Book review
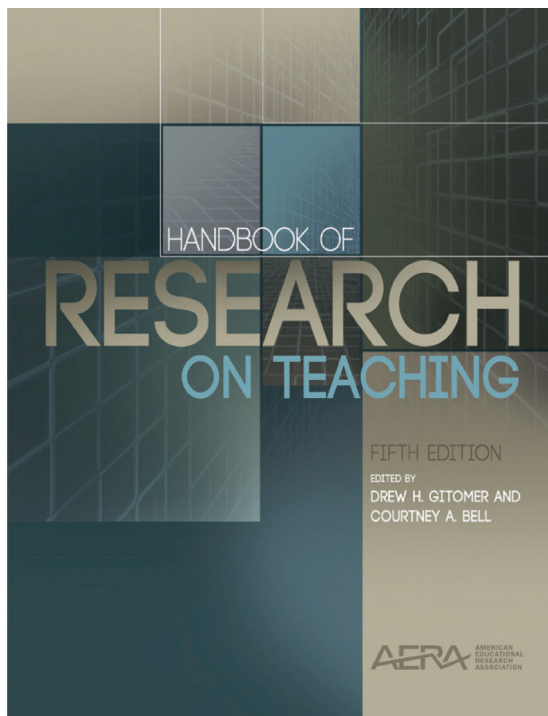
Handbook of Research on Teaching, Fifth Edition, edited by Drew H. Gitomer and Courtney A. Bell

This publication covers a wide range of research topics relating to teaching and teacher education. Each of the 23 chapters serves as a useful reference tool and is written by experts in the field. The authors summarize the state of the field and provide a conceptual overview of a critical aspect of research. Of the 23 chapters in the book, 15 have been reviewed by colleagues in the Department of Curriculum, Pedagogy and Assessment at the UCL Institute of Education, UK, who share a research interest with the chapters' authors. What comes across clearly from the reviews is that, while the book as a whole provides a critique of the current state of education in the USA, it has a wider relevance to students, practitioners and scholars in the UK and around the world. It is worth pointing out that readers can purchase individual chapters of the book from the AERA, as well as the complete book.

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Chapter 1: 'Thinking philosophically about teaching' by Gert J.J. Biesta and Barbara Stengel

The dominance of constructivism in educational thinking in recent years has focused research on learning as distinct from teaching. This thoughtful and exhaustive article is a welcome shift to philosophizing about teaching and the empirical consequences for a research programme. Biesta and Stengel problematize the relation between teaching and learning in ways that expose the authoritarianism of outcome-based learning with its presupposition that teaching is the cause of learning, a relation which the authors critically refute in highlighting the indeterminacy of teaching. The chapter begins with six 'iconic conceptions of the teacher': Plato's dialogic questioner, Rousseau's Émile, Dewey's democratic designer, Freire's liberator, Rancière's critical questioning of power in the relationships between teacher and student, and Noddings's carer. Three crucial characteristics of teaching are interrogated through the lens of these iconic conceptions: questioning the nature of the relationship between teaching and the taught, intentionality in that teaching involves bringing about some kind of change in those being taught, and purpose in scrutinising the reasons for teaching and the corollary of judgment. In so doing they demonstrate the necessary tensions and synergies between these three characteristics.

In scoping such a huge field as teaching there is invariably a need to schematize some issues but in doing so the authors provide the reader with enough background to warrant further study. There are also some interesting contradictions once the authors situate their questions in the policy context of contemporary USA where the marketization of education has had so much influence in the UK. To raise questions about rewarding those teachers who 'achieve high rates of academic achievement' seems to acknowledge objective-based teaching and degrade the important fractured relation between teaching and learning. But a rewarding text well worth recommending to those researching teaching in any domain.

