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What's next for Ed-Tech? Critical hopes and concerns for the 2020s

Introduction

In many ways, the passing of another decade is nothing remarkable. The world does not transform periodically every ten years. Nevertheless, the fact that the 2020s are now upon us provides good reason to reflect on how education (and wider society) is changing. This special issue of *Learning Media & Technology* takes the new decade as a prompt to look forward to the near-future. It asks what issues relating to education, media and technology might be at the forefront of our minds when 2030 comes around? More importantly, it calls us to consider how we should be preparing ourselves in the meantime.

Regardless of what the future holds, we are undeniably in the midst of what is a very distinct (and perhaps even unusual) time. Popularism and political instability is gaining hold in all manner of alarming ways. It is now regularly claimed that globalisation is dead, that we are living in a post-digital age, and that we are on the cusp of an 'industrial revolution 4.0'. Even if we discount these headline claims as hyperbole, it is clear that digital technologies are a significant factor in the ways in which our day-to-day lives are now distinctly different than they were 20 years ago. It makes sense then to expect that digital technologies will continue to be a significant part of how our future is shaped as the nature of the world's economies, politics, cultures, and societies steadily (and often unpredictably) shift.

As major shifts unfold, education the world over faces considerable change, but many of the problems that have long blighted education systems stubbornly persist. Schools around the world continue to face deficiencies in resourcing, significant inequalities of educational opportunity, alongside poor-quality teaching, curriculum and school organisation. These are all issues that pre-date the first 'computers in the classroom' and the subsequent forays into 'digital education'. Indeed, the simple goal of securing access to basic primary education for all children looks unlikely to be realised by 2030 (if ever at all). Such fundamental problems have haunted education for centuries and are likely to remain long beyond 2030 even though many of the ways education is organised may change. All told, these are worryingly familiar *and* unfamiliar times for everyone in education.

Looking to the 'near future'

So how can we orient ourselves toward the technology-related challenges that will face education over the new decade and beyond? This special issue contains a number of papers responding to the provocation of *'Education and technology into the 2020s: speculative futures'*. We have amassed contributions from some of the leading international groups and collectives working on critical studies of educational technology, and the resulting set of papers provides plenty of food for thought. In this introductory piece, we want to do more than provide a perfunctory synopsis of each article. Instead, we have attempted to work up a collective list of important and/or interesting issues that we feel will be shaping educational technology in the 'near future' – that is, in the next five to ten years.

This modest time-frame is deliberate. We could have chosen to speculate on what (post)digital education might be like in 2070, yet this would be of little practical benefit to most readers. Instead,

it is far more useful to imagine the problems and concerns that educators are likely to be grappling with only a few years from now. As with our special issue as a whole, this introductory article starts from the premise that 2020 is an opportune moment to reflect on the potential educational technology challenges of the next 10 years.

With the caveat that as with any look into the future, everything that follows is inevitably subjective, the following six ‘hot takes’ on critical EdTech have been developed in a manner intended to keep our thoughts on-point and of practical benefit. This involves three guiding principles ...

- speculating on the future in *plausible* (rather than fantastical) terms;
- distinguishing between what is *probable*, what is *possible*, and what is *preferable*;
- thinking of ‘*futures*’ plural – that is, being open to the idea of different variations and directions that may well unfold over the next few years.

In this spirit, then, here are six substantial challenges that we expect critical educational technology scholarship to meet as the new decade progresses. In no particular order ...

New forms of digital in/exclusion

Concerns about inequalities in the ways that people use technologies for formal and informal educational purposes are not new. These have endured for decades, moving initially from binary models of ‘use’ and ‘non-use’, to more complex recent models that reflect the interplay of various nuanced factors in understanding who benefits most from using technology. While the technologies are fast-changing and these explanatory models are increasingly sophisticated, the basic message remains the same. Those individuals who are well-resourced and have strong educational backgrounds are likely to benefit the most from digital education.

To date, policy makers have tried to ‘fix’ these problems by focusing on improving technology access in schools and homes, and/or supporting the development of digital skills. These responses are problematic for two fundamental reasons. Firstly, they encourage a focus that problematises individuals and makes them responsible for their position in society, thus ignoring inequalities in wider social structures. Secondly, these responses treat technology as an inherently ‘good thing’ that merely offers educational opportunities, thus ignoring the complex socio-cultural aspects of technology and the strong neo-liberal ideology that drives much of what is developed for education. As the 2020s progress, there is a significant risk of offering more of the same. Initiatives that focus on access and skills are likely to remain an ‘easy’ way for policy makers to signal that they are ‘dealing with’ inequality. Instead, the 2020s need to be a decade when researchers spearhead a change of approach. It is time to better theorise the links between developments in technology, inequality and education, while also striving to actively design technologies that facilitate more equitable futures for all.

