Australia's adoption of outcomes based education – a critique

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Background

Over the last year or two, Australia's adoption of outcomes based education (OBE), sometimes known as Essential Learnings or outcomes and standards based education, has been at the centre of a good deal of public scrutiny and debate. In Western Australia, during 2006, the planned introduction of OBE into years 11 and 12 led to a strident and vocal media campaign, in part, led by *The West Australian* and *The Australian* newspapers, that culminated in a parliamentary review and Premier Carpenter taking control of the issue in an attempt to ameliorate some of the more contentious aspects of the proposed senior school certificate. In Tasmania, a similar debate about curriculum reform related to Essential Learnings, led to Minister Bartlett replacing Minister Wreidt as the education minister and a decision, announced in late August, 2006, to re-badge the curriculum as the Tasmanian Curriculum and to modify some of the more problematic aspects of the Essential Learnings curriculum as it was originally designed. At the national level, debates about the impact of outcomes based education on history, literature and music curriculum have also highlighted the fact that school curriculum has become the focus of attention. A number of education activists and academics have also criticised Australia's adoption of outcomes based education on the basis that OBE does not represent 'world's best' curriculum and that it fails to successfully support teachers in their work (see Berlach 2004, Donnelly 2004, Wilson 2002 and the PLATO website, www.platowa.com).

The following paper is based on the report undertaken by the author (Donnelly 2005) for the Commonwealth Department of Education, Science and Training, entitled *Benchmarking Australian Primary School Curricula*, and it seeks to trace the recent history of Australia's adoption of outcomes based education, in addition to offering a critique and an outline of a possible way forward.

Australia's adoption of Outcomes-based Education

As noted by Bruce Wilson (1996, p 5), a past CEO of Australia's Curriculum Corporation, one of the defining characteristics of Australian education since the early 90s is the widespread influence of outcomes-based education. In the period since the Australian Education Council's adoption of the eight key learning areas (April 1991) and the development of the national curriculum statements and profiles, undertaken by the Curriculum and Assessment Committee (CURASS) on behalf of the Australian Education Council, all states and territories have developed intended curriculum documents, to a greater or lessor degree, based on an OBE approach.

It is important to note that Australia's adoption of OBE has not been uniform as states and territories developed their own responses to the national statements and profiles (see Watt 1998, 2000, Marsh 1994, Donnelly 2004 and Barcan 2005 for an outline of Australia's adoption of OBE). NSW, for example, as a result of an enquiry set up to review the implementation of a profiles and outcomes approach, modified its adoption

of the national curriculum (see Eltis 1995), while Tasmania, on the other hand, agreed to make use of the national statements and profiles in schools. It should also be noted that MCEETYA's decision in July 2003 to develop what are termed *Statements of Learning* in four curriculum areas represents a further important development in Australia's development of OBE.

In one sense, the focus on outcomes relates to the need to measure educational effectiveness in terms of student learning. Instead of measuring the success of an education system, or school, by identifying inputs such as how much money is spent, how many teachers are employed or how small the classes, the intention is to measure improvements, or otherwise, in student learning. As noted by McGaw (1994, p 2), for many years, given the lack of agreement on what constituted improved learning and, if agreement could be reached, how it might be measured, it was impossible to know how well Australian students were performing. The introduction of literacy and numeracy tests at national, state and territory levels over the last 10 years or so is an example of the desire to measure learning outcomes.

In relation to curriculum development, the term 'outcomes' has a much broader meaning than just simply measuring learning outcomes in an attempt to hold schools accountable. Outcomes-based education (OBE) represents a distinctive approach to curriculum that distinguishes it from either a syllabus or, in the US, what is termed a standards approach. The US educationalist, William Spady is a staunch advocate of OBE and his works have had, and continue to have, a significant impact on Australia's adoption of OBE (see Spady 1993, Griffin 1998, Blyth 2002 and DEET undated). Significant is that Spady (1993, pp 7-11) differentiates between 3 types of outcomes-based education approaches:

- traditional OBE – based on a traditional approach to curriculum, one where established disciplines have priority, there is a strong focus on content and year level organisation and the world of the classroom appears divorced from the so-called real world. The OBE focus is defined in terms of measuring students' mastery of the set curriculum,

