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Global Trends in Education: Artificial Intelligence, Postplagiarism, and Future-focused Learning for 2025 and Beyond – 2024–2025 Werklund Distinguished Research Lecture

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Abstract

In this distinguished research lecture, Dr. Sarah Elaine Eaton explores how artificial intelligence (AI) is transforming global education and reshaping our approach to teaching, learning, and assessment. Her talk will examine breakthrough technologies that are redefining education such as Generative AI (GenAI), neurotechnology, and brain-computer interfaces (BCIs) and consider how they might impact education in the coming years. Dr. Eaton will ground the rapid technological changes transforming education in the timeless principles of integrity, ethics, equity, and human rights. Dr. Eaton will talk about how these enduring cornerstones provide a foundation of hope for navigating an era of unprecedented technological progress. At the heart of it all, Dr. Eaton inspire us to think about how we can prepare today's students to be ethical leaders and citizens of tomorrow. Postplagiarism serves as a backdrop for Dr. Eaton's lecture, which is considered a once-in-a-career honour at the Werklund School of Education, University of Calgary.

Keywords: Academic integrity, Academic misconduct, Academic cheating, Plagiarism, Generative artificial intelligence, GenAI, Artificial intelligence, Neurotechnology, Brain-computer interface, BCI, Human rights, Education, Higher education, Futurism, Neuroethics, Neurorights, Postplagiarism

Preface

At the University of Calgary, if you walk down the third-floor hallway of the Education Block building, you will see numerous plaques lining the walls. You may have walked past them without ever really looking at them. They show the names of people who have received awards from the school of education over the decades. After I learned that I would be delivering the 2024–2025 Werklund Distinguished Research lecture, I spent some time in that hallway looking at those plaques in detail.

The tradition of this lecture started in 1983. The plaques for the Distinguished Research Lecture bear the names of those in whose footsteps I follow. They are or

were, my colleagues, mentors, in some cases, my professors, and those who have helped to shape this school of education and its students over time.

History and traditions are not interesting because they are facts and figures to keep filed away in our brain, but because they tell a story about what matters to us and to our community. These particular plaques tell a story about the history of our school of education, of those who came before us and those on whose shoulders we stand.

I never really imagined myself delivering this lecture. Of all the things I could say that I am good at, being distinguished is not one of them. I was a first-generation student, which means I am now a first-generation scholar. Both of my parents had a grade 10 education. I grew up under the poverty line. I excelled at reading and writing (and conversely, was horrible at math). I spent most of my childhood with my nose in a book and dreamed about being a professor when I grew up.

Well, here I am, but let me tell you that the journey has been fraught, as all worthy journeys are, with trials and tribulations. Even though from the outside it may appear as though I have arrived at some special place, I can tell you that for me at least, I still have imposter syndrome, I still suffer from anxiety, and perfectionism persists as a lifelong nemesis that I continue to battle.

As I was preparing, I kept getting tripped up on the word 'distinguished'. I did not want to be, or feel like, a fraud. So, instead of trying to be something I am not (in this case, distinguished) I am going to focus on what I am good at, which is being *passionate* about my scholarship. Academic integrity, plagiarism, and ethics, are some of my most special interests. I hope that by the end of this talk you will be a little bit more interested in them, too.

Part I: a story about academic cheating

Good guys versus bad guys

Students have been cheating for as long as there have been examinations and education.

Correction: *Humans* have been cheating since time immemorial.

Both of those statements are true and we have a myriad of evidence to support both assertions, but you might have had a more visceral or emotional reaction to one of those statements. Let me explain why.

Every story needs a hero and a villain. As long as there have been stories, there have been good guys and bad guys, protagonists and antagonists, heroes and villains. In the first statement, "Students have been cheating for as long as there have been examinations and education," students are the bad guys. That must mean that there is a good guy. And of course, that good guy is the teacher.

When we say *humans* have been cheating since time immemorial, things get a little fuzzy. In that scenario, there is no clear villain, nor a clear hero. We have to pause and think about it. We know the statement is true, but without a clear hero or villain the story is confusing or boring or both.

Our human brains are programmed to accept the idea of good guys and bad guys. In the story of academic cheating, the student is the villain and the teacher is the hero. We have hung onto this archetype for centuries.

The narrative arc of academic cheating

Now, we have the characters in our story (a student and a teacher), we need a storyline.

In storytelling, we have what is called the narrative arc or the structure of the story. Stories that capture our attention and our hearts follow a narrative arc. There are a few different types, but the basic idea goes something like this:

- **Exposition**: The introduction of the characters, setting, and conflict
- **Rising action**: The action or tension gradually increases
- **Climax**: The most dramatic moment, when the conflict escalates
- **Falling action**: The action or tension gradually decreases
- **Resolution**: The conflict is resolved and the story ends

A classic story of academic cheating

Now that we have our characters and our narrative arc, let's tell a story. No doubt it is one you are already familiar with.

Exposition

Alex is our student and it is final exam time. Alex is anxious about the exam, not sleeping well, and worried about failure.

Rising action

Alex enters the exam hall with a cheat sheet, nervous… knowing it is wrong, but there is no other choice. The exam is going to be brutal and without the notes, failure is imminent.

Students take their seats in the exam hall. The teacher distributes the exam. Tension builds as students wait until the moment the teacher says, "Begin!" We hear the sound of papers rustling as students quickly flip over their tests and begin the exam.

Tension remains high. The teacher is on the lookout for any potential cheaters… And in this story, we have one. We, the audience, already knows that Alex has those crib notes. The teacher in the story does not yet know this— but they know there must be at least one student cheating. There always is!

Climax

Ah ha! The teacher has found Alex's notes! Gotcha! In a dramatic sweep, Alex gets pulled out of the chair by the collar and marched up to the front of the exam hall. The villain has been revealed. Our heroic teacher has found the cheater and exposed them. The crib notes are confiscated and Alex is thrown out of the exam room.

Other students in the exam hall shift nervously as they try to concentrate on their own tests, but also nervous that they might be targeted next.

Falling action

The teacher follows up after the examination. An investigation is opened into Alex's cheating.

Resolution

Alex is found guilty of cheating and expelled from the school.

Deconstructing the story

Let's take a moment to reflect on this story. There was probably nothing about this story that surprised you, though you might not have agreed with the resolution. Maybe you wanted Alex to confess their sin and be forgiven, to have learned a lesson and to never have cheated again. That would have been another possible resolution – a prodigal student, so to speak. That is another classic story structure.

Now let's look at the characters. In your mind, what was Alex like? I purposely chose a gender-neutral name for our student. As this story played out in your mind, was Alex a male or female (or some other gender)?

How about the teacher? In your mind, was the teacher a male or a female? Transgender or Nonbinary? Although education is a female-dominated profession, in this story, if your hero was a male teacher, you might have fallen into a classic pattern of thinking about a hero as a strong authoritative male figure. After all, that is an archetype in a classic villain-hero story.

This story fits a narrative arc that we are all familiar with, with a teacher as the good guy and the student as the bad guy. That is how it has been for centuries.

