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## ***Review Article***

# **Guiding the practice of constructivist teaching**

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**The Comprehensive Handbook of Constructivist Teaching: From Theory to Practice**, by James Pelech, Charlotte, North Carolina, Information Age Publishing, 2010, pp.225, \$45.99 (paperback), ISBN 978-1-60752-374-1.

My initial impression of *The Comprehensive Handbook of Constructivist Teaching* (which, to be concise, I refer to as *The Handbook* henceforth) was one of disappointment. This was not due to any inherent flaw in the book, which I will suggest below has much to recommend it to a particular audience, but rather due to a mismatch between my expectations and the book itself. It did not look like my mental notion of a Handbook. I had just read a Handbook on conceptual change – a vast work with contributions from a wide array of scholars who have worked in that area (Vosniadou, 2008) – that fitted my notions of a Handbook. *The Handbook* I had to review here was basically the work of two people: the author James Pelech and his editor Gail Pieper (who was accorded equal status on the cover). The Handbook was a slim modest book, unlike the heavy, unwieldy volume that I had expected. So, I almost felt cheated. I had hoped for a thick book offering the distilled knowledge of the World's experts on constructivist teaching, and instead I was sent one teacher's advice.

My purpose in sharing this experience is neither to criticise Pelech and Pieper for some form of 'trades description' infringement, nor to advertise my own short-

sightedness and inflexibility of thinking. Rather this episode can act as allegory for much that happens in the name of teaching and learning. Teachers and students (like authors and readers) enter into a relationship that is based upon some sense of shared purpose, about some subject matter that it is considered students (or readers) would benefit from learning about. However, often the purposes are not shared as much as we might hope and, moreover, so often communication is impeded by teachers and pupils approaching a topic with different initial starting points and understandings. And this reality of education is part of the rationale for constructivist approaches to teaching. For example, in science education it has been found that when classes study topics such as, light, plants, burning, the solar system - or indeed, just about any topic - the students are likely to come to lessons already having a wealth of ideas, but often including many that are at odds with those to be taught (Taber, 2009). Moreover, they will commonly already have meanings for many technical terms - energy, forces, pure substance - which often overlap with the teacher's meaning without actually matching.

The issue then is that teaching which is based on a teacher's careful, logical exposition of a topic becomes highly problematic. Each student makes sense of such teaching rather differently, depending upon prior knowledge, existing alternative conceptions ('misconceptions'), personal meanings for technical terms and so forth (Taber, 2005). Each learner can only construct new knowledge from their existing starting point - which is unlikely to match what the teacher may hope for, or expect. Constructivist teaching is teaching which is designed to acknowledge that learning is a process of individual construction of personal knowledge, rather than an assumption that the teacher's knowledge of a subject can somehow be transferred or copied into the minds of the students in a class.

### **'Constructivisms'**

And what applies to school and college learners, applies equally well to professional learners such as teachers and academic scholars. So my outline of constructivist teaching above is neither complete, nor even definitive. The term constructivism has been used to describe a wide range of different ideas and approaches - to learning, to teaching, to research, etc. This makes Pelech's intention of offering a comprehensive handbook a rather brave one. Even when restricting consideration to 'constructivist teaching', as Pelech does, there is no one agreed understanding of what this means.

Most significantly, where constructivist teaching may be presented as an education panacea by some, it is also a major target of many commentators - who see it as a highly dubious notion that undermines effective education, and provides a rationale for laissez-faire (and perhaps lazy) teaching that does not require any specialist knowledge. Clearly Pelech is in the former camp, but there are many who would disagree.

Another point of much contention would surround my reference to the individual learner personally constructing knowledge. Many of those who see themselves as constructivists stress the social aspects of classrooms and see learning as largely a social process. Indeed some see knowledge itself as socially constructed, and do not consider that it is appropriate to think in terms of knowledge residing in individual minds. Pelech largely ignores these arguments – which is probably a wise decision in writing a book directly largely at teachers looking for practical advice – although inevitably *The Handbook* offers implicit stands on such matters.

### **Constructivist Instruction**

As suggested above, there have been some widespread attacks on constructivist instruction suggesting it is some kind of post-modern, liberal approach with poor unpinning. Constructivist and related approaches have been said to have been shown to fail (Kirschner, Sweller, & Clark, 2006), and there has been a wide debate on the issue, where scholars have taken very different views (Tobias & Duffy, 2009). Ultimately, much of the debate was hollow because the critics and the champions of constructivist instruction were criticising and championing very different things (Taber, 2010).

For the critics, constructivism was associated with minimal guidance: that is, that as constructivist teaching focuses on the students building up their own knowledge, the teacher's role is to set up an open-ended learning experience, and than not interfere too much as the students got on with learning.

