on how to mitigate this dishonesty recognize that multimodal assessment is an effective way to present opportunities for students to present their knowledge and expertise in multiple ways, allowing the educator to not rely solely on a written product. GAI no doubt will revolutionize the realm of dissertation writing and as it does so, the dissertation defense will likely assume a renewed importance, serving as a way for students to demonstrate that the expertise exhibited in writing reflects the expertise they carry with them as they go out into the world.

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