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Chapter 2: 'In search of a grand narrative: The turbulent history of teaching' by Judith Kafka

In this chapter Judith Kafka reviews the history of teaching in the USA through the lens of the instructional triangle. Taking each aspect (teachers, students and content) in turn, she summarizes what that evidence reveals about teaching, in the hope of exploring a 'grand narrative'. Confounded by the problem that it is extraordinarily difficult to know what goes on inside the 'black box' of classrooms, particularly with available evidence, Kafka provides a compelling and informative account of the ways that teachers have been viewed, expectations of their work, how students have been treated and have responded to such treatment, and how curriculum has been seen to affect teaching. She promises a 'messy' account but is too modest. While the evidence provided does indeed suggest that there is no clear universal narrative about how teaching was formulated and undertaken through this extensive period of US history, what her account does do convincingly is to suggest that teaching has been influenced less by a desire to educate and more by a desire to control, influence and reform. This can be seen in the examples given of which teachers were recruited where, what curriculum reforms were introduced, how students (and their parents) responded and in what US society collectively expects of its schools, its teachers and its children. I was struck by the parallels with the debates happening in education today: around

the merits of direct instruction, the recruitment of teachers, the best ways to teach the full spectrum of the population and the appeal of student voice. I would suggest that anyone who doubts the adage that there is nothing new in the field of teaching would benefit from reading this informative and engaging chapter, even if the information therein is a little shocking in places.

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Chapter 3: 'Engaging methodological pluralism' by Pamela A. Moss and Edward H. Haertel

In this chapter, Moss and Haertel review a range of methodological approaches (or 'traditions', as they refer to them, in an effort to acknowledge 'both the historically situated and dynamic nature of methodological theory and practice' (128)) while engaging in methodological pluralism. They provide a conceptual framework that offers a set of heuristics to support readers in learning from such diverse methodological approaches and in combining them to carry out multi-methodological research programmes. They concretize these various methodological traditions by focusing on examples from research on teaching and in particular 'how educational research can be incorporated into educational practice' (128). Their targeted audience includes novice education researchers, experienced education researchers who might lack expertise with certain methodological traditions, readers who can influence research policy and funding priorities and are preparing researchers and readers who are informed by or engaged in shaping education research.

While there is a plethora of literature on different methodological traditions for educational research, the unique contribution of this chapter is evidenced in the synergies that the comparisons of the various methodological traditions offer.

Moss and Haertel were successful in offering an insight to the primary affordances of a number of methodological traditions, such as experimental and quasi-experimental designs for generalized causal inference, ethnography, discourse analysis, design-based research, social network analysis, participatory action research and a few more.

The chapter challenges readers to consider these key affordances as well as the generalizations, partialness and limitations of various methodological traditions by comparing them and reflecting critically upon their diversity. Readers will consequently be better prepared in conceptualizing multi-methodological programmes of research. Their argument – that a genuinely rigorous approach to social research can be achieved by seeking challenges from alternative traditions that may illuminate the perspectives and practices we take for granted and allow us to evolve in our research practices – is definitely a convincing one.

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Chapter 4: 'Teaching beyond achievement tests: Perspectives from developmental and education science' by Elise Capella J. Lawrence Aber and Ha Yeon Kim

The purported purpose of this (extensive) chapter is to review and critique what is known about the promotion of school student learning and development beyond what is measured by achievement tests, and so to suggest both ways of better synthesizing policy and practice with research, and to identify gaps in that research. This is of course a vast task, so, unsurprisingly, the authors concentrate on a limited range of evidence,

largely sourced from the USA. Many of the areas discussed are saturated in culture and context, so the chapter is probably of greatest interest to policymakers, researchers and practitioners in that jurisdiction.

They begin their review by focusing on desirable student outcomes, which they argue comprise academic competence, physical and mental health, and normative social-emotional and behavioural traits. They work back through a range of mediating outcomes (self-regulation, motivation and engagement) and processes (teacher–student relationships, peer relationships and family involvement) to analyse influential factors at a variety of levels: teacher characteristics, classroom teaching practices and school characteristics, all embedded in consideration of context and culture. As such, the structure of the chapter is very clear. However, the value of teaching beyond a content-focus curriculum in a particular field is often argued in terms of a parallel improvement in achievement test outcomes, which rather reinforces the authors' argument that test outcomes often infiltrate our entire educational lens. Reassuringly, the authors are very careful not to attribute causality to a statistical association, but as a result the narrative is necessarily somewhat contingently framed.

As a synthesis of a limited range of literature in the stated, sometimes contentious, fields, the chapter provides a clear, digestible and authoritative overview.