Part II: policies and pedagogues

The historical and current narratives about cheating are reinforced by systems, policies, and procedures that guide how we deal with allegations of misconduct.

Natural justice and procedural fairness

In many countries, the processes used to investigate and address misconduct can mimic judicial court systems (Murphy & Perkins, 2025; Hannah 1996; Kelleher 2016; Morrsion & Zachariah, 2022; Wilson & Moriarty 2022; Woods 1998). I am not a lawyer, and the explanation I am about to offer may not adhere to the strict details of a legal system. I am providing an overview as an informed layperson, but not a legal expert. It is my understanding that the principles of natural justice and procedural fairness can vary slightly from one jurisdiction to the next, but often they follow these general principles:

> Reasonable notice: The person who is alleged to have engaged in misconduct must be informed of the allegations against them and be given adequate notice about the nature of the procedures that will be followed.
> Right to a fair hearing: The parties involved in the allegation have an opportunity to present their case. This is often done in the form of an interview or an oral hearing, but sometimes it is done in writing.
> Reasoned decision that is free from bias: Decisions made about the outcome of a case are reasoned, valid, and justified according to the evidence presented. Those who

make the decisions are free from bias and discrimination, have no prior involvement in the case, and do not benefit, financially or otherwise, from a specific outcome.

Right to support or assistance: The person who is alleged to have engaged in misconduct has the right to have a support person during a hearing or an interview. In some cases, or jurisdictions, students might bring a lawyer, and in other cases, they might bring a parent or someone else to advocate for them. A language interpreter is often also permitted.

Right to appeal: If the individual who has received a decision relating to their case believes that due process has not been followed, that the decision against them is biased, or that relevant new information has come forward that could not have been presented previously, they can request an appeal of the decision. An appeal process is often related to, but separate from, the misconduct investigation process.

Main methods to address academic misconduct: punitive, educative, and restorative

From 2018 to 2023, I worked with collaborators to analyze academic misconduct policies from post-secondary institutions across Canada. Various teams on our project examined 160 policy documents from 96 institutions. Our results showed that there are basically three methods that we use to investigate and address misconduct: the punitive, the educative, and the restorative (Eaton et al. 2022; Vogt et al., 2025; Stoesz & Eaton 2022; Miron et al. 2021; Stoesz et al. 2019).

Our findings echo and extend previous research on academic integrity policies (e.g., Bretag & Mahmud 2016; Bretag et al. 2011a, 2011b; East 2016; Eaton et al. 2017; Glendinning 2013; Glendinning et al. 2013; Moya & Eaton 2024). In the sections that follow, I explore the characteristics of each method. These are simplified for the purposes of this public lecture but let me acknowledge that there is much depth and nuance that is worthy of consideration and extends beyond what I can cover in a short presentation (Fig. 1).

Punitive method

When using a punitive method to address misconduct, the outcome of an investigation is often a punishment for the person who has violated the rules. The punitive method

Punitive	Educative	Restorative
• Crime and punishment approach. • Sanctions should be fair and fit the offense. • Progressive discipline model. Second and subsequent offences result in harsher penalties. • Relatively easy to track and monitor.	• Rehabilitative. • Provides opportunities for students to learn. • Builds skills. • Seeks to reduce recidivism. • Easy to track some aspects (e.g., workshops attended, self-reported learning, rates of recidivism.)	• Seeks to repair harm. • Focus on community-building and long-term relationships. • Can be time-intensive. • All parties should agree to the approach (not appropriate in cases where there is no willingness to accept responsibility).

Fig. 1 Three Methods to Address Misconduct

uses a crime-and-punishment approach. In other words, the punishment should fit the crime and sanctions should be fair and just.

This approach uses a progressive discipline model. This means that harsher consequences are levied for second and subsequent offences. The severity of the sanctions increases with each subsequent occurrence of misconduct. The ultimate penalty can be suspension or expulsion (also called exclusion in some places). In terms of case management, offenses and their corresponding consequences are easy to track and monitor.

In our research on academic misconduct policies, we found the punitive method to be used consistently across Canada, and research from other countries shows that we are not alone in this regard. Although academic integrity experts advocate for the inclusion of educative or restorative methods to address misconduct, punitive methods persist and even in 2025, some faculty members and administrators seem to be "out to punish students for punishment's sake" (Murphy & Perkins, 2025, p. 4).

Educative method

Educative (also called 'educational') methods to address to student misconduct emphasize moral rehabilitation and academic skill-building to increase the likelihood of academic success and reduce the likelihood of repeat offences. Often, an educative method is combined with a punitive one. In other instances, individual educators might be tasked with addressing minor offenses directly with the student, thus lightening the administrative burden on leaders and the system as a whole.

An educative method of addressing misconduct provides students with opportunities to learn and build skills. This might be done through individual consultations with educators, tutors, or writing coaches, for example, or students might take workshops through the library or student affairs office.

When using this method, we aim to reduce recidivism (the tendency of an individual to reoffend). It is easy to track some aspects of this method, such as the number of workshops offered by the institution, the number of participants who attend the workshops, self-reported learning, and rates of recidivism.

Restorative method

Restorative justice and restorative practices prioritize repairing harm and community building. A restorative approach can be time- and resource-intensive. For a restorative resolution to be appropriate, all parties should agree to the approach. This means it is not appropriate in cases where an individual shows no willingness to accept responsibility.

Restorative resolutions have been promoted by academic integrity scholars and professionals across multiple countries (Boisvert et al., 2020; Moriarty & Wilson 2022; Murdoch & House 2024; Sopcak 2019a, 2019b, 2020; Sopcak & Hood 2022). In Canada, at the time of our research anyway, there was one university that stood out as an exemplar of excellence for using restorative resolutions to academic misconduct, MacEwan University in Edmonton. This was largely due to the efforts of one man, Dr. Paul Sopcak, who laboured tirelessly as an advocate, scholar, and administrator, eventually convincing the university administration that it was worth trying (Sopcak 2019a, 2019b, 2020; Sopcak & Hood 2022). I have had many conversations with Paul over the years and I was always fascinated about how he was able to manage to convince his university to

take up restorative approaches as the default method for addressing misconduct, assuming of course, that the individual(s) involved were willing to take responsibility for their actions.

Not only is Paul a passionate advocate for social justice and student success, he is patient, level-headed, and practical. Eventually, he was able to show that restorative resolutions reduced repeat offenses and thus saved the institution money. He framed the problem—and the solution—in economic terms that made sense to the university administration. In effect, MacEwan University, and its leaders, became the heroes of a story in which doing thing differently not only helped to reduce misconduct, but also helped to shift an age-old archetypical narrative away from students as cheaters to students members of a learning community.

Gotcha! Why punitive approaches persist

Dr. Rebecca Moore Howard, Professor Emerita from Syracuse University in New York claimed that defining plagiarism is impossible (Howard 2000) because of its many cultural complexities. Dr. Howard talks about the 'Gotcha!' approach, which was exemplified in our first story. In this scenario, the teacher is a kind of plagiarism hunter and students are treated as deviants who need to be tracked down and punished (Howard 2001). Howard pleads with educators to reject the 'Gotcha!' approach, saying, "Don't police! Just teach!" (Howard 2002).