- transitional OBE – the focus moves away from teaching subjects to cultivating what Spady terms higher order competencies, such as critical thinking, problem solving and communication skills. The focus moves from the classroom to defining what students need to be successful after graduation in terms of life-long learning, and

- transformational OBE – in opposition to conventional subjects and how schools have been traditionally structured, this approach is future oriented and focuses on what Spady terms: "the broad role performance capabilities of young people and their ability to do complex tasks in real settings, in real situations, relating more directly to life. Transformational OBE is not focused on curriculum outcomes, that is, outcomes about conventional subject areas". Learning is no longer based on year levels and the belief that students must succeed in a set period of time.

Whereas a syllabus details what is to be taught at the start of the year by giving teachers a clear and concise road map outlining what the year's lessons will involve,

an outcomes based education approach identifies student-learning outcomes that are to be demonstrated or achieved by the end of the process. One US paper (WEAC, 1995) defines OBE as:

> *At its most basic level, Outcome Based Education is where the school and community first determine what skills and knowledge students should possess at graduation, then work backwards from there to develop curriculum, strategies and materials to help students achieve those goals, or 'exit outcomes'.* http://www.weac.org/resource/may96/obe.htm.

OBE curriculum documents are not syllabuses or work programs as such and, when compared to a syllabus approach, give greater weight to formative, criterion-based assessment, in opposition to summative assessment and high-risk tests, and adopt a constructivist, developmental approach to education. Unlike a syllabus, where subject knowledge forms a critical part of the curriculum, it is also the case that OBE places greater emphasis on dispositions and attitudes. As noted in the 'Introduction to Essential Learnings and the SACSA Framework' (DECS, undated), when explaining the concept of OBE related essential learnings:

> *Essential learnings are understandings, dispositions and capabilities which are developed through the Learning Areas and form an integral part of children's and students' learning from birth to Year 12 and beyond… These understandings, capabilities and dispositions are personal and intellectual qualities, not bodies of knowledge, and they are developed throughout an individual's life.*

At the classroom level, implementing OBE also requires a significant change in the way teachers have traditionally taught, as noted by Griffin (1998, p18):

> *The role of the teacher must change. The role of assessment must change. The role of the teacher needs to change from a transmitter of information to a facilitator of learning. Assessment needs to focus on progress along predetermined continua of learning and changes in the learner. Curriculum needs to maximise the students' opportunities to establish an enquiry approach to learning and to use a range of resources to lead the student along the most appropriate learning pathway to achieve the designated outcomes.*

In the US, after experimenting with OBE during the 90s, the vast majority of states have now moved to what is termed a standards approach to curriculum (see Shanker 1993, Manno 1994 and Williams et al 1994 for an analysis of the US's adoption of OBE and an explanation as to why OBE was dropped in favour of a standards approach to curriculum). A standards approach, when compared to OBE, is more academic in focus, relates to specific year levels and curriculum descriptors are expected to be concise, measurable and based on academic disciplines. The following examples provided by the American Federation of Teachers illustrate the difference between standards and the weaker OBE curriculum descriptors (AFT 2000):

	Strong	**Weak**
English	Students should be able to develop	Students should be able to construct

	a descriptive essay that depicts an object or event, maintains a consistent focus, uses a logical sequence, and elaborates each idea with specific details and vivid vocabulary. Grade 5	meaning through experiences with literature, cultural events and philosophical discussion. No grade level
History	Students should be able to describe how United States federalism was transformed during the Great depression by the policies of the new Deal and how that transformation continues to affect United States society today. Grade 9-12	Students should be able to understand, analyze and interpret historical events, conditions, trends, and issues to develop historical perspective. No grade level
Math	The student will differentiate between area and perimeter and identify whether the application of the concept or perimeter or area is appropriate for a given situation. Grade 5	Students should become mathematical problem solvers. To develop these abilities, students need the experience of working with diverse problem-solving situations. No Grade level
Science	Students should be able to describe the basic processes of photosynthesis and respiration and their importance to life. Grade 5	Students should be able to use basic science concepts to help understand various kinds of scientific information. Upper elementary

