Provocations of Technology and Pedagogical Imagination: Automation, Chatbots, and the Philosophy of Education

Martin Laba

Simon Fraser University, Canada

Abstract

The advance of technology has always been a provocation for profound social transformation. The history of the digital turn in media and communication for example, ushered in an epoch of radical social change, and especially so in education. Indeed, technological elaborations have challenged and continue to test the foundations of educational philosophies and practices. The digital turn in culture and communication introduced and has sustained debates around the affordances of technology and the urgencies and directions of educational futures. As technological advance continually disrupts and contests established norms and practices of education, how do we reinvent our pedagogies? When such advance introduces new and expansive technical capacities in educational contexts and offers greater levels of autonomy and agency for students, how do educators respond with creativity and imagination to adapt to and revise the very concepts of teaching and learning? In more specific terms, with OpenAI's introduction and development of ChatGPT, do educators focus on how to "neutralize" the technology to mitigate a postulated unrestrained increase in academic dishonesty; or rather do educators focus on and reimagine pedagogical design and practice, philosophy and strategy, to reconceptualize course design, assessment measures and methods, elaborate experiential learning, understand learning spaces well beyond the classroom and the institution, and more. Pronouncements on the impacts of open access AI in education extend the range from declarations that the college essay is "dead", to invocations of long-established critical analyses and artistic representations of technology's displacement of humans by machines as the distinctions between carbon and silicon intelligences become increasingly ambiguous, to rather more hopeful perspectives on the enabling possibilities of AI to expand, elaborate, and enrich teaching and learning. This paper offers a critical encounter with the ongoing provocations of automation in education and with the need for pedagogical imagination and practices that anticipate the substance, scope, and velocity of technological change in education.

Keywords: *technology, pedagogical creativity, ChatGPT, automation*

Disruption

Technological advance has always been a critical disruptor in education and educational technologies have been contested for centuries. Critics have argued divergent perspectives on the determining nature and power of technology versus the social construction of technology, or technological determinism versus technological impact determined in the use of technology. One perspective proceeds from a view of technology as a dominant power of social, economic and political determination, and the other understands technology as rather open and malleable, and ultimately as an enabling tool or affordance of use. Technological determinism suggests that technological development and design not only drive but also fix the avenues of individual and societal application and accommodation. Arguments to the contrary deny such rigidly determined outcomes, a "single destiny" in Andrew Feenberg's terms, (Feenberg, 2001)[1] and instead find agency in choice, deep engagement, interpretation, and use in our relationship with technology, especially in the educational realm.

Plato's oft cited denunciation of the technology of writing as pre-empting the dialogic nature of teaching and learning began a centuries old preoccupation with the technologizing or mechanizing of education. Plato posited through Socrates in *Phaedrus* (Plato, 2005)[2] that the written word was static, immutable, silent, incapable of autonomous intelligence and a hindrance to the dialogic foundations of teaching and learning. (Feenberg, 2001) Plato's vigorous condemnation of educational technology is as Feenberg

argued, “deeply flawed”, blind to the possibilities that writing can instigate and sustain dialogue between teacher and student. Of course, and in real world contemporary terms, technologies of automation that obstruct or shut down open dialogue, foreclose intellectual exchange, or privilege one dominant point of view in the interests of a political ideology or neoliberal projects of educational cost-cutting efficiencies, are thoroughly undemocratic.

Plato’s recognition of the dialogic imperative of education and concerns with the integrity of education under the influence of technology, specifically writing, are resonant in contemporary anxieties and critical concerns around comprehensive automation in education, and AI especially. Technology remains a provocation for social change in the broadest view, and it resides in the centre of educational transformations including how we understand and assert our pedagogical values and practices.

A Statement on Educational Philosophy

There is a sidebar commentary necessary here to identify the considerable merits of the approaches of educational philosophy and the politics of education. It is never adequate to simply investigate how technology works because how technology works is deeply embedded in broader political dimensions of education in society. There are two major points of consideration in terms of our approach to and analysis of emergent educational technologies, and especially AI. First, a philosophy of education is foundational to all studies in education and the role and politics of education in society constitute the framework within which studies in education and technology have actual consequence in terms of issues ranging from pedagogical practice to administrative governance. Second, there is no single methodological authority in academic inquiry in education, no single method that has an exclusive franchise on education scholarship, no immutable standard to which all studies in education must comply. We require a wide-ranging and multidisciplinary discourse to grasp and forge educational futures, and particularly in terms of the quality, the magnitude and the velocity of technological change. Studies in education overall, should be expansive, inclusive, and unbiased, and as much about ideas and philosophy as about empirical data method and analysis. Clearly some of the most significant, prescient, and influential work in the innovation and advancement of education have been in the areas of philosophy, applied philosophy and politics of education, and such works have been provocative, epochal, and discipline-transforming. This is not a critique of empiricism but rather an inoculation against constrained views of education inquiry that privilege only empirical method and foreclose on some of the most substantive and consequential thought on education and pedagogy across centuries.

