

Preface

Old Debates, Unanswered Questions, Better Futures

This is a very timely book. Outside of schools digital technologies have impacted on virtually every aspect of our lives. It is hard to imagine life just a decade or so ago before Google, Facebook, Instagram, Snapchat, Twitter, and so on. Yet evidence from a recent Organisation for Economic and Co-operation Development (OECD) (2015) report claims the reality inside schools is very different. Schools lag considerably behind the transformative promise of new digital technologies. According to the OECD's (2015) international comparative analysis of PISA data:

Students who use computers moderately at school tend to have somewhat better learning outcomes than students who use computers rarely. But students who use computers very frequently at school do a lot worse in most learning outcomes, even after accounting for social background and student demographics (p. 3).

The study also found countries that had invested heavily in digital forms of education showed no appreciable improvements in student achievement in Reading, Mathematics or Science. While the findings grabbed headlines around the world and fuelled concerns of many parents and caregivers that today's "screenagers" risk their physical, intellectual and emotional development by spending far too much time playing with digital devices, debates about the effects of technology on schooling are not new. Indeed, there has been a long history of claims, counter-claims and moral panics about the impact of technology on teaching and learning.

Almost 20 years ago the level of public concern over the growth of new technology in education was heightened when the *Atlantic Monthly* strongly attacked the spurious evidence supporting the "computer delusion" in schools (Oppenheimer, 1997). After an exhaustive investigation, Oppenheimer (1997) concluded:

There is no good evidence that most uses of computers significantly improve teaching and learning (p. 45).

This conclusion gave further ammunition to neoconservatives, including those within the education profession, who argued that it was scandalous so much money

had been allocated for computers and Internet access with so little serious evaluation (Armstrong & Casement, 1998). More alarmingly, Armstrong and Casement (1998) claimed:

A generation of children have become the unwitting participants in what can only be described as a huge social experiment (p. 2).

The problem is that such blanket statements, including the findings of last year's OECD report, give insufficient attention to the instructional context. Ironically most of these headline grabbing reports are guilty of assigning too much attention to the technology itself, which is precisely what they accuse the proponents of hyperbole surrounding the digital revolution of doing. Put another way, it is techno-centric to think that technology alone can significantly improve teaching and learning, as a complex constellation of factors or confounding variables contribute to better educational outcomes. The key point is that the computer should not be seen as a single entity or monolithic machine that teachers use within schools in a uniform manner.

As this book illustrates through a diverse range of chapters from countries around the world, new digital technologies can be deployed in the service of teaching and learning across many different instructional contexts using a wide variety of applications. Thus, sweeping generalizations about the impact of digital technology on teaching and learning are unhelpful as far more nuanced understandings are required, which combine both numbers and narratives. In the best traditions of the scholarship of practice this book gathers together some insightful narratives and case studies on digital teaching and learning in K-12 schools. It provides a delightful taste of the diversity of digital learning as it is currently practised around the world. In this respect the book offers a strong counter-narrative to the OECD (2015) report by showing how many schools, teachers and students are embracing the transformative promise of new digital technologies.

Despite this important contribution to the field, it is hard to disagree with the OECD's (2015) conclusion that there are still many questions unanswered. For example, how do we mainstream local case studies in digital teaching and learning on a more systemic, scalable and sustainable basis? What are the real problems that teachers and schools currently face which could be solved through new digital technologies? What will be the long-term impact or distal effects of digital teaching and learning on K-12 schools? This last question is mindful of Amara's Law:

We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run (Gammack, Hobbs, & Pigott, 2011, p. 368).

In many respects, old debates about the impact of technology on learning rekindled by the recent OECD (2015) report help to raise much bigger questions. They challenge the rhetoric of "Ed-Tech Speak" (Selwyn, 2015) and can be used to promote deeper thinking about broader social imaginaries, alternative scenarios for schooling and more radical futures in the service of big ideas (Brown, 2015). One thing is certain: the future will be different. Nevertheless, the bigger question remains in terms of what type of K-12 school system and educational outcomes do we want new digital technology to help serve in the future? The answer to this question needs to go beyond

simple dichotomies of illusory hype or pessimistic Armageddon. In Postman's (1993) terms, "Every technology is both a burden and a blessing; not either-or, but this-and-that" (p. 5).

This is why in the language of possibility—albeit from a more critical perspective—we need to continually question and justify the faith politicians, industry leaders and technology advocates place in new models of digital teaching and learning. Ironically, attacks on the use of technology in K-12 schools and concerns about the skills of the Google Generation contribute greatly to better understanding the competing drivers for educational reform and how to achieve more transformative goals. The successful implementation of digital technology in schools requires deep change and transformative leadership, which involves capturing the hearts and minds of teachers, and wider stakeholders. As Hargreaves and Fullan (1998) remind us:

Ensuring that technological change will really benefit student learning depends on it being driven by its critics as much as its most ardent advocates (p. 79).

The tension between being critical and offering alternative futures that reimagine formal schooling remains a major challenge. This book helps in this respect, as it does not shy away from confronting a number of issues regarding the integration of technology within both physical and virtual learning environments. While adopting future-focused language it explores many of the challenges facing K-12 schools in authentic real-world settings around the world—ranging from policy development to classroom practice. As such the book avoids the trap of being technology driven by anchoring the discussion in the gap between rhetoric and reality, and does not lose sight of the wider goals of education—that is, developing critical thinkers, critical consumers and critical citizens capable of shaping a better future—for all.

Finally, it is important to acknowledge the hours of work that authors, reviewers and editors have devoted to, and at times slaved over, individual chapters to improve the quality of this book. Writing is essentially about thinking and the hundreds of hours devoted to this book represent a great deal of thinking. It is reassuring that even in today's digital age the words of Dr. Samuel Johnson (1709–1784) ring true:

What is written without effort is in general read without pleasure.

Mark Brown
Chair in Digital Learning and Director of the
National Institute for Digital Learning (NIDL)
Dublin, Republic of Ireland

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