While some Australian defenders of OBE, such as Dianne Kerr (2000a, p 15), argue that when Australia adopted OBE during the 1990s we were, in fact, implementing a standards approach, the evidence suggests otherwise (see Donnelly 1999, Wilson 2002 and Berlach 2004) for a description of OBE and what distinguishes OBE from either a syllabus or a standards based curriculum). It should also be noted that in the US, the two quite different approaches to curriculum are also sometimes confused, in part, because: *OBE is often presented to parents in a disguised form, under a variety of names, such as 'Standards-based' education* (Williams et al, 1994, p 1).

Evaluating outcomes-based education within an international perspective

Given the central role OBE has played in Australian education since the early 90s, represented by the national statements and profiles and the various equivalent state and territory documents, it is worth evaluating OBE in more detail. This is especially important given the admission by Bruce Wilson (2002, p 6) that Australia's adoption of OBE represents an: *unsatisfactory political and intellectual compromise* and the argument presented in DEST funded report benchmarking Australian primary school curricula (Donnelly 2006), when compared to either a syllabus or a standards approach, that OBE is conceptually flawed, difficult to implement and superficial in its approach to detailing essential learning.

The first thing to note about Australia's adoption of OBE, initially represented by the

national statements and profiles, is that a good deal of criticism was directed at the national curriculum both before and after the 1993 MEETYA meeting in Perth (see Marsh 1994, chapter 7 and Donnelly 2004, chapter 3.1) for an outline of the public campaign against the national statements and profiles. Such criticisms can be summarised as:

- lack of academic rigour and the fear that the national statements and profiles represented a fall in standards (groups such as the Australian Institute of Physics, the Royal Australian Chemical Institute and Australian Mathematical Science Council argued that the national curriculum represented a dumbed down approach to standards),

- the lack of a strong, clearly articulated educational justification for the introduction of OBE or research evidence proving the success or worth of the new approach to curriculum development (see Eltis 1995, pp 11-22 and Blyth 2002). In particular, there appeared little concrete evidence, either in Australia or the US, demonstrating that OBE had been successfully implemented on such a large scale, and

- a concern that the development of the national statements and profiles had a adopted a 'top-down' approach to curriculum development that marginalised the interests and needs of teachers and schools (see Collins 1994, Blyth 2002, Vinson 2002 and Reid 2004).

Such were the concerns about the national statements and profiles that the MCEETYA Perth meeting decided not to endorse the documents, but to return them to the states and territories for further development and review (see Watt 1998, 2000 for an outline of how the various states and territories responded to the outcomes of the 1993 Perth meeting). Of interest is that a NSW enquiry into adopting OBE (Eltis 1995, p 1) raised a number of important caveats and recommended: *the Board of Studies no longer be required to incorporate the National profiles directly into the NSW syllabuses.*

The second point to note about OBE's arrival in Australia during the early 90s is that, at the international level, it was a curriculum model that had only recently gained prominence and stronger performing countries involved in TIMSS and TIMSS-R continued to adopt a syllabus approach to curriculum development. As noted by Steiner-Khamsi et al (forthcoming, p 6): *During OBE's phase of slow growth in the late 1980s and early 1990s only a few educational systems adopted the reform, notably New Zealand, Australia, England, and Wales, Canada and the United States.*

Bruce Wilson (2002, p 8) makes a similar point, when he states: …*let's get beyond outcomes fetishism. The present form of outcomes has probably outlived its usefulness. Indeed it is difficult to find a jurisdiction outside Australasia which has persevered with the peculiar approach to outcomes which we have adopted.*