However laudable the pleas of Professor Howard and others like her may be, punitive methods of addressing misconduct persist. This is because they are easy to implement. There is an act of misconduct and a corresponding consequence. As much as we care about our students and want the best for them, the easiest methods for the administrator or teacher who is overworked, tired, and lacks both resources and time, is not only the path of least resistance, but is also a method that helps to ensure self-preservation if one is the exhausted educator or administrator who is obliged to investigate allegations and manage cases. We tell ourselves that we simply do not have enough energy or hours in the day to commit to resource-intensive approaches like restorative justice. That is not to say that we shouldn't; but rather that the current systems in which we work make it difficult for us to adopt new ways of doing things. When the new ways are more expensive and more labour intensive, we are less likely to adopt them, even if they are better, kinder, and more humane in the long run.

Traditional punitive methods also allow us to maintain the age-old archetypes of students as villains who need to be punished for transgressions. This system fits the classic narrative arc and allows for nice and neat resolutions that do not make us think too hard.

Educative responses to misconduct can be layered on to a punitive response, of course. They take more effort and they also support a classic narrative arc of the prodigal student who is reformed and rehabilitated by the valiant efforts of an educator or the student affairs professional who no doubt puts in extra effort and time to help the victim/villain. The victim/villain just needs a little help to be redeemed. In this scenario, educators, be they teachers or professional staff, are the heroes who lead the errant students towards the path of redemption and righteousness, helping them along their journey towards academic success. The delinquent student can be redeemed, reformed, and made good again through these heroic efforts.

Once converted from villain into hero, the redeemed student's arduous journey eventually leads them to their shiny golden parchment, the treasure that they seek through their trials and tribulations. In the academic story, the degree is the treasure at the end of a perilous journey.

Why teachers don't report cheating

The first research study I conducted when I was hired as an assistant professor, together with a team of research assistants, was to interview professors about academic integrity. Our study, which only had 17 participants and was conducted at one university, had three main findings (Eaton et al. 2017, 2020):

1. There is no universal way to understand plagiarism or academic cheating. Different professors had different understandings of what it meant to act with integrity. Sometimes their ideas aligned with institutional policies and procedures, and sometimes they did not.
2. If professors' ideas about plagiarism and academic cheating do not align with institutional policies and procedures, they might actively seek ways to circumvent official ways of responding to misconduct and instead, often clandestinely, make their own independent decisions about how to proceed. This can either work in the students' favour or not. We will talk more about that later. For now, just know that if you are a professor who has ever failed to report alleged or actual academic cheating or plagiarism, you are not alone.
3. Finally, we found that there can be an extraordinary emotional and psychological impact on an educator who suspects a student has cheated. This can include feelings of frustration and anger; feeling like a failure as an educator; feelings of disenfranchisement, lack of agency and lack of authority when the system in which they work requires them to report the allegation to an administrator and then act as if the incident never happened. Educators can also be afraid of reporting allegations of cheating. Our research participants told us that they were fearful of being labelled a troublemaker by their bosses; that they feared students might retaliate by giving them low scores on course evaluations; and they were broadly afraid of a negative impact to their careers, or even losing their job.

The results of a small study with only 17 participants cannot be generalized. What we found when we looked more deeply into the research literature was that there were more than five decades of studies that consistently showed that *less than half of all faculty members report misconduct or suspected cheating* (Coren 2011, 2012; Eaton 2021; MacLeod & Eaton 2020; McCabe 1993; Nadelson 2007; Nuss 1984; Singhal 1982; Wright and Kelly 1974). So, our study merely confirmed what previous research showed and added some new data from Canada.

The findings about the emotional and psychological impact on faculty members surprised us, because there was less written about this in the research up to that time. There was a lot of research about students, but less about faculty. That is a topic for a whole other talk, but for now let me say that in our research, the professors who did not report cheating saw themselves as the good guys. They were not only saving themselves the

hassle and stress of reporting the incident, but they were also helping the students avoid the stress of going through an investigation and possibly receiving a punishment that might be too lenient or too harsh. Sometimes, they also saw themselves as being heroes in a story where either the educational system or the administration, was the bad guy.

A refusal to report suspected or actual academic cheating can be a form of protest and of resistance against the academic establishment and against policies and procedures that teachers were either not involved in developing, do not agree with, or both. A decision not to report, followed by inaction, or doing nothing, is one thing. Nothing happens and the student gets a free pass, so to speak. But a refusal to report followed by taking cheating into one's own hands can have a very different outcome. It can be a plot twist that turns into a horror story.

Part III: alternate story lines

Flipping the narrative: the teacher as a bad guy

Let me give you a real-world example. Michael Lajoie is a real person. He was a professor at Algoma University in Ontario, Canada. He took it upon himself not to report students whom he believed had plagiarized and instead took matters into his own hands – quite literally.

Michael Lajoie confronted students for alleged plagiarism, telling them that they had violated the university's code of conduct, which could lead to expulsion. So far, this story follows a classic arc, but here comes the twist. Lajoie then told students that they could accept "a different form of punishment" (Richardson 2024, n.p.), a literal kick in the ass.

Lajoie gave students a choice between being reported to the authorities for plagiarism or of accepting corporal punishment that he would personally administer. News reports note that if students accepted the option of corporal punishment, Lajoie drove them to his home, took them to his basement, and beat them "approximately 20 times with a rectangular wooden stick" (Richardson 2024) or kicked them forcefully in the buttocks.

This was not just one student, by the way. The same story played out multiple times before the authorities were notified. Once the police got involved, charges were laid against Lavoie and a criminal investigation was launched. At the end of it all, Lavoie pleaded guilty to assaulting four students, all of whom happened to be international students.

Are you feeling indignant? Horrified? If so, your feelings are normal. We do not expect the teacher to be a villain. Our sense of social justice is heightened when we learn that the students are international students, who are far away from their families and trying their best to succeed in a new system.

There are many stereotypes about international students and academic cheating (Bexley & Vu, 2015; Bretag 2019; Harper & Prentice 2024; Eaton & Burns 2018; Leask 2006; Openo 2019). Despite the stereotypes, international students *do not engage in more misconduct than domestic students*, but they are *reported* more often than their domestic peers (Beasley 2016; Bretag et al. 2019; Davis 2021; Seuwou et al. 2023). In other words, domestic students are better at not getting caught (Bretag 2019). In our stories about good guys and bad guys, the stereotype is usually that the bad guy is someone who does not look like us or act like us. That is part of the archetype: good guys and bad guys are different.

This is a true story, with real police records, real court proceedings, and real news stories that documented it all (CBC News 2023; Ougler 2023; Panwar 2024; Richardson 2024). In this story, in the end the teacher was the villain, the students were the victims, and the police were the heroes. The archetypes persist.