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Chapter 5: 'The sociopolitical context of teaching' by Na'ilah Suad Nasir, Janelle Scott, Tina Trujillo and Laura Hernández

In this chapter Nasir *et al.* employ a multilevel analysis in examining 'macro-level social, political, and economic trends' and how these relate to 'districts, schools and the working lives of teachers' and the 'practices of teachers and the learning opportunities of students' (350). They present a powerful argument that demonstrates how the learning outcomes of students in schools cannot be separated from the inequality and poverty that exist in society. They offer an alternative vision of 'optimal learning' as one in which teachers foster caring relationships and students tackle challenging tasks, experience 'productive failure', develop critical thinking, attend to big ideas within academic disciplines and develop positive attitudes and identities towards learning (365). However, the overall picture they present is rather pessimistic. They highlight how growing levels of inequality within society, increasing segregation in schools between students from different ethnic and socio-economic backgrounds, and the promotion of neoliberal and market-based reforms in education have combined to undermine the professional autonomy of teachers and to encourage reductive and test-driven approaches to teaching. These effects are magnified in schools serving disadvantaged and marginalized students, which have fewer resources to draw on and are more susceptible to increased levels of accountability. Two case studies concerning Chicago and New Orleans provide practical contexts to exemplify the trends described in the extensive but mainly US-based literature review. There are clear parallels, however, with other contexts, making the chapter important reading for academics around the world, particularly those in the UK where developments in educational policy are disturbingly similar. While the authors claim that 'co-constitution' is an important aspect of their multilevel analysis (350), there is little evidence presented of how classroom practices can also affect the school climate and influence new policies and social structures. My feeling is that the authors have missed the opportunity to present a more optimistic picture by highlighting innovative practice in schools, perhaps as part of the two case

studies, that bucks the overall trend and demonstrates how the alternative vision of learning they present might be achieved.

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Chapter 6: 'What constitutes teacher learning?' By Rosemary Russ, Bruce L. Sherin and Miriam G. Sherin

This chapter offers readers a deep understanding of what may constitute teacher learning. The authors adopt a learning theory approach in explaining how teachers learn to teach and they explore whether learning occurs within teachers' heads or within a socio-cultural system. They argue that teaching requires the development of extensive types of professional, specialized expertise with new knowledge and practices built out of and on top of existing ones. Asking 'what does it mean to develop expertise in teaching?' and 'what are teachers getting better at when they learn to teach?', the authors offer a complex understanding of a contested area. In making sense of current research practices, they identify three paradigms of educational research in teaching. In each, they describe the specialized knowledge and practices involved in learning to teach and how it combines with 'everyday' knowledge.

The first paradigm is behaviourist; 'process-product' researchers of teaching typically seek to identify the relationship between what teachers do and what students learn through the use of proxies for learning by identifying 'key instructional behaviours' (395) that engender learning. The second paradigm is cognitive; this paradigm concerns the conceptualization of knowledge by teachers with the subject matter being taught as a key contextual element. Researchers seek to understand how fact-like knowledge is transformed into 'usable teaching knowledge' through a process of pedagogical reasoning and proceduralization. The authors argue that teachers who view students' thinking as a resource for their own learning continue to develop new understandings of children's thinking through interactions with children in their classrooms. The third paradigm is situative and social-cultural, and here learning is understood within a larger system; researchers seek to understand classrooms as communities of practice with their own culture and history. Individuals interact, learning from each other as well as from artefacts and representations. This paradigm represents a broadening of what it is to understand teaching, which itself is seen as fundamentally interactional.

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Chapter 7: 'Research on teacher preparation: Charting the landscape of a sprawling field' by Marilyn Cochran-Smith and Ana Maria Villegas, with Linda Whalen Abrams, Laura C. Chávez-Moreno, Tammy Mills and Rebecca Stern

With teaching facing ever-expanding pressures and challenges, this chapter presents a broad view of emerging trends and issues in teacher education research. While describing the crowded landscape of research into teacher preparation, the authors propose a historically situated social practices framework to shape a methodical view. Each of the three main trends of this research stems from different, often competing perspectives.

Political and policy pressures have led to unprecedented attention to teacher quality. This research into accountability and effectiveness is concerned with ways

to improve teacher preparation and recruitment to support the even distribution of teachers to urban and poor schools. Second, teacher education research focuses on changing knowledge about how people learn and how to use this understanding in learning and teaching. Within these predominantly constructivist concepts of a learner-centred, active process of teaching, the authors describe studies into innovative strategies, connections between theory and practice, understanding of subject matter and pedagogical content knowledge. Third, this research considers rapid demographic changes and the increasing diversity and inequality in the student population. These studies concentrate on ways of providing students from diverse backgrounds with equal learning opportunities and preparing culturally responsive and socially just teachers.