Significant, in those systems that have adopted OBE, is that there is also evidence that the experience has been less than satisfactory. In England, the first edition of the National Curriculum was widely criticised. In particular, teachers attacked it as unwieldy and cumbersome and, especially at the primary level, argued that it was impossible to implement in a balanced and effective way. In relation to the

implementation of OBE in Ontario, Canada there is also evidence that teachers found the process frustrating and difficult (see Hargreaves and Moore 1999, p 7). While many states in the US, during the early 90s, also began to adopt OBE approaches, or what some termed subject area standards, the experience was such that OBE was soon jettisoned in favour of a standards approach (see ERIC 1993 for an outline of a number of criticisms directed at OBE, these include: lack of any research evidence supporting OBE, the way OBE values the process of education to the detriment of essential content and the time consuming and onerous assessment practices associated with OBE.). Andrew Blyth (2002, p 14) cites William Spady in this regard and concludes: *In any case, OBE as a reform movement was dead by 1995. There has been virtually no research or reference to it in the US educational literature since then.* The past head of the American Federation of Teachers, Albert Shanker (1993), criticised OBE for advancing curriculum descriptors that were often vague, ambiguous, difficult to measure and low in academic content. In explaining the demise of OBE in the United States, Watt (2000, p 46) also suggests that part of the critique related to conservative groups attacking OBE as politically correct and focusing too much on affective matters to the detriment of worthwhile content. Such was the force of the critique against OBE that Marzano and Kendall (1997, p 5) after outlining the origins and development of OBE in the US, conclude:

> *In summary, the once bright promise of subject area standards (OBE), born from a desire to improve the rigor and effectiveness of American education, has faded under a wide array of criticisms, and the movement itself is bogged down under its own weight.*

South Africa is another country that had introduced an outcomes-based approach to curriculum development. Of interest, as occurred in the US following the introduction of OBE, is that there is also opposition to what has become the new orthodoxy in designing the intended curriculum. South African teachers faced similar problems to their English colleagues when attempting to introduce OBE into South African schools (see Jansen and Christie 1999 for a series of papers outlining a number of criticisms of South Africa's adoption of OBE), As noted by Boughey (2005, p 1):

> *Outcomes Based Education (or OBE) and the National Qualifications Framework (NQF) have received a lot of criticism in recent years mostly because of the problems experienced at primary and secondary levels of the South African educational system.*

A South African secondary school principal, Dr Malcolm Venter (2000), in a paper presented at the Australian Principals Associations Professional Development Council (apapdc) Conference 2000, presented a range of OBE criticisms that can be summarised as follows:

- weakening the idea of striving for success by eliminating the concept of failure,

- unduly emphasising criterion referenced assessment to the detriment of norm referenced assessment,

- unfairly increasing the workload on teachers by imposing an individual-based, diagnostic assessment regime,

- reducing the emphasis on subject knowledge in preference to skills and process, and

- being couched in education jargon that disempowers and alienates classroom teachers.

Given the flaws in OBE, it should not come as a surprise that as Australian teachers sought to implement OBE in their classrooms during the 1990s, there was a growing realisation that the new approach was difficult to implement. After evaluating Australian schools' implementation of OBE, as represented by the national profiles, Griffin (1998, p 19) concluded:

> *Perhaps OBE cannot be fully implemented system wide. The changes needed are too radical and disruptive for whole systems of education to accommodate. Like most innovations, the ideal scenario is unlikely to be realised and the change will move through the system, leaving traces of the change in its wake.*

A number of papers and reports (including Eltis 1995, chapter 4, Griffin 1998, Blyth 2002 and Vinson 2002, pp 89 – 94) raised a number of criticisms and concerns, summarised as follows:

- the excessive number of curriculum outcomes, especially at the primary school level, that overwhelm teachers and promote a check list mentality in deciding what should be taught,

- a superficial and patchy nature of the outcome descriptors that work against the acquisition of essential knowledge, understanding and skills associated with the subject disciplines,

- the difficulties involved in managing and recording individual student assessment as a result of adopting a criterion-based, continuous and diagnostic approach to assessment,

- linking assessment and reporting of student outcomes to levels incorporating a number of year/grade levels, and

- a sense that curriculum development is occurring far removed from the realities of the classroom and unresponsive to the needs of teachers and students.

