

## **Innovative Curriculum**

Bruce Wilson  
Chief Executive Officer  
Curriculum Corporation

Educators around the world mostly agree about purposes. We all want students to achieve higher order skills. We all want students to be creative, analytical, entrepreneurial, self-directed and enquiring. There is nobody arguing in favor of lower order skills. There is no-one who suggests that knowing the names of all the capitals of countries in this region is more important than skills in analysis and synthesis. And we all want those capacities to be acquired by all students. None of us wants to perpetuate a system in which some groups of young people do dramatically worse than others.

So the debate is not, essentially, about purposes. We agree about purposes. But we disagree about how we can put in place an education system which delivers on those goals.

A simple summary of the goals I outlined above is this: we want all students to gain deep understanding. We can call that outcome by other names: higher order skills, transferable skills, generic skills, key competencies. Whatever we call it, that is what we all want for young people.

I assume that when the title of today's keynote presentation speaks about 'the learner-centered approach', what is meant is a commitment to ensuring that every child gains the benefits of schooling. Education needs to be learner-centred if it is to achieve that outcome because every child is different, so we must focus on the particular needs of each child.

But learner-centred also means something else in the discourse of curriculum: it means a curriculum and, especially, a pedagogy which is the opposite of teacher-centred. It means curriculum policy and classroom practice which enables young people to take some responsibility for their learning, increasingly to manage their own learning process, and even to make some decisions about what they learn.

These two meanings of 'learner-centred' come together, as I will show a little later. In particular, they come together around the idea of deep understanding.

The title of this presentation on the program is ‘Innovative Curriculum’. So what kind of curriculum, innovative or otherwise, will enable us to achieve deep understanding for every child, and to do so in a way that is learner-centred in both senses of the term?

Let me start by saying what domain I am talking about.

Curriculum includes such matters as:

- Curriculum policy documents, such as papers prepared to indicate to the public what values underlie the curriculum, or the relationship of the curriculum to the economy.

- Documents specifying the curriculum, including competencies or outcomes, curriculum content and advice on teaching and learning. All education systems have some kind of curriculum framework.

- Support materials, such as advice on course development or sample units of work, and professional development activities. It is an essential part of curriculum reform and improvement to provide resources which will assist teachers and schools in taking up the challenge of the new curriculum approach.

Curriculum, as the term is used around the world, often also refers to assessment and pedagogy. Geoff Masters will speak about assessment, so I won’t, but pedagogy includes such matters as:

- Policy documents on pedagogy, classroom organisation and teaching and learning.

- The delivery of the curriculum, including the conduct of classroom-based assessment activities, usually for formative purposes.

- Advice, support and professional development designed to assist teachers in improving their teaching.

In passing, I should note that one of the essential characteristics of good reform is ensuring that the ‘key message systems’ in education are aligned. In terms of delivery of curriculum, the key message systems are curriculum, assessment and pedagogy. The Australian experience is that the alignment of these key elements of curriculum is essential if students are to gain maximum benefit from any reform program

In all three areas, the actual practice of teachers and schools is critical. While education systems can establish frameworks of policy, advice and support, it is often the case that these are largely ignored or

substantially modified in the classroom and the school. This is the case especially when reform programs fail to achieve their intentions.

Most education systems around the world have undertaken programs to reform curriculum, usually including assessment and pedagogy, in the past 20 years. Some systems have made several attempts at such reform. In virtually every case, they have had curriculum policy and framework documents which have claimed to support a more open, creative and inclusive approach to curriculum. Many such documents in recent years seek to shift to an outcomes (or competency) basis to curriculum, adopt more student-centred methods, base learning more on real-life examples, use problem-solving and encourage active forms of learning. But in many cases the evidence of change in the classroom is much less clear. While there have been examples of outstanding practice, there are many classrooms where not much has changed. Many teachers still use a narrow range of teaching approaches, focus on superficial sequences of content rather than deeper conceptual learning and draw on artificial examples and passive student performance.

Why is this so? Why have many teachers not moved to the styles of teaching and learning supported for some years now by curriculum policy?

One reason is that, even within curriculum documents, the message is sometimes blurred. Curriculum discussion, for example, is often characterised at one level by a focus on improving student learning, engaging students as individuals in the learning process, assisting teachers to teach in more creative and inclusive ways, opening up teacher understanding of different learning styles and developing effective pedagogy to meet the needs of those learning styles. But curriculum documents are often also concerned with discipline-based structures for specifying curriculum content, including detailed sequences of particular knowledge and skills, and it is not always clear how the different emphases are expected to work together. As curriculum workers, we often hold apparently contradictory ideas in our heads, and these appear in our written and spoken statements. This occurs because we find it difficult to move away from current practice, even when we have decided to adopt a different conceptual model. So in Australia, approaches based on outcomes or competencies are sometimes only the old content based approaches with a new coat of paint.