Considering the apparent segregation related to social practices underlying this research, the authors underline the need for a more unified approach that considers social structures and systems that cause inequality and reaches more broadly past individual programmes and interventions. By systemizing the 'messy' field of research into teacher preparation, the authors identify tensions, offer constructive critique and sketch directions for further investigations.

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Chapter 9: 'Teaching diverse learners' by Prudence L. Carter and Linda Darling-Hammond

Carter and Darling-Hammond present a timely account of the rich research and theorizing about concerns for greater social justice in the field of education and the experiences of diverse learners. This is work of clear scholarship, but also strong in its commitment to improving and equalizing schooling for 'students from families and communities with limited resources, power, or privilege … thought to be most at risk for academic underperformance and stalled economic mobility' (593). Their work considers teaching and learning as both technical and social processes, making clear that they cannot be 'culturally neutral' and are tied up with issues of power and politics. Much of the chapter is focused on culturally relevant pedagogy and multicultural curricula since the 1990s, including characteristics of teachers who work well with diverse learners and steps that could be taken to develop such approaches in teachers. The work focuses on the situation in American schools, but there is a fascinating section on international comparisons, through which we learn of the strides taken in Finland in approaches to educating their increasingly diverse urban school population, with emphatic support for multicultural and multilingual curricula and consistently high standards of learning for all in Finnish schools. UK teachers have much to glean from this chapter about the traits of teachers that could succeed with diverse British learners: cultural competence, 'warm demanding', a sense of efficacy, a socio-political consciousness, and social constructivist approaches to knowledge all have universal application. The authors are right to call for further research in the field, especially into intersectionality, but there is also an urgent need for action lest the juggernaut of so-called 'knowledge-rich' solutions lures us into simplistic hegemonic approaches to learning. It was salutary to remember that much of the outstanding good practice described in the chapter is over 20 years old, but the statistics of inequality remain current. We must follow the 'egalitarian Finns' and act now.

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Chapter 11: 'Teachers and teaching in the context of globalization' by Lynn Paine, Sigrid Blomeke and Olena Aydarova

This chapter offers a refreshingly balanced and scholarly review of trends and influences on teaching in an increasingly global educational world, although the authors also point to the constraints of language (and so culture) in focusing much international attention on Anglophone publications. They have much to say to both policymakers and researchers working with cross-cultural evidence, arguing that the power of comparative educational research lies in its potential to challenge assumptions and provoke consideration of alternatives, rather than provide simple, definitive answers.

The authors consider the power of international studies such as TALIS for the development of shared visions of e.g. 'learner-centred pedagogy', while also identifying the sources of evidence and promulgation as being largely rooted in the 'developed' world and so sometimes comprising 'educational colonialism' that is not necessarily transferable to other contexts. Allied to this, they also point to growing global evidence of a teacher quality gap between less and more advantaged children (725), including an educational 'brain drain' of education capacity from less developed to more developed countries, as well as from the public to the private sector.

In particular, they discuss the roles of comparatively new influential actors beyond national or local policy, responsible for the construction of pervasive discourses around teachers and teaching. They cite economic powers such as the World Bank, individuals such as John Hattie, and national comparative studies such as PISA, TIMSS and PIRLS, deconstructing the often unreasonable as well as sometimes unintended impacts that those have.

The last section identifies the consequent growing construction of what it means to teach through transnational discourses of governance and accountability that draw on limited metrics. It points to the potential costs of global trends in narrowing discussion of teachers and teaching and of positioning teachers as knowledge transmitters and knowledge consumers rather than as knowledge producers or ethical actors.

An authoritative and rewarding read.

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Chapter 12: 'Assessment and teaching' by William R. Penuel and Lorrie A. Shepard

This chapter explores theoretical constructions of formative assessment in the context of American classrooms, but many of the ideas are broadly applicable in international contexts. The authors argue that they are presenting these assessments as integral to teaching and learning, and aim to demonstrate their value – situated as they are in an educational context dominated by high-stakes, summative tests that focus on accountability measures. The discussion of the value and validity of formative assessments is well argued and provides the reader with a precise summary of both the pros and cons of taking a formative approach and the dangers of attempting to argue that it is the sole successful means of measuring progress and enhancing learning.