Platform economics in an age of artificial intelligence

Similar to questions of digital in/exclusion, the spectre of digital data and datafication has been a prominent feature of education for some time. Nevertheless, the continued adoption of artificial intelligence into mainstream education throughout the 2020s will initiate datafication on an unprecedented scale. All these disparate forms of artificial intelligence (from deep learning to adversarial networks), are undeniably hungry for data. Leading the charge to extract data from educational settings will be digital platform providers for whom ‘user’ data is their most valuable commodity.

As with social media platforms in the 2000s, educational platform providers will be working to expand the scope of their ‘walled gardens’ to encompass as many user practices as possible, leading to *classrooms on platforms* rather than *platforms in classrooms*. Artificial intelligence will increasingly become the engine of education, and student data the fuel. Critical EdTech researchers therefore need to pay close attention to the fate of these educational platform providers and to the ecosystems

of nested platforms and services hidden by the everyday interfaces that students and teachers work with. Will educational platforms act as data brokers for the advanced AI backends delivered by competing US and Chinese giants? Will platform providers be bought up, or simply be replaced by versions from these larger conglomerates themselves?

'Divisions of learning' across humans and machines

Grappling with the implications of increasing datafication of education raises significant questions about the powerful models of human behaviour being 'learned' by machines as they surveil our everyday interactions with digital technologies. From our shopping routines to our political leanings, machines now seem capable of learning our habits and influencing our choices in unprecedented ways. Indeed, one might be forgiven for assuming that effective and unadulterated 'machine learning' is now more salient to the future prosperity of our political economy than the learning undertaken by human beings.

As the 2020s progress, we need to consider a set of difficult questions about 'learning'. For example, where is the most significant and influential learning happening in our societies? What kind of systems are undertaking learning? How is 'our' learning (as citizens, students, workers) intermingled with the ways that machines learn? Who is ultimately benefiting from the outcomes? These questions address a vision of learning that extends well beyond the boundaries of formal education – highlighting the extent to which educational researchers need to expand their horizons and extend their interests. Prominent work in critical data studies over the 2010s has foregrounded the need to shift attention from divisions of labour to 'divisions of learning' as perhaps the dominant 'axial principle of social order in an information civilization' (Zuboff 2019, 179). If this is the case, then critical EdTech research needs to work to re-establish the value of formal education in an era of ubiquitous learning (by machines, from 'our' data). Above all, then, we need to challenge accepted views of what constitutes meaningful and worthwhile knowledge for our future societies.

IT industry actors as a leading educational force

None of the changes highlighted so far will occur of their own accord. Indeed, the 2020s will see the expansion of the commercial 'ecosystem' that already exerts considerable influence on what takes place in the area of educational technology. School systems will continue to be subject to major pushes for privatisation of the digital infrastructures. The global digital education agenda will continue to be influenced by big corporate 'edu-businesses' such as Pearson alongside wealthy philanthropics such as the Chan Zuckerberg Initiative. Alongside these established corporate behemoths, the most profitable EdTech businesses will most likely emerge from 'new' markets such as China and India. These actors will be accompanied by portfolios of 'start-up' companies (often financed by powerful venture capital interests) pushing educational 'innovations' and 'solutions'. Critical researchers therefore need to be alert to how corporate actors that are shaping educational technology agendas around the world.

While there is nothing inherently wrong (or especially new) with these commercial contributions, questions need to be asked about regulation and oversight of corporate activities in educational settings. For example, should major 'big tech' corporations continue to exercise 'soft power' in influencing and shaping education decision-making, while all the time profiting from the decisions being made? How might we better ensure that commercial actors respond primarily to the ideals of public education rather than working to create demand for their products? How can educators be supported in maintaining their role in guiding and leading the development of our youngest members of society? What counter-narratives can be developed against the prevalent forms of high-tech behaviourism that companies are promoting through the development of data-driven personalised learning systems? Critical EdTech research has a key role to play in supporting educational communities to confront the challenge of preserving the past while adapting to the future.

Reimagining forms of EdTech suitable for an age of climate change.