Techno-Anxiety and Techno-Optimism—Experiences from the Digital Turn

It is important to situate the current concerns over AI technologies in the educational context in the broader and rather recent history of the digital turn in education. I have argued elsewhere that this digital turn in technology and education disrupted pedagogical norms and practices as well as the assumptions, substance, and direction of curricular design and administrative policy, to the extent that the very purpose and future direction of the university became the subject of debate. (Laba, 2015; 2018)[3] There were major concerns over what educators and educational administrators often regarded as the promiscuous use of digital devices in the classroom by students, a vision of a technological free-for-all among students who were far more inclined to attend to their digital device distractions than to the lesson content. These were students for whom the medieval-based and authoritarian model of unidirectional lecture delivery and the transactional relationship with assessment became less relevant and certainly less productive in terms of the quality of and knowledge gained in their educational experiences. Technological advance outpaced pedagogical change and innovation, as usual. Professors were often inclined to issue technology prohibitions in classrooms, a deeply out-of-touch response to the comprehensive and forceful social and cultural transformations instigated and sustained by technological advance.

The introduction and influence of educational technology has also been the subject of techno-utopian discourses. Educational reform was envisioned in the late 1990s in terms of then new developments in virtualized education. Indeed, this was an almost evangelical faith in technology and an advocacy for universities around the globe to capture the entrepreneurial competitive edge in expanding and dynamic information/knowledge economies. Online education and concepts such as “telelearning” were seen by proponents as ameliorative, future-facing strategies that embraced the limitless potential of virtual

teaching, learning, curriculum design, and administration—an integration of education and industry that spared educational institutions from the burdens of budgetary constraint, oversubscribed courses, crowded classrooms as they met neoliberal managerial demands for accountability and cost-effectiveness. Opposing perspectives offered compelling critiques of digitization and corporatization of the university; in particular, how education was becoming both automated and commodified with educational technology leading the way for strategies of teaching-at-scale and other cost-cutting measures.

The pandemic of course, issued its own technological contestations. Technology wasn't so much a solution than a necessity and courses that were designed for conventional face-to-face delivery were often awkwardly retrofitted for remote delivery under circumstances of pandemic-driven duress and emergency.

AI and Its Discontents

The accelerated progress of Open AI's ChatGPT has introduced substantial anxiety among educators, curriculum developers, academic administrators, and governments setting education policy around AI advances, applications, and both educational and societal implications. Such anxiety is not new, and indeed, the ascendancy and imagined supremacy of artificial intelligence has been resonant in the popular imagination—robots with agency in popular fiction and literature. AI is met with both fear and excitement, panic and optimism, and new and emerging AI-powered chatbots in educational contexts demonstrate both responses.

Stephen Marche argues that the transformation of academia and its centuries-old conventions in the wake of AI is profound and irrefutable. He notes that the undergraduate essay, "the center of humanistic pedagogy for generations" is fundamentally disrupted with the introduction of ChatGPT. (March, 2022)[4] If humanities traditions of academic assessment "judge their undergraduate students on the basis of their essays" and award Ph.D.s on the basis of the dissertation, how do we proceed when both can be automated?

Clearly, academic integrity and rigour have been the most prominent themes in critical analyses of ChatGPT and other and emerging AI. The detection of AI-generated writing is a fraught endeavour—from proposed programmed watermarks to approaches to "neutralize" the technology (FCTL, 2023)[5], the adversarial strategy is "an endless game of whack-a-mole", as Kevin Roose has termed it. (Roose, 2023)[6] Proposed measures and institutional policies are often blunt instruments applied across the board to discourage the small minority of students who are inclined to engage in academic dishonesty. Such adversarial approaches have included the hyper-customization of writing assignments, the employment of numerous, and smaller assignments and assessments, increasing the frequency of in-class writing, techniques to become savvy detectors of AI software characteristics and patterns, use the AI platform to answer an assignment thereby creating a model of for comparison to student submissions, employ detection software, and the list continues.

Still, amidst the abundance of adversarial strategies, prohibitions and the blocking of ChatGPT with the rationale of managing concerns on the negative impacts of the technology on standards of academic honesty and accuracy of content—a "cheating tool" as one U.S. public school administrator referred to ChatGPT—are numerous and more measured responses. As with each epochal surge of technological advance in media and communication, imagination, invention, and application are decisive determinants and definers of technological purpose and direction. Key in all educational endeavours under the influence of AI is, as always, literacies—media, information/digital and AI. AI literacy is motivated in the first order, by the broader principles, values, and practices of educating for the sustenance of democracy. As Wong and Kindarji note, LLMs (Large Language Models) and other AI platforms can clearly disrupt legitimate and authoritative sources and information as well as facilitate disinformation and reinforce, even perpetuate spurious sources. (Wong and Kindarji, 2003)[7] In this context, the admonition of Open AI CEO Sam Altman is instructive: "ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness…we have lots of work to do on robustness and truthfulness". (Altman, 2022)[8]

Conclusion

ChatGPT's capacities are enormously promising if applied with pedagogical imagination; that is, when well defined and strategic educational aspirations and applications are asserted: the teaching of ethics and research integrity; a revitalization and elaboration of experiential learning; participatory approaches and the cocreation of knowledge; instruction toward information/digital literacy; the expansion of new and emerging multi-modal representations of knowledge; the critical engagement and assessment of AI itself; the crafting of new and expansive learning environments; the reconceptualization of course design and assessment measures and methods; and more.

The provocations of technology demand not a project in the neutralization of technology, surely a defensive posture arising from a long established, compelling and very human discomfort with the ambiguities between carbon and silicon forms of intelligence. (Kingwell, 2023)[9] Instead, educators might focus on and reimagine pedagogical philosophy, design and practice, understand learning spaces to be well beyond the classroom, invoke the principles of democratic education to support critical independent thinking and instigate social change, to enable students to see their own agency as an educational goal and achievement. AI is not an end, it is a means, and education is a site of constant renewal, particularly in the velocities and complexities of technological change.

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