Pre-Service Teacher Education in a Postplagiarism World: Incorporating GenAI Into Teacher Training

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Abstract

This essay explores the integration of generative artificial intelligence (GenAI) into pre-service teacher education amidst contemporary debates on technology in education. It highlights the cautious stance taken by educational authorities, such as the Alberta Teachers' Association, which advises against involving students directly with AI tools. The discussion contrasts this cautionary position with global trends, noting advanced AI curricula in countries like China and Japan. Emphasizing the necessity for hands-on GenAI training for pre-service teachers, the essay advocates equipping future educators with the skills and knowledge to effectively incorporate AI into their practice. It calls for engaging students as partners in learning and rethinking traditional notions of plagiarism in a postplagiarism world where AI co-creation becomes common.

Keywords: Pre-service teacher education, postplagiarism, generative artificial intelligence (GenAI), AI literacy, educational technology integration

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In late 2023, I was chatting with a long-time colleague about the reactions of fellow educators and academics to generative artificial intelligence (GenAI). We joked with each other, saying, "Remember when people asked us back in the early 1990s if they could turn off the internet?" Back then, with puzzled looks on our faces, we replied, "No, you can't just turn off the internet." Here we are, 30 years later, with some colleagues saying we should ban artificial intelligence (AI) or somehow pretend it does not exist. We have no empirical evidence, but our observations gathered over three decades of working in higher education have shown us that when new technologies are introduced, one reaction is an immediate desire to suppress their use by those less comfortable with the technology.

An (Over)Abundance of Caution

In January 2024, the Alberta Teachers' Association (ATA) guided elementary and secondary (i.e., K–12) classroom teachers to refrain from using AI tools with students with these cautionary words:

> For the moment, we are encouraging teachers to explore these tools for their own pedagogical and educational purposes, and not to involve students directly in using them. It is prudent to wait until your school jurisdiction has established some student policy and practice guidelines around the use of AI before you start engaging your students in the use of these new tools. (Theobald, 2024, para. 6)

What struck me about this guidance was the notion of not involving students directly, as if somehow students had no agency or curiosity of their own. There seems to be an underlying assumption with this guidance that if we hold off for a while, until ministries of education or school boards come up with official policies, students will dutifully wait on the sidelines and not touch the new technology until their teachers incorporate it into lessons in a manner that is both sanctioned and supported by the bureaucratic systems that govern education.

According to one survey conducted in December 2023, less than a third (29.4%) of Alberta's K–12 teachers feel positively about AI, and just over a third (37.2%) feel negatively about it, with another 14.5% feeling neither positive nor negative (McRae, 2024). In the absence of explicit guidance and professional development, teachers' ambivalence towards rapidly developing technology, combined with the ATA's conservative stance towards the classroom implementation or integration of GenAI for learning, means that Alberta students have missed out on an entire academic year's worth of opportunity to learn how to use this new technology and develop both awareness and competency.

Paying Attention to What Is Happening Globally

The Wall Street Journal (2019) reported that more than 10,000 schoolchildren in China were using AI as of 2019 and reported specifically on the use of headsets used to monitor students'

learning and levels of attention in classes. That's half a decade of a head start that China had on some other countries in terms of introducing AI into K–12 classrooms. Think about that for a moment. Imagine the AI literacy levels of K–12 students who have had half a decade of experiential learning with AI by 2024. Imagine their levels of competence, confidence, and overall knowledge of AI apps and how to use them. Nothing like that has happened at any scale in North America.

In 2022, UNESCO released a report showing the results of a survey of its 193 member states, asking participants to provide details about AI curricula for students in K–12 general education. Representatives from 20 countries reported that they "were aware of at least one AI curriculum that was developed and endorsed by government or is underdevelopment" (UNESCO, 2022, p. 18). Twenty countries as of 2022—that's all!

A year later, in Japan, K–12 students across that entire country began to learn about AI starting in June 2023 (Kyodo News, 2023). In other words, in some countries that could be considered tech-forward, children are being taught how to use AI from a young age.

Although in Alberta teachers may be guided "not to involve" students in the use of AI, the rest of the world continues to advance and prepare young people for a future when AI is omnipresent. As Phillip Dawson (2023) has said, our job as educators is "to prepare students for their future and not our past" (31:16). It is both futile and irresponsible to take a wait-and-see approach when it comes to AI. K–12 students must have an opportunity to build their skills, knowledge, and competence, or they may be left behind global peers elsewhere.

Training Teachers to Ensure Our Students Are Successful

In order for K–12 students to learn in a guided and mindful way, in-service and pre-service teachers need training and professional development so they are prepared to integrate AI use into their professional practice in an informed manner.

Pre-service teacher education programs across Canada (and any other country that is not already integrating GenAI into its programs) must prioritize the use of AI in classes so that by the time new teachers graduate, they are ready to step into a K–12 classroom with the skills and tools they need to be successful in their chosen profession. We need graduates of teacher education programs to be workforce-ready by the time they take up their first jobs in the profession. For that to happen, pre-service teachers need hands-on and practical education about what GenAI is and how to use it safely and productively with children across the curriculum.

In order for pre-service teachers to be educated, their professors need to be up to speed so they can effectively incorporate learning about GenAI into teacher training curricula. In other

words, professors of education also need hands-on and practical professional learning so they can effectively train the next generation of educators.

Engaging Students as Partners in a Postplagiarism World

The notion of engaging students-as-partners is not new (Healy et al., 2016), and scholars and educators have long called for including students as partners in academic integrity work (e.g., Bretag, 2019; Bretag & Mahmud, 2016; Lancaster, 2022). There are multiple ways of including students, from sharing information with them to consulting during the decision-making process to having students design and lead initiatives on topics that matter to them (Student Voice Australia, n.d.).

In these first few years of GenAI being introduced into teaching, learning, and assessment, it seems that there has been more of a focus on educators and policymakers trying to figure out what to do and less of a focus on including students in meaningful ways. There is much opportunity to engage students as partners, including student teachers, and especially in ways that involve them in designing and leading initiatives that matter to them.

After all, it is the students of today who will be the adults and professionals of tomorrow who will continue to be impacted by advanced technology. When I say "advanced technology," I am not only speaking about the GenAI impacting us today, but also emerging tech such as commercially available neurotechnology and brain computer interfaces (BCIs) that has yet to make its way into educational spaces (see Eaton, 2023; UNESCO et al., 2023).

As I have written about elsewhere (Eaton, 2023), our historical notions of plagiarism and academic misconduct may require reconceptualization in an era where the use of GenAI is becoming more common. I have suggested that we may be entering a postplagiarism era in which co-creation with AI becomes common (Eaton, 2023). In some senses, it seems that GenAI could soon be considered a partner in education, but here I offer some caution. Although this idea holds some promise, there is still work to be done to engage other humans—and specifically students—as partners in learning. Developing student agency and autonomy in learning will become even more important as GenAI use becomes more embedded into our everyday lives.

Conclusions and Call to Action

I conclude this short essay with a call to action: Train the student teachers of today to be successful mentors and role models for the students of tomorrow. This involves not only equipping pre-service teachers with pedagogical and technological knowledge but also ensuring that ethics and engagement are key components of professional practice.

We may not have all the answers about how to go about this, but starting with the clear goal of preparing today's professionals for tomorrow's reality can help inform our decisions about how to update our teacher training curricula and design meaningful learning experiences for pre-service teachers.

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