The 2020s will be the decade where we finally face up to the imperative to establish sustainability and ecological responsibility as central elements of educational provision and practice. One key aspect of this will be properly facing up to the ways in which digital technologies have been excessively consumed and discarded over the past 20 years in the name of education ‘innovation’. Regardless of how daunting such changes might seem, the education community needs to quickly curtail the environmental and ethical impacts of its digital technology consumption if there is to be a viable future for EdTech. Put bluntly, the priority for everyone working in the area of education and technology needs to be a rapid collective change of attitude and action.

So what might be done? One suggestion is for critical EdTech scholarship to follow the lead being set by the ‘Computing Within Limits’ movement that is growing within various areas of academic computer science (Nardi et al. 2018). This attempts to identify and promote forms of computing that are best suited for a resource-constrained planet. The emphasis here would be on planning future education technology use with a primary aim of ‘coping with finiteness’. This involves abandoning the ‘cornucopian’ assumptions of limitlessness and abundance that have bloated digital technology use over the past 30 years. Instead, we need to develop radically leaner and ecologically-minded approaches to rethinking how digital technologies might be best deployed (or not deployed) in education.

Finding alternatives: solidary economies, convivial technology, respectful design

Amidst all these ‘big’ challenges is the need to remain hopeful and continue to ‘think otherwise’. In an era when many commentators presume ‘there are no alternatives’, one of the key roles of critical scholarship is to find alternatives. We therefore need to focus on developing not only potential/possible futures, but also developing alternatives to all the forms of data colonialism and Big Tech implicated in everything outlined in this paper so far. This is not a case of identifying ‘best practices’ or ‘next practices’, but engaging in critique that highlights contemporary lines of flight away from (over)centralisation and excessive commercialisation. In solidary economies, for instance, how might not-for-profit organisations or the open educational movement shift EdTech priorities? Reimaginings such as these can foreground concerns of care rather than competition; cooperation rather than rivalry; imagination rather than corporatized creativity.

Alternately, how might schools and other educational institutions adopt and adapt ‘convivial technologies’ (Vetter 2018) which are not designed for profitability, efficiency and growth, but instead orient toward de-growth, and to more equitable, participatory, democratic, interrelated and ecological societies? Elsewhere, what possibilities are there for decolonising technology, or using what Tunstall (2019) calls ‘respectful design’? These approaches contest the currently dominant racist, monolingual, ethnocentric and sexist discourses of EdTech by foregrounding relational and community approaches to design. This would involve educational technology designers taking time to think about who they are designing for, who their most vulnerable users are, and who their designs might harm as well as benefit. Any proposal for new EdTech should place emphasis on carving space for experimenting with ‘alternative’ (although this word is itself too binary) ways of thinking about what education is, and what education should be. Highlighting such alternative EdTech futures is not necessarily an optimistic endeavour, but it does retain a modicum of hope that is otherwise easily lost sight of.

Conclusions

All six of the challenges raised above point to uncomfortably big shifts in direction for us to contemplate. Yet while these are undeniably complex challenges, they offer a decent foundation from which the field of critical educational technology scholarship can work in a hopeful (rather than hopeless)

manner. So, where should this speculative list of near-future concerns take us now? Clearly there is a need to set about developing a critical EdTech agenda that addresses *all* these issues – making use of recent theoretical and methodological approaches that are emerging outside the usual purview of ‘education research’. Indeed, some of the most interesting new ideas that can drive these reimaginings of digital education can be found in interdisciplinary areas still forming in-between the computational and social sciences – i.e. critical data studies, anticipatory studies, critical design. It is crucial that critical EdTech scholars continue to pay close attention to such hybrid areas of debate and inquiry.

An additional task for researchers in critical EdTech is to develop shared spaces for international discussion. While all of the concerns highlighted above may be of cross-national interest, actual material circumstances and existing arrangements across (and, often, within) national boundaries vary widely. This makes potential ‘impacts’ of digital technologies in national educational systems significantly different. While some contingencies may be distributed in similar ways across the globe, they will nevertheless take on varying local forms and nuances. Critical EdTech research will undoubtedly profit from cross-cultural dialogue to not only better identify and understand broad issues, but also to create alternatives to the globalised (and globalising) forms of education being advanced by commercial interests.

There is much to take in here, but do not simply accept our word for all this! The present paper has outlined a few probable challenges, and begun to hint at a few broad directions that academic research might now focus on. However, these are *our* own speculative futures, and it is likely that every reader will have additional responses and preferences. It is important that as a concerned community, we commit to engaging in sustained collective conversations about how we might work together to successfully drive critical educational technology scholarship through the 2020s ... let alone the remainder of the twenty-first century. By the time you are reading this, our new decade of scholarship will be already be under way ... we should all be taking a proactive role in how it continues to unfold.

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