The "tyrannical pedagogue" (Drake 1941, p. 420) character is nothing new in education. You might have your own stories about a tyrannical teacher who made your life a living hell when you were in school. Maybe they were not criminally charged, but the impact of their brutishness lives on the hearts and minds of their former pupils traumatized by the teacher's authoritarianism.

We can see that being a student is not easy. You might be the bad guy or you might be a victim, but rarely are you the hero.

The alternative villain: technology as tyrant

Another twist on the story is when the villain is not a person, but a technology. In the first story, about Alex cheating on an exam, the technology, if you will, was the paper on which the crib notes were written, but in that scenario, the paper is not a villain. It is just an inanimate tool that helps a bad guy do bad things.

But when the technology moves from being inanimate to interactive, we suddenly have another plot twist. The technology becomes the bad guy. Cell phones, tablets, and computer screens have all been cast in the role of evil technology that will corrupt young minds and cause moral turpitude.

Dr. Amy Orben writes about the Sisyphean cycle of technology panics this way:

> *"Technology panics—times in which the general population is gripped by intense worry and concern about a certain technology—are influential and reoccurring. Current worries about new technologies are surprisingly similar to concerns about technologies that have preoccupied parents and policymakers in the past but are met with amusement today." (Orben, 2020, p. 1144)*

Past technologies that have created societal panic include the radio (1940s), the television (1950s), and the Internet (1990s). Although the radio and the television may have resulted in moral panic, these may feel less visceral to many of us because by the time we were born, these technologies were already part of everyday life… and we wondered how we ever lived without them.

There are probably some folks here today who were born in 1990s or early 2000s who have never known a world without the Internet. The idea of 'cut-and-paste' plagiarism did not really exist before the Internet. Before that, we plagiarised by copying things by hand, or by re-typing them (e.g., Canadian Press 1999; Howard 1995; Lathrop & Foss 2000). There are hundreds of scholarly articles and news stories about how the Internet was a terrible villain that enabled the horrible evil of "cyber-plagiarism", as it was dubbed by some (e.g., Oliphant 2002). Meanwhile, actual plagiarism scholars urged educators and administrators to focus on teaching students academic skills rather than vilifying technology (e.g., Howard & Davies 2009).

Current technologies that are cast as villains in our classrooms include:

- Cell phones

- "Screens" (as a vague, unnamed evil)
- ChatGPT
- GenAI tools in general

Plagiarism scholars Howard and Davies (2009) summed it up years ago when they said, "trying to legislate the wired world simply won't work" (p. 2).

Part IV: the academic integrity arms race

The academic integrity arms race: technology posing as the good guy

Now is probably a good time to talk about the academic integrity arms race, since this did not really exist before the Internet. The academic integrity arms race is about trying to use technology to catch students who cheat using technology (Badge & Scott 2009; Badge et al. 2007; Eaton 2022; Nilsson 2016). The job of policing and detecting is performed by automated programs that are advertised as services that will lighten the burden for professors who could be spending their valuable time on more productive activities, such as research (Fig. 2).

The perpetual cycle of the academic integrity arms race goes something like this, starting with the arrow on the top left… A new technology such as the Internet emerges. There are a variety of different responses in society from fear to confusion to eagerness and excitement.

Then we move to the arrow on the top right. Educators start to learn how to use the new technology and incorporate it into their professional practice. Concurrently, students start to learn how to use the new technology to their advantage, sometimes for learning and sometimes for cheating. Any technology can be used for good, for evil, and any purposes in between.

Then we move to the arrow on the bottom right. This arrow represents the emergence of corporations who develop products and services to deter and detect misconduct. So-called 'anti-cheating' or 'plagiarism detection' technology-based platforms and services

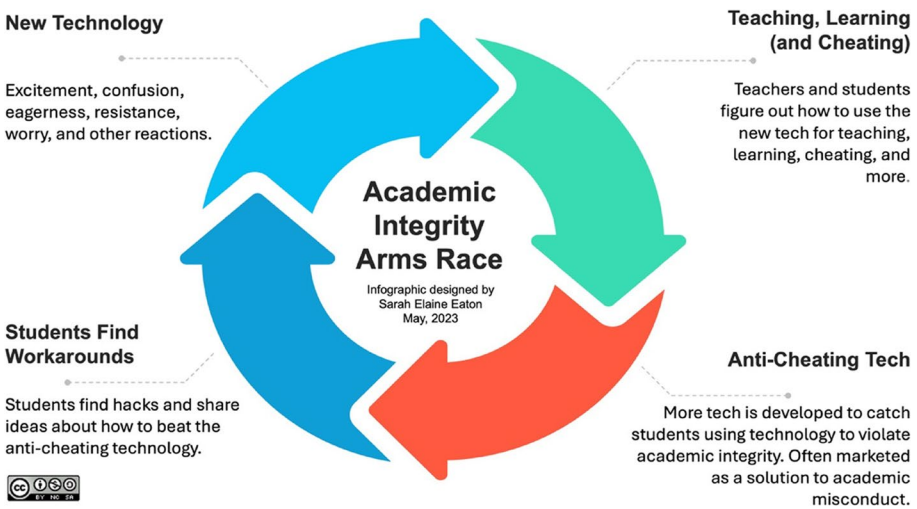

Fig. 2 The Academic Integrity Arms Race

are licensed to educational institutions on a massive scale, on the principle of upholding academic integrity. For what it is worth, there seems to be limited evidence to show that such 'anti-cheating' or 'anti-plagiarism' technologies actually reduce rates of misconduct. Institutions spend mega-money on licensing fees for promises of technology that could eradicate student cheating, and yet, misconduct persists.

And that takes us to our final arrow, on the bottom left. Once an institution has installed these detection technologies, our students respond accordingly. Our students are smart. They find workarounds and hacks to the anti-cheating technology and then they share their hacks in online discussion forums, chat rooms, and social media platforms, so other students can also hack the system.

We saw this same cycle repeat during the COVID-19 pandemic with the rapid rise of online proctoring technologies and we are seeing it again today with GenAI. We can count on the intelligence and ingenuity of our students to find workarounds to technologies designed to heighten surveillance and perpetuate behaviour compliance as a desired outcome of education. This is not to say that we want to enable anarchy. On the contrary, instead now is the time to engage students as partners in education and in academic integrity. When students revolt against educational systems and tactics, it is because those systems are not meeting their needs. First and foremost, we must focus on students and their learning.

The academic integrity arms race represents an endless and self-defeating cycle in which students continue to be vilified and anti-cheating technology poses as a hero, but its promises of eradicating cheating are never fulfilled. In an academic integrity arms race, the only winners are corporations who fill their coffers by selling empty promises about wiping out misconduct. The promise of academic cheating detection software will always fail because misconduct is not a technological problem, it is a human one.

Detection disrupted

The teacher as a hero figure who watches for the cheating student has been shattered by generative artificial intelligence (GenAI) and large language models (LLMs) like ChatGPT.

