

***Teaching in a Digital Age: Guidelines for Designing Teaching and Learning*, By A. W. (Tony) Bates, published as an e-textbook by BCcampus.**

Tony Bates, one of the world's most knowledgeable and thoughtful commentators on educational technology, has distilled the wisdom acquired over 50 years of work into this magisterial book. Although once a sceptic about Open Education Resources, he has published *Teaching in a Digital Age* as an open textbook through BCcampus, making this admirable work available to a global readership as a dynamic, living project.

Four features make this book stand out in the growing literature on online learning. First, it addresses cogently the changing skill and content requirements for teaching and learning in the 21st century. Second, it offers direct help to academics in a variety of institutional settings who are grappling with the challenges and opportunities of integrating technology into their teaching. Third, it provides a 50-year historical perspective on the use of technology in teaching, citing research on student use of media from the 1970s onwards that is as relevant as ever. Finally, the beautiful structure and scaffolding of this e-Textbook reflect great credit on the author and his BCcampus editorial team.

The first five of the book's twelve chapters address the purposes and requirements of teaching in a digital age. It begins with a discussion of the fundamental changes taking place in education, exploring contemporary structural changes in economies and societies in order to draw out the skills needed in a digital age, to identify the right relationship between education and the job market and to assess the impact of expanding enrolments on teaching methods. Is the nature of knowledge evolving and how different views about it should modify our approaches to teaching?

This first chapter, which notes that "students are probably the most changed part of higher education in the last 50 years", sets the stage for what follows. The challenge today is to enable growing numbers of increasingly diverse students to achieve success. Attempts to reinforce elite systems by "dialling the clock back to the 1950s" (Bates' comment on current UK policy) will not serve 21st century societies well.

Chapter 2 dives into epistemology and provides a thorough and well-researched account of theories of learning: objectivism, behaviourism, cognitivism, constructivism and connectivism. It summarises lucidly the important debate about whether knowledge is changing. The author concludes that the times require more emphasis on developing the skills of applying knowledge rather than merely teaching content. But he argues that the values and goals of academic knowledge do not – and should not – change much, although the way it is represented and applied must evolve.

The strengths and weaknesses of different methods of teaching are divided helpfully between Chapter 3 on solely campus-based instruction and Chapter 4 on fully online teaching. This is the second admirable aspect of the book: it starts where people – particularly academic faculty members – really are. Especially enjoyable are the occasional scenarios – doubtless only semi-fictional – which capture, candidly and entertainingly, the tenor of conversations at dinner parties, in staff common rooms and in the privacy of homes when academics discuss the impact of technology on their work and the latest bees in their deans' bonnets.

Bates is an acute commentator on the strengths and weaknesses of Massive Open Online Courses (MOOCs) and devotes Chapter 5 to them. The ongoing media coverage of MOOCs has stimulated interest in online teaching everywhere and made them a driver of change. But they are at an early stage of maturation and have major structural limitations for developing deep or transformative learning, or for developing the high-level knowledge and skills needed in a digital age. As the design of MOOCs improves they may come to occupy a significant niche and replace some forms of traditional teaching such as large lecture classes. But the most promising applications of MOOCs may well not be in higher education but in tackling large global problems through community action.

Chapters 6 to 9 will be especially useful to those who are designing teaching for the online space. In summarising decades of research on educational technology – to which he has been a notable contributor – Bates observes that technologies are vehicles for various media, which he helps us examine in terms of their formats, symbols systems, and cultural values. Chapter 8, where he presents the SECTIONS model for media selection that he has refined over many years, is particularly compelling, while Chapter 9 explores choices of modes of delivery.

The three concluding chapters look at trends in open education, the challenge of ensuring quality and the need to support teachers and instructors in this digital age. Developments in open educational resources, open textbooks, open research and open data will be more important than MOOCs – and far more revolutionary because they will shift power from teachers to students. He defines quality as “teaching methods that successfully help learners develop the knowledge and skills they will require in a digital age” and argues for newer concepts of quality that recognise and accommodate the affective or emotional aspects of learning. The design of many MOOCs and the high dropout rates in US two-year colleges new to online learning suggest that institutions are not yet following best practices or developing teaching methods that exploit the strengths of both classroom and online learning.

Finally, the author argues that we must get real about the need to train teachers

for the digital age. “We have to move from a system of voluntary amateurism to a professional, comprehensive system of training for teaching in post-secondary education, and a modern, up-to-date curriculum for pre-service and in-service training of school teachers.” This impressive book provides a curriculum for such training. It is a splendid work, replete with engaging scenarios and lived experiences. Tony Bates shows us how to “walk the talk” about teaching in a digital age.

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