Foreword[1]

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Teaching is a profession that deserves some attention. We stopped conceptualising teaching some time ago when we set out to shift the focus onto students - how they learn, and what they need from teachers. We stopped referring to 'instruction' and made the axial shift to the opposite perspective to conceptualise the process as being about 'learning', and what teachers do as 'facilitating learning'. That's a good way to think about what we as teachers do, because the whole point is to help individual students to develop their full potential.

The opportunities afforded by digital technologies brought the focus even more clearly onto what students are doing as they interact with each other online or with a program. The role of teachers is to design that interaction: they place themselves within it sometimes, but are also removed from the learning event itself when the interaction is with a program. This takes some considerable specialist expertise, which means the teacher can become further removed from the student, their teaching mediated by teams of specialists of different kinds, by technological devices and systems, by distance, and by time.

This book is about a field that puts the teacher back in the driving seat of the process of learning in formal education. The idea of 'Learning Design' is to acknowledge that 'facilitating learning' is a gently restful term that disguises an immensely complex undertaking. It reconceptualises the teacher as designer of the process by which students learn.

The researchers in this field set themselves the task of working out what exactly it is that teachers do when they are most effective, and then working out what kinds of tools and concepts can be devised to help all teachers to be similarly effective. In *The Varieties of Religious Experience*, William James pointed out that the proper study of psychology in this context is the most religious man in his most religious moment. In this field we study the most effective teacher in their most effective moment.

This work has been going on for some time, and all the chapters here testify to how difficult it is. The field is called 'Learning Design' because it is about how we *design for learning* – a subtle point that is often picked up here. Strictly speaking, we cannot 'design learning' as the act of learning is what the learner undertakes; we can only design the means by which there is a good chance that learning will take place. And as we think about how to design for learning we discover how difficult it is to capture that complexity of structures, concepts, layers, levels, interactions, processes, products… every chapter will take you through some part of this vast domain, and chart what it takes to capture its essence.

The book begins with the idea of capturing music in the form of a written notation as a good analogy for what Learning Design is trying to do. It is hard for us now to imagine the conceptual challenge that developing musical notation must have

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presented to early musicians - of how to capture the energy in those varied and delightful sounds as mere marks on static paper. It is so important to get the notation right.

Other disciplines have faced the same kind of challenge. The history of mathematical notation illuminates the power that good notation conveys – to be able to express any size of number using just a few characters, or to be able to think about a number at all, as an abstraction that can apply equally to eggs and tractors – these are powerful tools for thought. The history also demonstrates the risk of getting it wrong. Imagine trying to do multiplication with Roman numerals (Ore, 1948).

The task set by Learning Design is just as challenging. How can we capture and record the complexity of what goes on when a teacher sets out to change the way the learner is able to think about the world? Students in formal education are learning to see the world in the way expert thinkers saw it after thinking and practising for a very long time, and then use and critique those concepts. Teachers have to explore the many ways of approaching this difficult task, and gradually develop the ideas that work best.

The value of the notation idea is that a formal representation affords the transmission of good ideas in a way that is more powerful than the written word. The teaching profession sorely needs to be able to do this now. We struggle to incorporate an abundance of new technological possibilities. In the past few decades teachers have been blessed with the digital equivalent of the inventions of writing, the slate, the printing press, the book, the newspaper, the pamphlet, the poster, the penny post, the blackboard, the notebook, the noticeboard, the telephone, radio, television – all of which took centuries to be absorbed by education – now bundled into one small object, the networked computer, that changes everything.

A formal representation as a means of sharing effective teaching ideas is important. If a teacher works out a good way of using a new technology then that new knowledge must be communicated and shared for others to adopt, adapt, and improve, and then share again. Learning Design takes on the job of working out what kind of formal representation would enable the great ideas of teaching to be shared so we can build that community knowledge.