Study after study show that (1) so-called AI-text detection tools do not work (e.g., Gegg-Harrison & Quarterman 2024; Perkins et al. 2024; Sadasivan et al. 2023; Weber-Wulff, 2023), and (2) humans are lousy at detecting text written or assisted by GenAI apps such as ChatGPT. We did our own research here at the University of Calgary that showed human detection of AI-generated text was unreliable at best.

Our transdisciplinary research team that included Dr. Robert (Bob) Brennan, Dr. Jason Wiens, Dr. Brenda McDermott, with support from Dr. Rahul Kumar at Brock University and a crew of great research assistants, conducted a mixed methods study to ascertain how well people could distinguish between text written by AI and text written by a human.

We designed a mixed methods study in which we provided participants with text written by humans, text written by AI, and text lifted from the Internet. We had over 400 participants ($N=423$) in our study and they were able to correctly identify when a text was written by an AI app 36.23% of the time. Participants were able to correctly identify text written by a human 45.29% of the time. Overall, participants' ability to correctly

identify AI-generated text was significantly lower than what would be expected by random chance (50%). To put it simply, participants were correct less than half the time when trying to guess whether a text was generated by AI or written by a human, meaning that their performance was worse than a coin toss in this task.

The teacher as the great detector of cheating, whether they rely on their own acumen or they weaponize technology to catch students, is simply no longer viable. This presents a great conundrum because it disrupts a centuries-old narrative about the teacher as a hero who detects plagiarism and sets an errant student on the right path. So, what do we do?

Part V: a new narrative: postplagiarism

We create a new narrative, one in which the students, not the teachers, are the heroes of the story. This storyline already exists in some of the epic tales of our time. Obi-Wan Kenobi trains Luke Skywalker to be a great Jedi warrior. Dumbledore guides Harry Potter and all the students at Hogwarts to be the best wizards they can be. In these stories, the teacher may be heroic, but their main purpose is to serve in a supporting role to prepare their young protégés for an epic future in which adversity is assured and only the details are uncertain.

These examples are fictional stories. Our quest now is to help real classroom teachers and professors let go of a need to be heroes who either hunt down cheaters or resist the establishment by defying the rules that oblige them to report alleged cheating. We actually need to rewrite the story about what it means to learn ethically in an age when we, as individual actors, have little control about the ways in which technology is shaping our society. What we can control is how well we teach our students to be stewards of their own future.

Some of you will know that since about 2020 I have been working on new conceptualizations about plagiarism and academic integrity, thinking about life in a post-plagiarism world (Fig. 3).

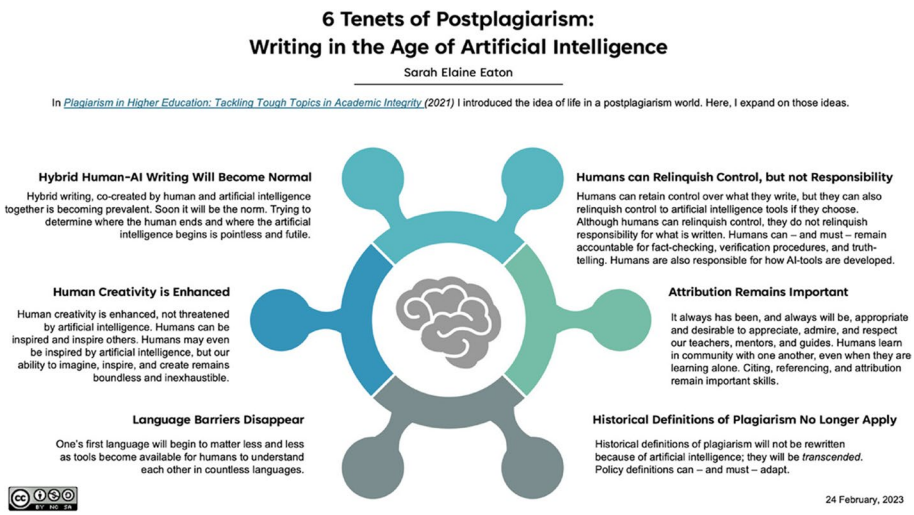

Fig. 3 Postplagiarism Infographic

Six tenets of Postplagiarism

Postplagiarism (Eaton 2021, 2023) is based on six basic tenets:

1. Collaboration with technology, and specifically hybrid writing that is created in part by AI and in part by humans, will become the norm.
2. Humans' ability to be creative and inspire others is not threatened by AI, but rather that new forms of art and creative works can emerge with technological advances.
3. AI can help us overcome language barriers that have previously prevented us from communicating effectively with others when we do not speak a common language.
4. We can outsource or offload our work to AI, but we do not outsource responsibility. In other words, humans remain accountable for the work that we produce. This includes students who submit work for assessment. As educators we assume that when we grade an assignment, we are assessing a student's learning. If the work has been outsourced, either to another human through contract cheating, or to an AI, we are assessing an artefact that does not represent a person's learning journey.
5. The fifth tenet is that attribution remains important. Knowing who we learned from and how we know what we know is a timeless way of honouring those who came before us. Attribution, as a generalized act of paying respect to our teachers and those who we have learned from is more important than the technical minutiae of citing and referencing.
6. Finally, our longstanding ideas about plagiarism need new definitions. Actually, there has never been a universally-accepted definition of plagiarism. Scholars have debated its definition and policies differ from one university or one college to the next. Concepts of plagiarism have always been culturally and contextually bound.

Postplagiarism is a conceptual framework that is guiding my research. At its core, postplagiarism is about creating a new story, one which is focused on a future where artificial intelligence and other advanced technologies are an integral part of our everyday lives. AI is a complex technology that is simultaneously good and bad and our great human quest is to navigate a world where everything is complicated all the time.

How students are using GenAI

My colleague, Soroush Sabbaghan invited me to be part of a study with him in which we looked at academic integrity, authorship and agency among graduate students with regards to the use of GenAI apps (Sabbaghan & Eaton 2025). We asked, "How do graduate students perceive the impact of using a GenAI-powered research application on intellectual and scholarly ethics?" Participants in this qualitative study included ten (10) graduate students. The findings showed that graduate students wanted to use GenAI ethically and uphold academic integrity, and they also wanted agency in terms of how they interacted with the apps, noting that using GenAI tools helped them to combine their own expertise and judgement with AI's suggestions to create a truly novel and original output.

These findings align with the six tenets of postplagiarism. What these technologies all have in common is that students can – and do – use them without supervision. They know how to use them and may or may not need a teacher to guide them. The more a

student can use a technology autonomously and without oversight, the more vilified the technology can become.

The very existence of these technologies and their presence in the classroom challenges an age-old approach to behaviour control and rule compliance as foundations of education. We have long conflated student obedience with student success. We tell ourselves a story that students who follow the rules are good and those who do not are bad; or conversely, a student who does not follow the rules is a rebel, a punk, a delinquent…a villain who must be punished.

It is safe to say that we have reached a point in our technological history where we can no longer control student (or teachers') use of GenAI, but that does not mean that we have lost our integrity.