That notion of teaching has very little in common with what most supporters of constructivist instruction are suggesting. It certainly is *not* the kind of teaching that Pelech is proposing in *The Handbook*. However, this underlines that the whole notions of constructivist teaching is itself open to so many alternative interpretations that the label itself may become effectively meaningless. No doubt many potential

readers will be attracted to Pelech's book because it uses the label 'constructivist'. If those readers are classroom teachers looking to develop their own practice, then I think they will generally be pleased with the book. Many other potential readers may be deterred from considering the book because of the same label. That is a real shame, as there is much in *The Handbook* that is likely to be useful for any classroom practitioner.

### **A guide to good teaching**

So that leads to the question of what kind of constructivist teaching is being proposed in *The Handbook*. Arguably, it is simply good practice. Pelech sets out to discuss many aspects of classroom teaching and learning which will be familiar to experienced practitioners, and that are widely recognised as elements of good teaching.

A key point, and one which is central to most notions of how constructivist ideas should influence pedagogy, is that readers are encouraged to make learning as 'active' as possible. Students do things in the classrooms Pelech proposes: things other than simply listen, copy notes and drill. That does not seem very revolutionary – this is what teachers have been told should happen for decades. Yet, actually, there is something of a reactionary movement afoot today (especially, I would suggest in the US) which argues that actually drill and practice are effective and enjoyed by learners, and that a key problem with constructivist approaches is that they eschew 'direct' instruction. Direct instruction, means the teacher who has the knowledge, telling the students the answers rather than letting them struggle to reinvent wheels.

Teachers of course do, generally, hold the canonical knowledge that students are expect to acquire during education - or at least personal representations of that public knowledge which are judged near-enough models (Taber, 2009) – and it is certainly true that asking individual students to make anew all the great discoveries of generations of scholars is an unrealistic (and largely pointless) task. After all, the whole rationale of formal education would seem to be to allow cultural transmission of knowledge so that society can make progress, with each of us standing on the shoulders of many giants.

So the purpose of constructivist teaching, or simply good teaching, is to find effective ways to help learners acquire the skills and knowledge set out in the curriculum in

efficient ways. Efficient here meaning, in part, much quicker than if they were left to their own devices; but also in ways that preserve or improve the learner's attitude to both learning and the subject matter. Most teachers would surely rather teach half the subject matter to students who were genuinely enthused and motivated to learn more; than complete the curriculum only by producing students who were counting down the lessons till they could say goodbye to the subject.

It is certainly a nonsense to think that there are not times, many times, when the most effective way of teaching is to tell students things. The skill of the teacher is in knowing when it is more productive for all concerned not to simply present the answers. There is seldom likely to be much value in setting pupils a research task of finding the name of the fifteenth US president or the atomic mass of sulphur or the date of united nations declaration on human rights. But these are facts, and much of education is about more demanding learning tasks. It might seem strange, for example, to set students the task of rediscovering statistical techniques that have been developed by professional mathematicians. It would certainly be quicker to simply present the techniques, especially as students seldom get close to the right answers. However, research has shown that students who are first set problems which require particular (untaught) statistical techniques for their solution, even though they are unlikely to produce technically correct solutions, actually go on to learn those techniques better than students taught in a more traditional approach. The statistical techniques are presented by the teacher using 'direct instruction', but the previous problem-based task prepares the students to better understand the statistical ideas, and so better retain knowledge of them (Schwartz, Lindgren, & Lewis, 2009).

Given this kind of scenario, Pelech's book offers a great deal to support the kind of constructivist teaching that works, i.e. advice for the teacher who intelligently decides what and when to 'tell', and when to set learners tasks based upon more active learning approaches such as problem-based learning. The 'secret' of good teaching then is developing sequences of learning episodes which shift between more open-ended, creative tasks, and periods of direct-instruction honed for minds that have been prepared by the judicious choice of more open-ended activity. This does not mean sometimes using constructivist teaching and sometimes teaching traditionally. Rather effective constructivist teaching is about whatever helps the students to effectively construct knowledge, and that will be telling them answers at those points in the learning sequence when that is appropriate (Mortimer & Scott, 2003).

## **A menu of approaches**

Constructivist teaching, then, is about drawing upon a tool box of teaching techniques to develop effective programmes of learning experiences. In this regard, *The Handbook* is very strong. Pelech offers readers a wide array of ideas for building into their teaching. Most of these ideas are not new, and many experienced teachers may find they are already using much of what is discussed here. So, for example, asking students to work in pairs exploring ideas and then using various ways of sharing ideas around a group are fairly standard techniques. However, most will probably find some new nuggets here. Probably the greatest potential for *The Handbook* is with new teachers who are just starting out in the profession. This book could be quite invaluable here, because of its eclectic mix of ideas.

