Teaching and Digital Technologies

Big issues and critical questions

Digital technologies can enhance effective teaching and learning. However, these same technologies also present teachers with many issues and dilemmas. *Teaching and Digital Technologies: Big issues and critical questions* helps both pre-service and in-service teachers to critically question and evaluate the reasons for using digital technology in the classroom. Unlike other resources that show how to use specific technologies – and quickly become outdated – this text empowers the reader to understand why they should or should not use digital technologies, when it is appropriate (or not) to do so, and the implications arising from these decisions.

Teaching and Digital Technologies is an equally relevant resource for university subjects that have a discrete focus on digital technologies, as well as subjects that deal with digital technologies in an integrated fashion. It directly engages with policy, the Australian Curriculum, pedagogy, learning and wider issues of equity, access, generational stereotypes and professional learning. The contributors to the book are notable figures from across a broad range of Australian universities, giving the text a unique relevance to Australian education while retaining its universal appeal.

The 26 pragmatically focused chapters guide pre-service and in-service teachers through key issues to help them decide when, how and why they need to engage with digital technologies. Each chapter also includes suggested activities, and the text is supported by a website, at www.cambridge.edu.au/academic/ teachingdigital, that contains further resources.

Teaching and Digital Technologies is an essential contemporary resource for early childhood, primary and secondary pre-service and in-service teachers in both local and international education environments.

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Foreword

My last week has included both a dinner with an education minister and a live media interview. What characterised both these events was a shared question: What is the single most important thing about teaching with new technologies? And of course therein lies the problem: there is no single uniquely important thing, no silicon bullet. Schools and other institutions of learning are complex places – single events like a road accident, or a windy day can and do change the nature of the school community. Students are all individuals and yet cohorts have their own character too. Teachers themselves also vary, and thank goodness; our best learning memories usually have a unique teacher as part of the mix. None of this is simple.

And, underpinning all this, the conveyor belt of innovation whisking us further forwards into this millennium accelerates in both the power and the choices we are offered year on year. We face, as has often been observed, the certainty of uncertainty and some kind of constancy of change. It is hardly surprising that in among all this, politicians and others ask for simple answers for 'the single most important thing', or revert philosophically to an earlier and less complex era, or to childhoods remembered. It is no help at all that companies also often suggest that they actually have 'the most important thing': adopt our solution, trust our anecdotes, keep taking our tablets …

Learning professionals, parents and children know better of course, and they will love this book; it is cogent, reflective and, crucially, it embraces the extraordinary complexity of making learning better in this exhilarating third millennium. Chapters can be dipped into and out of, or it can be enjoyed cover-to-cover, for its narrated insights.

Why would all this matter? Well first, in a world where many (although not all) may live way beyond 100 years, and where newly emerging complex problems occur seemingly weekly, a lifetime's passion for learning has never been more important. The educational stability of earlier eras cannot prepare us for the problem solving we need to tackle the exogenous change and stochastic shocks of eras to come. A mere decade and a half or so of full time learning must leave you ready and hungry to learn delightedly throughout a lengthy lifetime.

Second, for a significant swathe of the world's 2.2 billion children, education has not delivered what they need. Shortages (or often a complete absence) of teachers,

partial information, war, famine, bigotry and more have isolated them from any real chance of a traditional school education. We have to believe that technology has the ability to transform learning to make it affordably better for everyone. If so, surely it is helpful to start with a detailed look at the big issues and critical questions provoked by teaching with digital technologies.

Children, teachers, parents and technology have to lie at the beating heart of a vibrant new approach to learning. We need everyone's algorithmic thought; the world needs our collective digital ingenuity. New learning has the ability to mend this world. This book is not a bad place to start on the repair.

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Preface for teacher educators and professional learning leaders

This book is designed as a resource that enriches pre-service teacher education and in-service professional learning – helping teachers to critically question and evaluate the reasons for using technology. It is important to note that this book, while adopting a critical perspective of digital technologies, believes that such technologies can benefit education. However, rather than focusing on what buttons to press, each chapter aims to empower the reader to understand why they should (or should not) use digital technologies, when it is appropriate (or not), and what new implications arise.

In the context of teacher education the text is equally applicable for university subjects that have a discrete focus on digital technologies, as well as subjects that deal with digital technologies in an integrated fashion. The authors of the chapters are notable figures from across a broad range of Australian universities, giving the text a uniquely strong relevance to Australian education. It directly engages with policy, curriculum and other issues particularly relevant in an Australian context. This text provides a resource that assists specialist and non-specialist teacher educators (lecturers and tutors) to incorporate suitable discussion and activity into classes to ensure students engage with many of the key critical issues and debates.

There are approximately 50 000 pre-service teachers in Australia. Many of them are exposed to digital technologies in their courses at a *functional* level (for instance, using technologies such as PowerPoint or blogs in lessons) with relatively little exposure to the big questions about if, when and why digital technologies should be used. The national Teaching Teachers for the Future project revealed that most universities in Australia are struggling to not only embed the use of ICTs in pre-service programs but to also provide all students with the opportunity to engage with the critical issues and their consequences (see Finger et al., 2015; Romeo, Lloyd & Downes, 2012).

In the context of in-service professional learning, the text is designed for general, specialist and leading teachers. The issues and questions, presented by leading experts, reveal the complexity and often hidden implications of our constant struggle in using digital technologies in the classroom. This text is relevant for teachers of early childhood students through to senior years, in all subject areas and domains.

The text is made up of short chapters, designed to concisely broker key issues and questions for teachers to inform their practice. In each chapter, one or more 'critical question' is asked. These are the kinds of questions that we believe all teachers should be asking themselves. Often there is no simple or clear answer to them. However, by asking them we are encouraging a critical perspective in the selection and use of digital technologies. Each chapter explores the complexity of the topic, thereby helping us to understand why we need to ask these questions. It may seem strange to pose such complex and sometimes irresolvable questions in a book designed for non-specialist and pre-service teachers. However, these kinds of questions are rarely dealt with despite their significant implications for all teachers and their students. Understanding that they exist is an essential beginning point for any teacher seeking to use digital technology in their classroom.

Each chapter also contains suggested activities to explore the issues and questions raised. These include discussion scenarios, study questions, observations, analysis prompts and further reading. The text is also supported by a website that contains links and introductory media.

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Glenn Finger is Professor of Education at Griffith University. He was Dean (Learning and Teaching) of the Arts, Education and Law Group from 2011 to 2015, Deputy Dean (Learning and Teaching) of the Faculty of Education from 2007 to 2010, and Deputy Director, Centre for Learning Research from 2005 to 2006. He is a Fellow of the Australian College of Educators. Prior to his appointment at Griffith University in 1999, Glenn served with Education Queensland for more than 24 years as a physical education specialist, primary school teacher, deputy principal and acting principal in a wide variety of educational settings.

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