What would count as articulating a particular pedagogical idea, that is, a *learning design*? Is it instructions to the students? Instructions to the teacher? How far can you specify what the teacher does? It is surely impossible to capture the great teacher's charisma, the agile responsiveness, the way they can make use of a student input on the fly, or come up with the spontaneous anecdote to fit the moment. Is so much lost in notation that it is scarcely worth the effort? But we could see the learning design as education's version of the great score, or play, or recipe, that can be reinterpreted many different ways. Equally it could be seen as similar to medical procedure, or the experimental design that enables other scientists to replicate similar outcomes.

Teaching is neither creative art (it is not the case that anything goes) nor scientific inquiry (it does not develop new knowledge of the world); it is about generating new knowledge in others. It is fundamentally an iterative design process, working in a chaotic environment where a principle that works one day may not work at all well

the next day, nor even with the next class. The field of learning design is the only area of systematic inquiry that is attempting to make a bridge between an understanding of the complexities of teaching and effective professional practice.

We may accept the potential value of 'capturing pedagogy' but how is it to be done?

The great pedagogic idea usually comes from some specific situation that challenged the teacher to come up with something special. So it is very important to maintain that source of inspiration. From the early SOURCE project (Software Use, Reuse and Customisation in Education) mentioned in Ch 1, and through the strand of thinking that followed, the dominant approach was to use the successful specific instance, abstract from that to the generic form, and reuse the form to customise it for a new specific instance. For example, rather than trying to develop a generic role-play design, we use the approach in Ch 4 (Walker and Kerrigan) to adapt a specific successful instance to a generic form that can be transmitted to others to reuse and customise for many other discipline areas.

Do we yet have a terminology and format that is adequate for expressing the follow-through from one activity to another, which is part of the essence of a particular pedagogy? In collaborative learning students consult resources throughout the process, whereas for inquiry-based learning they more typically begin with reviewing existing resources. Is this like the sonata vs the fugue? The learning sequence is essentially time-based, about activity, and about ordering that activity, and different ordering results in a different learning experience and outcome. The 'predict – observe – explain' sequence (see Ch 7, Bennett, and Ch 11, Bower) affords a very different learning opportunity from the 'teach – practice – feedback' sequence. Can a formal representation of Learning Design capture and visualise this difference more effectively than just in text?

These are some of the issues of capturing pedagogy that are explored in these chapters. Two others form a common bond between them all: planning and sharing,

The claim is that Learning Design aspires to pedagogical neutrality, and many different pedagogies can be expressed as learning designs. But it does demand a plan. The teacher who prefers to be entirely spontaneous would have no use for learning design. That is probably a boundary of its neutrality. Branching, options, parallel tracks, can all be aspects of a plan. A pedagogy that has no plan is not exactly excluded. You could still describe that as a design for learning, but the plan would be a little thin.

So does the importance of 'teaching in the moment' weaken the idea of Learning Design? Not really. It is better to have a plan than not. There is a military analogy there, certainly a jazz one. Or closer to home, the Japanese approach to Lesson Study (Fernandez, 2002), which explicitly acknowledges that plans change in practice, but that reflection and redesign are all part of the process. The consensus is certainly that a plan is better than no plan.

As to sharing, will teachers actually do it? In many ways they do already. The web is one extraordinary example. Academic scholarship is another. This is how we advance knowledge in any domain, so it is surely how we need to do it if we want to build our community knowledge about teaching – especially given the added complexities of

doing it in a world where the physical, social, intellectual and virtual spaces are mixed.

The detail in this book demonstrates the extraordinary complexity of the teaching-learning process, and the sophistication of the professional skill of teaching. The digital world ratchets up the complexity as well as the demand for a new range of professional skills.

The academic teaching community is in urgent need of help with this new world of digital affordances. Teachers have had no help with making this transition – somehow they are expected to do it alongside the day job of teaching, research and a mass of bureaucracy. They deserve the attention these pioneers of Learning Design are giving to the problem of building our community knowledge of how to optimise designs for learning in the digital age. This book makes a fundamental contribution to the great challenge of describing and sharing effective teaching ideas.

Reference

Fernandez, C. (2002). Learning from Japanese Approaches to Professional Development: The Case of Lesson Study. *Journal of Teacher Education, 53*(5), 393-405.

Ore, O. (1948). *Number Theory and its History*. New York: McGraw-Hill.