Such have been the weight of teachers' concerns that a number of recent state and territory official reports, while acknowledging the positives associated with OBE, have also recognised the flaws in Australia's approach to developing the intended curriculum. A second, more recent report undertaken by Professor Eltis (2003, p 81) into NSW curriculum notes the heavy demands placed on teachers by recent approaches to curriculum:

> *But balancing demands in a busy school day remains a critical problem. Is it possible to assist teachers to cope with the problems of the 'over-pressured school day' by making adjustments to factors which come in 'from outside' and create pressures for them? That is, is it possible to reduce external pressures and thereby liberate teachers somewhat to enable them to find time to pursue creative and innovative approaches to teaching, assessment and reporting?*

The ACT Department of Education, Youth and Family Services (2004) report, *Every Chance to Learn: Curriculum Renewal Evaluation Report*, also acknowledges the problem of teacher overload:

> *Because systemic curriculum came to be organised by the specified content in eight areas of study from K-12, schools and teachers struggled with the volume of content they felt they had to cover. Primary schools, in particular, felt this burden with each classroom teacher dealing with all eight Key Learning Areas when designing teaching programs.*

The Western Australian Department of Education Services (2001, p 1) report, *Investing in Government Schools: Putting Children First*, also acknowledges the pressures placed on teachers by having to implement OBE as embodied in the Curriculum Frameworks document.

> *Existing structure, strategies and operations of the central and district offices are inadequate to the task of implementing major curriculum change through the Curriculum Framework. Many schools and teachers are experiencing significant difficulty in engaging with the requirements of an outcomes approach.*

Dianne Kerr (2000b, p 12) makes a similar point about the onerous and time consuming nature of Western Australia's adoption of OBE when she states:

> *A 1999 survey of teachers in WA reveals that curriculum change is the number one reason for teachers to plan early retirement or to seek part-time employment. The situation in other states with significant programs of curriculum reform is unlikely to be different.*

In Queensland (Queensland Department of Education and the Arts, 2005a, p 2) a new round of curriculum development was signalled in 2006, with the recognition that previous attempts may not have been completely successful:

> *The framework will address concerns raised by teachers and the community about the amount of material required to be covered in the Years 1-10 curriculum, which is hindering in-depth learning.*
> *Concerns have also been raised about a lack of clarity around what must be taught across schools and what standards of student achievement are expected…*
> *For the first time in Queensland's P-10 years there will be rigorous, comprehensive assessment against defined standards that will be*

comparable across schools.

Finally, in Victoria (VCAA, 2004, p12) where a new round of curriculum development is being undertaken, under the title, Victorian Essential Learning Standards, there is the observation:

> *In summary, it can be argued that the current ways in which many curriculum authorities have conceived the curriculum for schools haves resulted in poor definitions of expected and essential learning and provides teachers with insufficient guidance about what to teach. It has been suggested that 'as our current documents stand, teachers could find a basis for teaching everything they know' as 'there are few priorities set, effectively little essential learning identified and few discriminations made about which bits matter for young Australians to learn' (quote taken from Bruce Wilson).*

While it is significant that the above extracts represent official recognition of a number of flaws in Australia's adoption of OBE, it is also important to take note of the change in terminology being used to describe curriculum. On the level of rhetoric, at least, there is recognition that more is needed to develop 'deep understanding', 'rigorous standards' and to promote 'essential learning'.

How successful systems define and enact the intended curriculum

Given the flaws in OBE as a model of curriculum development, as outlined in the preceding pages, the question arises as to what any alternative might look like. Based on the research associated with a number of benchmarking projects undertaken by the author, (Donnelly 1998, 2002, 2006) it is possible to identify three distinct approaches to developing the intended curriculum. The approach to curriculum adopted by those countries associated with TIMSS and TIMSS-R, generally speaking, can be categorised as embracing either a syllabus, an outcomes-based education model or, in the US, what is termed a standards approach. As might be expected, how the intended curriculum is defined has a significant impact on how successful schools are in achieving high standards for their students (equally important is what actually happens in the classroom, the implemented curriculum, and the levels of achievement students reach, the attained). As previously mentioned, those countries that consistently perform at the highest level in international TIMSS tests, such as Singapore, Japan, the Republic of Korea, Hong Kong, the Netherlands and the Czech Republic, adopt a syllabus approach to curriculum development. Unlike outcomes-based education, a syllabus approach is one where curricula relates to year levels and is expressed in terms of content to be taught, students experience summative assessment and there is often streaming based on a differentiated curriculum. (For a description of how various countries construct different approaches to curriculum, see Robitaille 1997 and O'Donnell 2004.)