A second reason is that change is always difficult to achieve in the classroom. Teachers work under difficult circumstances. Their students

are sometimes unwilling participants in the life of the classroom. Changing the patterns of classroom activity, or the focus of the curriculum in a Year 9 science class can be a daunting task for a teacher who is already finding teaching a stressful and demanding job. I think we often expect far too much of teachers, and ask them to achieve improvements in their practice which are beyond their capacity.

But I think the most important reason why reform is slower and less effective than we would like is that the key message systems of the curriculum are not aligned, and are sometimes even in conflict. Our communications about curriculum, assessment and pedagogy send different and contradictory messages to the people who are supposed to implement them.

Curriculum and assessment are often located in different units of the responsible agencies, or even in separate agencies. Institutional frameworks have a momentum of their own. Each manager has responsibilities for the whole education system, but our focus is often on our own part of the system, the part for which we have direct responsibility. We tend to position other divisions as obstructions, or at least as irrelevant to the achievement of our own goals.

In addition, people who work in curriculum and people who work in assessment have very different backgrounds and experience, and they have distinctly different operational focuses. Curriculum managers and staff are mostly concerned with inputs, with how the curriculum is structured and delivered, and with how teaching is conducted. They often have a strong focus on breaking down formal practice and introducing diversity and creativity into the curriculum. They are usually more concerned with how we will teach the curriculum, and less concerned with how we will know whether students have learned it.

Assessment personnel tend to have a quite different orientation. They have a primary focus not on the delivery of the curriculum, but on student learning. They see the importance of relatively standard ways of approaching learning, and they know the difficulty of measuring learning which is diffuse and varied. They often come from a quantitative background, and they are concerned partly with technical questions about the reliability and validity of assessments. They are also often concerned about the practical and financial aspects of undertaking assessment in

contexts which are diverse in terms of student learning, teacher skill and geographic dispersion.

So the prejudices and work circumstances of curriculum and assessment people are often in conflict. They seek contradictory circumstances as a condition for success in their respective areas of responsibility.

The result of this set of inherent contradictions is that the messages sent by curriculum and assessment documents (and people) are consistently in conflict. It is in the nature of the work that we all do that this should be the case. And unless we can work together to overcome these differences, most reform programs will be slower, more difficult and less successful than we would hope.

I want to return to the main issue now, identifying what kind of curriculum gives us the best chance of achieving deep understanding for every child. I want to go straight to the heart of the matter by making two claims about curriculum documents:

- Firstly, our curriculum documents must limit the curriculum to a much smaller volume of content than is usually regarded as necessary
- Secondly, our documents must specify particular knowledge and skills as essential

Why are these important?

The first of these arises because of time limits. There is now a body of research concerning the time it takes students to achieve deep learning of specific skills and concepts. This consistently demonstrates that virtually all students can learn complex concepts and skills. Indeed the research is now suggesting that young people can understand much more complex concepts than was previously thought. But the research also shows that it takes a much longer time than we normally allow. There was a fascinating study conducted in the early 90s about the capacity of all students to learn difficult concepts in science. The study found that effectively every student could learn complex concepts: most students in Year 8, for example, were able to learn the difference between heat and temperature on a conceptual level. But it took 13 weeks of dedicated teaching in thermo-dynamics concepts.

A similar example is in the area of physical education where research has established how long it typically takes a student to master a

particular skill at a particular level – for example, to dribble a ball in basketball, to move yourself into position to receive a catch, or to learn to throw over-arm. What the research demonstrates is that apparently simple skills like this take an extended period to learn, and that under current curriculum structures, for many children the time available is not sufficient for learning to occur.

The consequence of this research is that if we seek deep understanding, we must dramatically reduce the amount of content that is covered in school. But in almost every national jurisdiction I have examined, the current frameworks cover vast amounts of curriculum territory. In many cases, notably in some Australian states and some other Western jurisdictions, the documents then exacerbate the problem by imposing no limits on content. If we are serious about deep learning, we have to specify a volume of material which is small enough to permit deep learning to occur.

And the second point is that must specify particular content. I say that because of what is now emerging about the relationship between curriculum content and deep understanding. There is now a very substantial and robust body of research which demonstrates that effective higher order learning is focused on specific areas of understanding, and that it requires conceptual understanding, factual knowledge and procedural facility. The road to higher order skills passes inevitably through specific knowledge.

That body of research is summarised and analysed in a most comprehensive review of the literature on learning. It was conducted by an eminent committee chaired by John Bransford and Ann Brown, and supported by the National Research Council of the United States. The report was published in 1999 under the title *How People Learn*.

The report offers powerful confirmation of the idea that transferable, higher order learning, what I am calling deep understanding, is inseparable from a well-organized body of content knowledge which reflects a deep understanding of specific subject matter. According to the report, higher order capacities such as problem solving and analysis depend on proficiency in particular subjects. Higher levels of skills and understanding are not distinguished by general abilities or strategies. People with expert capacities have acquired extensive knowledge that affects what they notice and how they organise, represent and interpret

information. Expert teachers, according to the report, have a deep understanding of the structure and epistemology of their discipline, combined with a knowledge of the kinds of teaching activities that will help students come to understand the discipline. The report demonstrates that experts' abilities to think and solve problems depend strongly on a rich body of knowledge about subject matter. This is not a list of disconnected facts, but a body of knowledge organised around concepts and patterns. Most critically the research demonstrates that transfer of skills depends on the degree of mastery of the original subject.

