Ed-Tech Integration in Teacher Education: A Call for Critical Inquiry

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In the same way that engineers justify their designs based on performance results and scientists make claims based on evidence, teachers must make choices about integrating educational technologies (ed-tech). In a data-rich and tech-driven world, it is imperative that young learners are technologically literate. It's not as much of a question of *whether* teachers should integrate ed-tech, but rather *how*, *why*, and *to what end*. As teacher educators, we must facilitate preservice teachers' (PSTs') critical inquiry into the complexities of ed-tech integration, as well as engage in it ourselves.

As the current instructor of a critical media literacy course for elementary PSTs, like many teacher educators and scholars (e.g., Morel & Spector, 2023), I grapple with what it means to "authentically integrate" ed-tech into my own practice. Why and when should we use it, and at what benefits and costs to PSTs' development are we doing so? While ed-tech offers clear advantages and opportunities for innovation, how inclusive are these advancements, and for whom are we integrating them? For that matter, how does our integration (or lack thereof) of ed-tech impact not just our classrooms but teacher education as a whole?

Rather than simply acceptors and users of ed-tech, PSTs must be positioned as ed-tech *decision-makers* and *evaluators* in their future classrooms (Krutka et al., 2023). For teacher educators, this means not only facilitating PSTs' technological literacy in relevant ways but also encouraging their critical thinking about underlying value-laden and ethical dilemmas that may arise through its classroom usage. While perhaps not an ethical concern, ed-tech can alter the classroom environment in undesirable ways (e.g., detract from student interactions). There are benefits and drawbacks that may not be distributed evenly among stakeholders. As such, while helping PSTs recognize the research-based benefits of ed-tech, we must also support their acknowledgment of the resulting disparities it may create toward increasing digital equity (Schmidt-Crawford et al., 2023). As insightfully addressed by Goodman et al. (2024), there are inherent promises *and* pitfalls to using ed-tech. Weighing these costs and benefits simultaneously regarding teaching, learning, and equity should lead to a considered and realistic acceptance of ed-tech in our classrooms.

As we know, the pandemic exacerbated a persistent and widespread digital divide and exposed a suite of technical difficulties with moving to emergency remote learning. More recently, the increased use and ubiquity of generative artificial intelligence has raised alarm bells, not only in educational contexts but across *all* sectors of life. Yet, by introducing new constraints to communication and teaching, these happenings also provided novel diving-off points for classroom innovation. In the same way that we might feel fatigued just by hearing

the word “zoom,” the improvement of video conferencing software has majorly streamlined our capacities for local and global connectivity. As ChatGPT offers quick answers and potential avenues for academic dishonesty, it also offers powerful new alternatives to viral pay-per-teaching platforms offering questionable interdisciplinary science lessons (Pleasants, 2024). These possible use cases and others ought to be explored and interrogated.

Moving beyond simply accepting ed-tech to considering its unintended outcomes can define guideposts for ingenuity in teacher education. By surveying ed-tech possibilities in tandem with their drawbacks, we can plot a more impactful and detailed course forward. A critical examination should not lead to deserting technologies but rather approaching them in ways that maximize classroom benefits and minimize undesirable changes. By reflecting on our own integration of ed-tech, we can then equip the future teaching workforce to nurture this viewpoint in their own learners.

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