The authors' *theory of action* model (790) provides a sound foundation for their discussion of appropriate interventions to improve formative assessment practice. They are presenting something new: (1) a detailed attempt to align what are often viewed as competing theoretical and practical approaches to implementing formative assessment; (2) analysis of specific activities to improve current practice (and they emphasize that change will be necessary); and (3) an appraisal of the broader

environmental conditions (within schools, society, etc.) to ensure that these are suited to particular assessment practices. The authors have been brave in creating three intervention clusters – data-driven, strategy-focused and socio-cognitive – and then examining each in relation to points (1)–(3) above. The authors make no attempt to dilute the complexity of assessment practices, nor do they shy away from explaining the pros and cons of their clustered approach. The results are complex and rich in detail, but this is what makes this chapter so important in terms of just how teachers might explore and better understand the use and practice of assessments. The chapter could be used for in-service training opportunities – specifically, the systematic analysis in each of the three clusters would lend itself to explorations of classroom practice or evaluation of current school policies. It is a refreshing look at formative assessment and one that requires the reader to engage critically with a representation of ideas that we, as teachers, might find challenge our beliefs and make us question our practice.

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Chapter 13: 'Can policy (re)form instruction?' by Gary Sykes and Suzanne M. Wilson

Gary Sykes and Suzanne Wilson begin this chapter on the relationship between policy and instruction with an apt warning: 'Teaching and learning take time and trust. Policy cannot be that nimble. Subject to political winds, it can also be unstable' (851). Using a logic model for instructional policy that posits that only policies that galvanize solid and long-lasting support can hope to succeed, the chapter reviews the extant literature on instructional policy through a case-study lens. Those case studies concern policies that apply variously at the macro, state-wide level (the USA is a federal system, where states hold most of the education policy keys) or at the micro level of individual schools; others considered are targeted instructional policies. In almost all cases, success or otherwise relies on allowing enough time for change to bed in, support from administrators and senior leaders for the implementation of the instructional model, and on teachers understanding the policy and then being supported professionally to be able to carry it out. In an atmosphere in which the 'cumulative, interactive, and highly situated nature of instruction ... [is] inherently difficult to influence' (896), accountability policies can, and do, undermine instructional policy.

The chapter, while providing insights for a non-US audience, is primarily aimed at American academics; aside from a very brief discussion of international assessments – PIRLS, TIMSS, PISA – and their policy implications, all of the examples come from the States. Probably of greatest interest to international audiences is the section on comprehensive school reform (CSR), which both recognizes that the school is the critical unit of analysis and that instruction reform policy must incorporate a wide range of elements including instructional provision, professional development, measurable learning goals and parental and community involvement, while being underpinned by solid research evidence.

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Chapter 16: 'Research on social studies education: Diverse students, settings and methods' by Keith C. Barton and Patricia G. Avery

Integrated humanities courses are not popular with English secondary school teachers and there is overwhelming support for the work of separate subject disciplines within current knowledge discourses. Nonetheless, there would still be value in British educators reading Barton and Avery's chapter on American social studies research. There are fundamental ideas within their approach that would interrupt some conventional British 'wisdom'. They focus mainly on history and citizenship (in British terms) education, so geographers and social scientists may be disappointed with their coverage. In considering future research on students' thinking in social studies subjects they exhort us to pay more attention to the sense that young people make of the world in all its facets, past and present, and avoid positioning them as always in deficit with the established 'knowledgeable world'. This appears to be a far more liberating social justice approach than some current assimilationist notions of equity and core knowledge.

Barton and Avery are also clear that young people begin to make such meanings at an early stage of their education, thereby giving more respect and importance to primary school work. Their section on the impact of instruction presents interesting work on three key areas: inquiry, discussion and engagement with sources. 'Teachers' Instructional Gatekeeping' is an intriguing section that includes a range of important studies that examined teachers' decision-making in their planning of history courses in particular. This is a salutary reminder that although there may be constraints on teachers in curriculum, pedagogy and assessment, they are able, in all but a small number of UK schools, to exercise independent judgement when planning their lessons. More studies of how they do that would be most welcome, partly to secure the importance of maintaining such independence. The chapter ends with a call for researchers in this area to give more credibility to small-scale studies by linking them to a clear theoretical framework.