One feature that many readers will find a strength is that Pelech does not just suggest these techniques in the abstract, but rather he contextualises them in real teaching/learning situations. This allows the reader to see just how such ideas might work, and to get a feel for how they might be built into real lessons. A slight gripe is that the range of contexts is not that broad, with mathematics perhaps featuring rather heavily. This is an area where a single authored book is likely to be limited: a more authentic (a quality much valued in the learning episodes described here) comprehensive handbook might have been multi-authored by teachers working at different educational levels across a full range of curriculum areas. Yet, given the fact of a single-authored volume, Pelech makes real efforts to show that the ideas discussed are widely applicable.

The range of ideas offered here includes notions about learning styles and multi-model learning, alternatives to traditional note taking, the use of drama-based activities, overcoming the common limitations of Powerpoint presentations, and so much more. The discussion of such a range of approaches could easily become incoherent and little more than the literary equivalent of a pedagogic grand tour. However, it is to Pelech's credit that his book retains coherence and its message retains integrity, despite its panoramic approach.

## **From theory to practice?**

In part the book is successful because Pelech seems to recognise the point made above, that a useful notion of constructivist teaching is little other than good teaching,

i.e. that the basis of constructivism is not what the teacher or students are doing at a particular time, but rather than the overall teaching/learning sequence is designed to work in accord to what we know about human learning. Just as important, the author knows that when advising teachers on what to do, it is important to write for understanding, just as he would have his readers teach for understanding.

The subtitle of Pelech's book is 'From Theory to Practice', and at one level there is a great deal of theory referred to in the book. To revisit my initial disappointment, there is little of detailed exposition, and there is little of critical evaluation. But in the present context that seems appropriate. There is also only a limited discussion of research studies of pedagogy in practice. What *is* included is a series of vignettes of educational and psychological ideas and thinkers, which support the approaches being advanced in the book. The usual suspects have all been rounded up: Piaget and Vygotsky, and the latter's ZPD; Bruner; Bloom with his taxonomy, Gardner with his intelligences; James & Dewey, and many others make brief appearances. This material is interesting, and - if necessarily mostly brief - it does show that the ideas presented are based on long-standing and largely well-respected thinking.

This allows Pelech to set out a series of constructivist principles that can then be used to justify the eclectic range of material drawn upon in the book. Yes, problem-based learning fits. Clearly metacognition is highly relevant. Learning styles are going to be important. And so forth. Pelech also uses a set of metaphors or slogans to drive forward his argument. Particular activates are said to allow learners to captain their own ship, or to provide a different view akin to twisting a kaleidoscope. I personally find these devices a little wearisome after a while. However, if the main target audience of the book is those less familiar with constructivist thinking and various techniques to encourage 'active' learning, then I can see they might work well for some readers.

Pelech does not strongly engage with the personal vs. social constructivist arguments, and this is probably wise in a book of this nature. My reading of *The Handbook* would suggest that Pelech is a personal constructivist (happy to consider individual learners as constructing personal knowledge that is in some sense stored in their minds), but one who recognises the affordances of the social context of the classroom in supporting such knowledge construction, and in particular the value of peer interaction. This is probably the stance which would make most sense to most of the teachers who might read the book.

## **Technical details**

Despite a few places where there seemed to be typographical errors or unclear writing, *The Handbook* is generally very readable. It is set in a clear typeface, with well structured short chapters, and plenty of figures and formatting devices (headings, bullet points etc) to make for an easy read. It is a little repetitive in places, perhaps mostly to emphasise key points. (Although using the same examples to the extent of repeating a quotation about the second world war seems excessive.) The book also seems heavily focused on the US context, which is a real shame because the key messages here are about the context of human academic learning: in whatever educational system worldwide. There is a useful contents list, and a very helpful list of references that offers much scope for the interested reader to find out more. Unfortunately, and it is a serious omission, there is no index. This is a real negative, for I can imagine readers wanting to look up particular points, and finding no easy way to locate key ideas. The failure to include a decent index always makes a book so much less useful in the long term: if there is a second edition, I hope Pelech insists on an index being added.

## **Overview**

I remain disappointed that Pelech's books does not deliver what I hoped *The Comprehensive Handbook of Constructivist Teaching* should deliver. This is not a scholarly research handbook about constructivist teaching. That is a shame for one reader, but it will be more widely appreciated for that. It is arguable whether this kind of book is best called a handbook; and despite its breadth, 'comprehensive' seems an inappropriate claim. But as a guidebook to good teaching, this is a volume that has a great deal to offer to teachers, and especially to new teachers or those struggling to move beyond traditional lecturing approaches. It would be a good thing if more teachers could adopt the approaches offered here, based on the kind of grounding of rationale that Pelech offers. For that reason, I hope this book is widely read. Perhaps teachers who do adopt ideas from the book will feel they are being 'constructivist' teachers, and perhaps their colleagues will consider them so. Then again, perhaps not. But if they follow the guidance here, they have a good chance of being good teachers, and hopefully recognised as such.



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