Part VI: students' voices: listening to the leaders of tomorrow

Preparing students for their future

When Professor Phillip Dawson from Deakin University's Centre for Research in Assessment and Digital Learning (CRADLE) visited our campus in 2023, he said something profound, "We need to prepare students for their future, not our past" (Dawson 2023). This call to keep the future of technology and students' learning top of mind echoes throughout Dawson's work (Dawson 2021; Dawson & Bearman 2020). This call to action has stuck with me and helped to shape my thinking in recent years.

What will education look like in the future?

Think about this for a moment: Children born in 2019 or later will never know school without artificial intelligence. Assuming a typical trajectory through primary and secondary school, children who started school in 2023 could graduate from high school in 2035. What will their lives be like? What skills and competencies will they need to have? And how do we help them prepare for their future?

To answer that question, I asked some students and recent graduates: How can we prepare the students of 2025 for success in 2035?

I was interested to know what the next generation of educators and leaders imagine as a possible future for education I share the perspectives of six current students first, followed by four past students whom I have supervised, either as an academic advisor, as an employer, or both.

Perspectives of current students

Gengyan Tang, a first-year international PhD student from China, shared this:

> *"The innovation of media extends human perception and drives educational transformation, from books expanding vision to the internet enhancing memory. In the future, AI and brain-computer interfaces will augment cognitive abilities, allowing students to focus on deep understanding and creative thinking.*
>
> *By 2035, education will shift to an era of human-machine integration, where AI and teachers collaborate as equals. Teachers who fail to foster creativity and critical thinking will be replaced, as interactive AI-teacher partnerships become the new standard." (G. Tang, personal communication, November 24, 2024).*

Debbie McKibbin, a first-year EdD student, who is also a deputy superintendent in a school district in Alberta, Canada, shared this:

> *"Educational institutions are tasked with preparing students now and in the future. CRPS frames it as "Future Ready". The competencies, as outlined by Alberta Education, will continue to be essential. It is becoming increasingly imperative that education offers meaningful learning tasks that intellectually engage students and deepen conceptual understanding.*
>
> *I see two possible paths as we head towards 2035. One where individualized programming fosters inclusion, differentiation and critical thinking. Alternately, I worry about public education being undermined as an unintentional consequence of 'choice.' Alternative schools that receive government funding, are also permitted to collect tuition and exclude students who don't meet their criteria. Therefore, students who don't make the cut may only access public education. Those with means will increasingly select options that are not a true representation of our communities. (even the local separate school turns away students saying they cannot meet their needs).*
>
> *Educational institutions need to further develop differentiated programming to meet the diverse learning needs of students. AI can help us with this task. I believe there is a potential synergistic effect when educators leverage AI. It is a tool educators need to harness - to support learning tasks design and to help students use it ethically and responsibly." (D. McKibbin, personal communication, December 16, 2024)*

Bibek Dahal, a third-year PhD student, whose research interests focus on research and academic integrity shared this:

> *"If there will be anything that will be severely impacted by advanced technology including artificial intelligence and commercial neurotechnology, it will be education and research. Many technological devices we currently use for educational and research purposes will become outdated by 2035. This includes the end of big-screen devices like computers and laptops, as portable devices with perfect language translation abilities will be available. These future devices in education will be capable of typing, recalling, and interpreting thoughts directly, eliminating the need for traditional input methods. Most importantly, the term 'academic integrity' may change over time and people focus on different issues, but its core remains crucial in protecting human rights, knowledge traditions, dignity, and self-determination in education." (B. Dahal, personal communication, December 2, 2024)*

Faisa Farah, an EdD student who is also a qualified nurse and an associate professor of nursing education in Qatar, shared this:

> *"I believe education in 2035 will look like the following:*
>
> The neoliberal education system will make educators have more students as AI technology will be used to take care of tasks like grading, lesson planning, etc.

Students will have access to more AI tools with evidenced-based content. Using AI in education won't be a taboo."

EdD student, Colleen Fleming, who works in a K-12 school in Calgary said:

"Here are some of my thoughts in no particular order:

- AI will play an increasing role in all levels of education, with new technologies constantly emerging. However, I anticipate continued inequitable access to these technologies, unless one has the means.
- I expect that we will see greater diversity in instructional delivery, with more hybrid and exclusively online learning environments. There will likely be equity issues related to the accessibility of these different educational forums as well.
- In K-12 education, I anticipate increased interdisciplinarity of subjects taught, with more project-based learning from a UDL lens.
- I think we will also see increased accessibility for those learners on the neurodiversity spectrum in the private school sector, but I'm not overly optimistic about how that will play out in public schools.
- K-12 education will likely see more of a focus on real-world, practical applications and the development of core competencies such as cooperation, collaboration, critical thinking, executive functioning skills, etc.
- My hope is that we will continue to see more equitable assessment practices in all levels of education as well." (C. Fleming, personal communication, December 9, 2024)

Kristal Turner, a PhD student and previous research assistant, offered these thoughts:

"I must admit that given the current circumstances, I'm a little down with how education will look in the near future. I think we are in for a few rough years of underfunding and heavy-handed institutional involvement that only serves to promote neo-liberal values. Those who hold the power to make changes aren't listening to those who are voicing their concerns about the education they've experienced, and the education they need to be successful in the world. I hope by 2035 that the darker times will be over and that education will again be valued for the good it does for our society. I hope to see a space where higher administration, faculty, support staff, and students work together and create an environment that is welcoming for all of us." (K. Turner, personal communication, November 27, 2024)

Helen Pethrick, a Master of Arts in Adult Learning graduate and previous research assistant who went on to medical school, shared this:

"From my perspective, there's a few imperatives for the next decade of education. The solution is not to learn/memorize more but to develop the critical thinking skills and resourcefulness to know where to look for information. Another essential skill is knowing the limits of one's own personal knowledge inventory so that we know when to look for more information. To me, this is an exciting prospect because it requires a higher order of thinking, relying on creativity, synthesis, and evaluation. Tools like

simple apps or even AI charting programs, if used with those skills, leave more brain space for the important (and dare I say fun) stuff" (H. Pethrick, personal communication, November 27, 2024).

Perspectives from past students

Next, I share ideas from four recent alumni, all of whom I had the pleasure of supervising during their doctoral programs at the University of Calgary.

Beatriz Moya (PhD, 2025) shared this:

"In the future, two of the primary purposes of education may be to prepare citizens to effectively navigate social and environmental challenges derived from complex issues (i.e., political polarization and global warming) and to thrive in a world with potentially decreasing resource access.

Universities and schools, in such a context, may seek to become spaces for generating the conditions for more sustainable and livable futures.

In these educational spaces, the production of reliable, plurivocal, nuanced, situated knowledge supported by the use of increasingly more sophisticated technologies will make a difference to effectively re-imagine the human experience, which will not be limited to the planet we now inhabit but will extend to some other places in the universe.

The lingering question of human existence will only remain alive as long as we find creative ways to ensure our legacies through education.