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Chapter 17: 'Research on the teaching of mathematics: A call to theorize the role of society and schooling in mathematics instruction' by David Chazan, Patricio Herbst and Lawrence Clark

The authors present their intention as bringing to the fore, in research on the teaching of mathematics, considerations of societal and institutional contexts, and melding those with the commonly adopted focus on the individual teacher. In doing so, they have particular messages for policymakers and those who study teacher change, because they broaden the usual balance of foci. It is important to note that they do not claim there is currently no work using this approach; rather their argument is that a renewed emphasis on such a perspective has the potential to offer rewards in terms of meeting the valued goals for mathematics education of a wider range of stakeholders.

In their discussion the authors very helpfully point to distinctions between teaching and instruction, and the relationships of each of those to characteristics of the discipline, of students and of teachers. They frame their argument within a USA context of challenging international comparisons in performance, inequitable attainment across socio-cultural groups, and a technological future predicated on greater participation in mathematics and science. Working within an activity-theoretic framework, they synthesize existing work, at least from the Western tradition, that

explores the cultural meanings of participation in mathematics instruction and begins to provide tools for foregrounding new aspects of context, and in particular those of the institutions in which mathematics education is embedded.

Finally, they suggest that teaching of mathematics can only be understood when the range of teachers' obligations – to the discipline, to individual students, to wider society and to the institutions of schooling – are fully recognized and integrated into our models of enquiry to interact with the full implications of teachers' and students' identity relations with those contexts. A challenging task, but one that will benefit from this lucid exposition of why such an approach is likely to prove fruitful.

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Chapter 18*:* 'Rigor and equity by design: Locating a set of core teaching practices for the science education community' by Mark Windschitl and Angela Calabrese Barton

The science curriculum has been marked by deep epistemic problems revolving around the question: How best to represent the principles and practice of science in the curriculum and hence through teaching? This chapter goes some way to provide novel, and importantly, detailed approaches and strategies. These underpin social and political currents instantiated in the epistemology and practice of science but often passed over in curriculum policy, assessment and consequently teaching. Core to 'ambitious teaching' is the aim 'to support all students in engaging deeply with science in equitable and rigorous ways' (1099). Equity comprises the participation of all students within the science learning community, and rigour is characterized broadly as the depth and quality of learning supported by the teacher in authentic science activities.

This chapter presents grounded models and exemplars of activities that reflect rigour and equity in teaching science. The authors are also sceptical – rightly, in my view – of inquiry and discovery-based learning. There are many well-researched insights into teaching with equity and rigour, and the role of identity work. There are, however, some areas where I found the chapter uneven. First, it is very much based on US practice and educational thought, and could have taken a more global view of practice and pedagogic ideas. Second, it could have problematized and critiqued the links between school teaching of science and science as practised both by scientists and through the community more generally. Third, for all its strengths in analysing and exemplifying rigour and equity in teaching science, the chapter has the sense of having been written by authors who had two different though overlapping priorities. Nonetheless it raises many questions, explores science pedagogy in depth and is highly recommended for practising teachers and researchers willing to re-examine their own practice.

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Chapter 21: 'Teaching and technology: New tools for new times' by Barry Fishman and Chris Dede

While the transformation of teaching and learning through technology has been a core thread in the discourse of educational change for over a century, accounts have largely focused on the characteristics of particular technological innovations. In this chapter

the authors offer a far more insightful overview of the potential of digital technologies by presenting an exploration of the broader affordances of these technologies and their relationships with the processes and institutions involved in education. This overview is subsequently situated within the wider political and economic contexts of which they are a part. The work skilfully avoids a techno-determinist approach and instead rightly seeks to consider technology-related change with respect to the dramatic developments the last decade has seen in the relationship between the citizen, society and digital systems. The strategic approach to the issue supports the reader in gaining an overview of the key challenges and opportunities offered by digital technologies and the ways in which they might be realized.

While the authors take a strategic approach to the issue of technology-related change, the work contains ample and well-referenced discussions of specific technological themes and their potential consequences for change with respect to curriculum content and structure, pedagogy, the roles of teacher and learner and assessment. They explore the possibilities of Web 2.0, the rapid emergence of online learning environments and the opportunities offered by games and simulations, in each case focusing on the implications for teaching and learning rather than on the details of the technologies themselves. Each theme is explored in detail, offering compelling arguments that challenge the notion that digital technologies will automatically lead to better education.

The chapter is characterized by a comprehensive and comprehensible discussion of topics that have too often been presented with passion but with less balance and rigour than in this work. Of value to both novice and more experienced readers, the chapter might usefully be made required reading for all policymakers in the field of education and digital technologies.

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