As previously mentioned, it is also the case that adoption of OBE in other countries, in addition to Australia, has been less than successful. In South Africa, the consensus is that the implementation of OBE failed and it is also the case that after experimenting with OBE during the 1990s, the overwhelming majority of states in the US have switched to a standards approach. Groups such as the American Federation of

Teachers are strong critics of OBE and the criteria put forward to define what is termed a standards approach has more in common with a syllabus approach than that represented by OBE. The following diagram outlines some of the important differences between these three curriculum models.

	Syllabus	**Outcomes-based education**	**Standards**
1	detail what students should be taught/expected to learn at the start of the year	focus on what students should achieve or be able to do by the end of the process	identify what students should know and be able to do at the end of a set time
2	relate to specific year levels	address levels which incorporate a number of year levels	focus on specific year levels
3	mandated number of hours	number of hours not stipulated	number of hours not stipulated
4	differentiated curriculum where students are streamed according to interests and ability	common curriculum with mixed ability teaching	common curriculum
5	based on established disciplines/categories of knowledge	multidisciplinary approach and emphasis on attitudes, dispositions and feelings	based on established disciplines/categories of knowledge
6	curriculum descriptors specific, easily understood, concise and measurable	curriculum descriptors vague, hard to measure and overly generalised	curriculum descriptors specific, easily understood, concise and measurable
7	summative assessment with high risk tests and consequences for failure, expectation that essential knowledge, understanding and skills are mastered at each year level	developmental approach to learning; focus on criterion-based, formative assessment based on levels/bands that incorporate 2 to 3 year levels	expectation that essential knowledge, understanding and skills are mastered at each year level, summative assessment with some US states expecting students to repeat a year if standards not met
8	greater use of direct instruction and explicit teaching	constructivist approach to learning	greater focus on direct instruction and explicit teaching
9	emphasis on teacher directed, whole class teaching	teacher as a facilitator with a student-centred approach to teaching and learning	emphasis on teacher directed, whole class teaching

Given that those countries that perform best in international tests have eschewed OBE in favour of a syllabus approach to curriculum and that the US has jettisoned OBE in favour of a standards approach, it is worthwhile examining a number of the above distinctions in more detail.

Firstly, Australia's first attempt at OBE, the national statements and profiles, were never intended to be syllabus documents that teachers could implement at the school and classroom level. OBE documents, instead of providing a clear and succinct road

map outlining what it to be taught, detail a range of outcome statements that students are expected to demonstrate at the end of a particular level or stage. Similarly, the state and territory documents associated with the current round of curriculum development have to be translated into teacher-friendly courses or syllabuses. Compared to a syllabus or standards approach, OBE places unnecessary, time consuming and onerous demands on teachers; time and effort that would be better spent developing, evaluating and strengthening classroom pedagogy.

A syllabus and a standards approach relate to specific year levels, unlike OBE where particular levels might incorporate 2 to 3 year levels. Relating curriculum to specific year levels makes it easier for teachers to develop curriculum and to monitor student progress; there is also the expectation, before students move on to the next year level, that they clearly demonstrate they have mastered the required standard of work.

Secondly, the American academic Jerome Bruner in *The Process of Education* tells teachers that they must 'teach the structure of the discipline'. The American Teachers Federation and the Thomas B Fordham criteria for ranking intended curriculum documents also emphasise the importance of the subject disciplines and the need to ensure that students are introduced to essential knowledge, understanding and skills. One of the defining characteristics of both a syllabus and a standards approach is the central importance of the disciplines and the belief that generic skills and competencies can only be taught within such a context. An OBE approach, on the other hand, by adopting a child-centred, process driven approach and by giving priority to outcomes focusing on attitudes, dispositions and competencies fails to adequately deal with essential learning. As noted by Stone (1996, p 7), in his analysis of Dewey's influence on child-centred education of which OBE is the most recent example, essential knowledge, understanding and skills are secondary to the interests and needs of the individual child:

> *In essence, the student's 'needs' were to guide the selection and sequencing of educational experiences. Accordingly, Dewey's curriculum was comprised of the subject matter and experiences that fit the unique pursuits of the individual. Knowledge of formal subject matter was purely incidental to the educational process.*

As noted in report, *Benchmarking Australian Primary School Curricula*, Australian OBE documents, on the whole, adopt a superficial and patchy approach to detailing essential learning associated with the disciplines. That OBE documents fail to deal adequately with subject disciplines, in part, is caused by the fact that so many outcome statements are vague, difficult to measure and overly generalised.