From a pragmatic perspective, I imagine classrooms with students with wearable technology working individually or interacting with their peers, educators, and robots equipped with GenAI. These interactions will occur in tangible or virtual learning spaces that allow face-to-face, holographic, or high-quality video and image communications.

I do not see these new possibilities contradicting traditional practices, such as reading printed books or writing documents with pen and paper.

The difference lies in the emergence of multiple choices for learning, which will adapt to different students' needs and the requirements associated with proposed national, local and institutional learning outcomes.

Educators will be challenged to design multilayered educational experiences that emphasize developing genuinely human skills, such as creativity and critical thinking.

This idyllic yet possible view will be inaccessible for many, especially students in the Global South, potentially increasing educational gaps. International, private and public alliances will be pivotal in providing tools to integrate new technologies in these academic spaces and foster capacity-building skills in developing and underdeveloped countries so that their citizens can experience learning in high-tech environments." (B. Moya, personal communication, December 24, 2024).

Angela Judge-Stasiak (EdD, 2024) offered these thoughts:

"The future of education will be focused on developing students' ability to solve complex problems, collaborate across disciplines, and take an ethical approach to

decision-making. Learning will be student-centered, self-directed, and focused on real-world applications. By 2035, education will place a strong emphasis on moral reasoning, collaborative projects, and finding solutions together.
We begin today to prepare for this future by prioritizing values, ethics, and quality supervision and mentorship is crucial for shaping the future of education. These elements will foster a supportive and ethical learning environment, empowering students and staff to thrive and make a positive impact on the world." (A. Judge-Stasiak, personal communication, November 25, 2024)

Brad Colpitts (EdD, 2022), who has taught at universities in Japan for more than a decade, shared this:

"I think with the advent of AI, education will be more adaptive and personalized. Education will shift towards a model where educators leverage AI and other new technologies to offer students a personalized and interactive learning program, in which each student receives a personally tailored experience. This will in turn require educators to teach students how to use these tools ethically and shift how we assess their learning." (B. Colpitts, personal communication, November 24, 2024)

Russell Hazard (EdD, 2021), whose research focused on global citizenship and who has more than a decade of experience living and teaching abroad, offered this:

"I am in agreement with the general OECD 2030 framework as to what competencies we want to be working on for that decade. I believe that in future thinking societies the emphasis will come off remembering, although a certain amount of this will remain necessary for context, and dig more deeply into project-based, design-based, research-based, and problem-based orientations toward education. I state this from experience in the field, based on research and policy papers I read, and also on emergent governing policies such as recent explicitly stated moves by the Chaoyang Beijing government to make a concerted effort to embed PBL all across the public school sector to help support future-ready citizens. In many ways such a change could negate the issue of students getting AI to 'do their work' as in this type of education AI becomes just one more accepted tool in the box to solve well-designed curriculum challenges that anticipate its use.
I also have attended recent EduTech conferences in Asia as well as facilitating trials of AI tutors in my own school and feel confident that individualised AI tutor/teachers will become normalised as the vector for much, if not most, disciplinary content acquisition. This is especially true as emerging AI systems are reportedly able to track biometric data and personalise teaching based on factors such as fluctuating attention as well as student content knowledge responses. Learning with human teachers will likely continue, using their strengths to lead agile project teams for deep disciplinary, interdisciplinary, and "soft skill" acquisition that actualises knowledge, skills, and attitudes into simulations and real world problem projects.
I believe that in some areas this will happen well before 2035, as it certainly appears to be already happening, but if we are talking about the global context these things are likely to take hold at different rates so a decade out is a reasonable timeframe for widespread transformation.

> *My caveat to this is a potential trend in some countries to continue to resist or reverse from previously critical, action-oriented education orientations and purposely refocus on religious, patriotic, or pure content knowledge priorities that eschew critical thinking, science, creative thinking outside delineated boundaries, and a tolerance for nuance or diversity of opinion. Such a trend could also be facilitated by AI." (R. Hazard, personal communication, November 24, 2024)*

In case you are unfamiliar with the OECD's (2019) *Future of Education and Skills 2030: Learning Compass 2030* report, that Russ mentioned, it is worth checking out. One quotation that stood out for me in this report is that "anticipation requires more than just asking questions; it involves projecting the consequences and potential impact of doing one thing over another, or of doing nothing at all" (OECD, 2019, p. 118). In other words, when we engage in future forecasting, it is necessary to also think through various possibilities about the impact and outcomes of our choices.

Reflecting on current and past students' reflections

Three things struck me from these reflections from current and past students. First was the great variety of perspectives. From the local to the global, there was no-one-size-fits all vision of what education could look like in 2035. The second thing that caught my attention was the varying levels of hopefulness about the future. Some are hopeful about the future, whereas others are worried about it. This is worth paying attention to. The reality is that the future is unlikely to be problem-free. If anything, problems facing students, educators, and citizens of the world may be even more complex in the future than they are today. Perhaps that is one reason that a throughline in all the students' and recent graduates' reflections was a consensus that personalized learning, learner agency, and problem-solving skills will be just as important, if not more important, by 2035 than they are today. These next-generation citizens will be navigating and leading changes we have not yet even imagined.

Part VII: emerging threats and more bad buys

So, the big question is: How *do* we prepare our students for the future? No one has a crystal ball and we cannot predict the future, but we can pay attention to signals that can help us prepare for possibilities (Dator 2019; Gorbis 2013; McGonigal 2022).

One organization that educators rely on to help us understand current and future trends in education is UNESCO. Over the past few years, UNESCO has published reports about the ethical and educational implications of rapidly advancing technology, such neurotechnology and brain computer interfaces (BCIs), forecasting that they may bring major ethical challenges for education and for society.

In 2023, *Nature Electronics* declared brain computer interfaces as the technology of the year (Nature Electronics, 2023). How many of us have paying attention to these signals about the future?

What is neurotechnology?

Neurotechnology provides direct access to the neural circuits of the central nervous system, for the purposes of recording neural circuit activity (also called 'reading') or

altering neural activity (also called 'writing'). Neurotechnology has "the potential to register and alter the inner workings of human mentality" (Goering et al. 2021, p. 378). A subset of neurotechnology is brain-computer interfaces (BCIs), which have existed for years for medical purposes (Marsh 2018; Ienca et al. 2018), for example, to help people with Parkinson's disease. Brain computer interfaces can be internal (implanted) or external (wearable) depending on their purpose.

A 2023 UNESCO report, *The Risks and Challenges of Neurotechnologies for Human Rights*, emphasizes that neurotechnology:

> *"has broken into the market leading to an increased availability of direct-to-consumer products that may be used for recreational and mental augmentation purposes. However, the effects of these technologies are still unclear and their unregulated use entail unprecedented risks for human rights related to freedom of thought, mental integrity and to some of its underlying pre-conditions such as dignity, identity or human agency." (p. 3)*

Neurotechnology is evolving from being specialized and medicalized to being commercialized and socialized (Eaton, 2023). Products that were previously only bought and used by hospitals and clinics are now available for sale to the everyday person. For example, there are companies that sell EEG headsets for anyone to experience neurotechnology from the comfort of their own home while sitting at the kitchen table. Sounds exciting, right?