So the real challenge we face at the level of policy is to articulate a framework for History or Chemistry or English which sets out a limited but essential body of knowledge within those subjects, and the kinds of higher order skills which are associated with that body of knowledge.

What this suggests is that if we really care about deep learning, we should focus much more closely on less, but very specific, curriculum content. There is a good deal of teaching now which seeks to cover large conceptual territories in a short time, or which focuses on superficial mastery rather than deep understanding. That is, in part, because as teachers we have a relatively weak grasp of what deep understanding might mean. But it is also because current curriculum documents mostly assume an approach aimed at short term superficial mastery of a broad range of content, rather than long-term deep understanding of a limited but essential territory.

This research also suggests that our wish to enable every child to achieve higher order skills, or what I am calling deep understanding, should not lead us to focus directly on generic skills. Innovative curriculum in some Western jurisdictions, and at many curriculum conferences, has come to mean things like learning how to learn, creativity, generic communication skills, self-managed learning, or broadly framed ideas about thinking skills. Documents in some jurisdictions include frameworks of generic skills, which are taken to have an independent life and to require direct teaching attention. What the research indicates is that these characteristics do not arise out of abstract activity, or require direct attention in the absence of specific knowledge, but rather are developed through attainment of knowledge and skills related to specific domains of knowledge, and that it is this domain specific study which leads to the kinds of higher order skills and understanding which are associated with the particular domain, but which then enable transferability.

Now the title of this session is ‘Innovative curriculum’ and what I have just said does not sound very innovative. But in fact it is, for three reasons:

- Firstly, curriculum documents have traditionally been good at identifying sequences of content knowledge, and lists of domain specific skills. They have even been reasonably good in recent years at identifying lists of generic skills. But they have not been good at identifying those higher order skills which are associated with specific domains. That is an innovation, in most jurisdictions, which is essential if students are to achieve deep understanding.

- Secondly, we need to take seriously the injunction to reduce the volume of content in our curriculum documents. I doubt that there is a single curriculum framework document, or syllabus or course outline in the world which is sufficiently economical about the content it includes. Every document I have seen includes substantially more content than students could learn in depth. To give you a sense of what I am suggesting, I think most curriculum framework documents would need to reduce the content covered by about half or more to support deep understanding.

- And thirdly, if we make these two changes, we will still achieve nothing if the other elements related to curriculum do not change. Unless assessment and pedagogy change, students will go on gaining a sketchy acquaintance with the whole of human experience, rather than a thorough, profound, detailed and operationalised understanding of some key ideas and skills which lead on to deep understanding. I know that Geoff Masters is speaking about alternative assessment, so I won’t address that, but I do want to say something about pedagogy.

This is the point at which I want to return to the idea of a ‘learner-centred’ curriculum. I said earlier that there were two meanings of ‘learner-centred’: firstly, a commitment to ensuring that every child gains the benefits of schooling; and secondly, an approach which enables young people to take some responsibility for their learning.

It is around changes to pedagogy that these two ideas come together. The curriculum is simply the framework within which teachers work. I have noted some critical elements of the curriculum, but it doesn’t matter how good our documents are unless teaching is up to the task. Without appropriate pedagogy, many students will fail to gain the benefits of schooling, and most students will gain less than they should.

So what is appropriate ‘learner-centred’ pedagogy? It is a pedagogy which is learner centred in both senses: it seeks high levels of



achievement for every child, and it offers young people the chance to take responsibility for some significant aspects of their own learning.

The reason for offering young people some control over their learning is not so that they can choose what to learn. It is to enable us to meet the needs of every student for deep understanding. We are now very familiar with the idea that all students are different, that they learn in different ways and will find different pathways to common outcomes. But no teacher on earth can design individualised learning pathways for every child which reflect those differences. The only solution to individual difference is individual responsibility.

As it happens, this idea is also supported by learning research. This suggests that along with a range of teaching strategies, one key factor in student achievement is the adoption of approaches in the classroom which enable students to take responsibility, to make some decisions, to act and see the consequences of their actions. So pedagogy which is learner-centred in offering students some responsibility for their learning is also learner centred in offering a better chance of achieving deep understanding for all students.

So if I am to summarise my view about innovative curriculum, it is this. Innovative curriculum has three characteristics:

- Curriculum documents will specify both the sequence of knowledge and skills which make up each domain, and those higher order skills which are characteristic of the domain.
- Curriculum documents will require far less content than is the norm in all current documents.
  - Our approach to teaching and learning will focus on giving students more responsibility for their learning.