Well, there have been some real ethical questions about these kinds of technologies. I will share two examples, one from Canada and one from China.

Biocybernaut institute study in Canada

From 2014 to 2016, a company called the Biocybernaut Institute conducted a study in Canada using neurotechnology biofeedback headsets designed to test "brainwave training on 12- to 15-year old children" in St. Albert (Leo 2024a, 2024b). According to one news report the company made "a series of claims it said were backed by scientific research. They included:

A 50 per cent increase in creativity.

An 11.7 increase in IQ.

More happiness and joy.

Relief from stress and anxiety.

Healing of traumas." (Leo 2024a, n.p.)

The owner of the company, James Hardt, also claimed that his technology can allow people to levitate and visit angels (Leo 2024a, 2024b.) Children and parents gave their consent to be participants in the study, only to be subjected to "having electrodes glued to their heads while they sat in pitch-black chambers for hours each day" (Leo 2024a).

In case you were not already horrified, let me add that the research participants in this study were all Indigenous students, their parents, and caregivers.

BrainCo research in China

A couple of years later, in 2019, tech start-up BrainCo, which was incubated at Harvard University by Chinese engineer, Han Bicheng, led the development of a a brain-computer

interface (BCI) headband that purportedly helped students focus. In 2019, ten thousand school children in China were part of an experiment in which they wore these headbands. The children's focus and attention levels were monitored throughout the day, allegedly all with parents' consent (Berman 2019; Jing & Soo 2019; Standeart 2019; Ye 2019). According to news reports, these headbands provided personalized reports about each student's attention level throughout the day, allowing both learners and teachers to become more aware of individual levels of focus, as well as collective performance, as teachers could monitor students' brain waves in real time.

In terms of downsides, students reported discomfort wearing the headbands and the devices increased competition among the students and pressure to perform, as teachers involved in the experiment announced the names of "the top three most attentive students at the end of each class" (Berman 2019, n.p.) There were also concerns about privacy and surveillance.

Parents were sent a report each day about how well their children focused in school, which according to some news reports, resulted in some parents punishing their children if the reports showed that the children paid insufficient attention in class (Wall Street Journal, 2019). So, we can see there are some ethical complexities with technologies such as brain-computer interfaces (BCIs), especially in educational settings.

These are examples of wearable brain computer interfaces, but what about the kind that are surgically implanted? One example is Elon Musk's Neuralink, which is described as, *"fully implantable, cosmetically invisible, and designed to let you control a computer or mobile device anywhere you go."* (Neuralink, 2023, emphasis added). Neuralink has now implanted devices into multiple patients in the US and clinical trials are being planned for Canada and the UK (see Musk, 2024).

We can say with a reasonable level of certainty that neurotechnology devices, whether they are wearable or implanted, are likely to amplify the ethical complexities of artificial intelligence in the years to come. How do we prepare for this?

Part VIII: A BEACON of hope

BEACON Project

To help us understand this next wave of technology and its ethical implications, we have launched our own study at the University of Calgary (Eaton et al. 2025). Let me preface this by saying that our study has undergone ethical scrutiny and been approved by the university's Conjoint Faculties Research Ethics Board (CFREB) (REB24-1954).

Because we are already aware of some previous research using similar technology that has been ethically questionable, we are being extra cautious with our study. We are not collecting any brainwave data. Instead, we are interviewing our participants about their experience while they have an opportunity to try the technology for themselves in a supervised environment here at the University of Calgary.

We are calling it the BEACON (Bridging Ethics, Artificial Intelligence and Cognitive Neurotechnology) project. Our team includes include Soroush Sabbaghan (co-investigator), Gabrielle Wilcox (co-investigator), Leeanne Morrow (co-investigator), and Brenda McDermott (co-investigator).

Project Goal

The primary goal of our research is to understand commercially available neurotechnology and its ethical implications for mental health, privacy, agency, identity, human dignity, and equality.

We will invite our research participants to try a commercially-available EEG headset. We will ask participants their opinions about how this type of technology might impact education and what the ethical implications of using neurotechnology and brain-computer interfaces in education might be. For our study, we have chosen the EMOTIV EPOC X—14 Channel Wireless EEG Headset. We will not be storing any EEG data, but instead we will be interviewing participants as they go through the experience of trying out the headset for themselves (Fig. 4).

One reason we want to study this emerging technology is to prepare our students, as well as teachers, parents, and members of the public, for a future in which commercially available neurotechnology is readily available to anyone. We want to explore and understand the good, the bad, and the complex so we can make recommendations for policy and practice that prioritize human dignity, agency, and even a new kind of human rights called neurorights (Goering, 2021; UNESCO 2021, 2023).

We want to foreground neuroethics and neurorights so that we can make wise and informed decisions about what is and is not ethical when it comes to the next wave of technology.

Part IX: time for a new story

Tomorrow's Heroes

As I draw this lecture to a close, I conclude with a call to action. I invite you to join me in crafting a new story about what it means to learn and live with integrity. The heroes of the story are today's young people who can—and must—shape the future so that it is just, fair, and ethical. Students of today are the ethical champions of tomorrow. For students to be the heroes of our story, they need to be armed with the best and most-up-to-date information and the skills to use that information wisely. The heroes of our story need to be equipped to resist and respond to unethical or even inhumane uses of

Fig. 4 EMOTIV EPOC X - 14 Channel Wireless EEG Headset

technologies that may not yet exist. Today's young people can be the ones to overthrow outdated colonial approaches to education and misconduct that perpetuate command-and-control rule compliance. Our stewards of the future can scoff at oversimplified binary narratives about good guys and bad guy, as they navigate a world where everything is complicated all the time and wicked problems are par for the course.

Conclusion

Biases and stereotypes about good guys and bad guys are deeply embedded into our psyche and our society, including in our educational settings. Punitive approaches to addressing misconduct persist because they are comparatively cheap and less labour-intensive in the short term. Educative and restorative approaches to misconduct require a more long-term commitment to student success, dignity, and human rights.

Neither teachers nor technology should be heroes or villains in the stories we tell about education. Instead, teachers and technology can work together to guide students, carefully, and ethically towards a future that is undoubtedly going to be even more complex than it is today. This is not to say that we no longer hold students accountable for their behaviour. Taking responsibility is one of the key tenets of postplagiarism. Wicked problems require the kind of collective wisdom that cannot be embodied by any solitary character working in isolation. Students still need great teachers who can help them to bring their best selves to the classroom, the workplace, and the world. Our students have an epic future ahead of them, filled with challenges we have not—and cannot—fully grasp yet. Our job as educators is to guide our students as they grow and learn.

We must allow them to fail, then pick themselves up, and move forward with courage, vulnerability, strength, knowledge, and hope. The future belongs to the youth. Let's ensure they are ready for it.

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This is a sole-authored article. As such, I am 100% responsible for the content herein, including any errors or omissions.

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Competing interests

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