The current round of Australian OBE documents seek to remedy this problem, in relation to particular outcome statements, by providing teachers with indicators and examples that are intended to flesh out what is required. Not only are teachers, especially in primary school, overwhelmed by hundreds of outcome descriptors and related indicators, but also there appears little, if any, epistemological justification as to why some indicators and not others are listed or guidance as to whether some should be given precedence. If one accepts the argument associated with the philosophy of education movement, that there are distinctive forms of knowledge, traditionally associated with the subject disciplines, then what constitutes such forms

of knowledge would need to be made explicit instead of being left to chance or circumstance (see Hirst and Peters, 1970, Hirst, 1974, Crittenden, 1987 and Hirsch, 1988 for a range of arguments in favour of this approach).

Thirdly, research associated with analysing the characteristics of those countries that out-perform Australia in TIMSS and TIMSS-R suggest that, in addition to such countries adopting a syllabus model, they place greater emphasis on summative assessment, standardised testing and external, centrally controlled examinations. Both a syllabus and a standards approach entail regular, year level testing with consequences for failure and, in some instances, are based on the expectation that students should achieve the required standard of work before they are promoted[1]. Since the early 1990s, as a result of adopting OBE and in opposition to the more traditional approach, Australian curriculum has emphasised a developmental approach to learning, focusing on criterion-based, formative assessment based on levels that incorporate a number of year levels. As a result, children often automatically progress through school without accomplishing what is required for further successful learning. The argument that state and territory literacy and numeracy testing, generally at years 3, 5 and 7, act as a suitable substitute for normative assessment where students are ranked one against the other or against objective standards, is flawed. Not only are such tests based on minimum standards, but descriptors such as 'emerging', 'solid' and 'comprehensive' fail to adequately define the level of ability or standards met. A related difficulty is that many of the outcome statements used to define standards are so general and vague that it is impossible, with any degree of certainty, to know what constitutes success or failure.

In addition to promoting a developmental approach, an OBE curriculum also embodies a constructivist view of learning. As noted by Hirsch (1996, p 133) constructivism, drawing on the theories of Rousseau, John Dewey and Jean Piaget, is based on the belief that:

> *…students are not passive vessels for receiving knowledge but active participants who construct knowledge for themselves. This theory is said to support 'learner-centred' teaching, hands-on learning, discovery learning and the rest. Constructivism is a psychological theory about memory and learning.*

Australian curriculum documents give precedence to constructivist approaches to learning on the assumption that learning is unique to the individual and that learning must be active and related to the real-world in the most obvious sense. Unlike a syllabus or standards approach, were there is greater emphasis on direct instruction and explicit teaching, the OBE approach adopts classroom strategies like: group learning, individualised project work and enquiry learning. One of the flaws in constructivism is that it takes a common sense observation, that learning is actively constructed and that each person internalises learning in a unique way, and distorts it to such an extent that it becomes counter-productive. The types of learning associated

[1] It should be noted that in the US, where initiatives like the 'No Child Left Behind Act of 2001' have enforced a rigid, centralised system of testing and accountability on schools in areas like literacy and numeracy, an emphasis on standardised testing has been criticised for narrowing the curriculum, disguising the importance of giving schools additional resources and forcing teachers to 'teach to the test' (See Lin, R (2001) and Shephard, L (2000) for an outline of such criticisms) .

with a more formal syllabus approach, one where students listen to a teacher standing at the front of a room, still involve active learning. Students have to listen and internalise what the teacher is saying and it is wrong to describe such a process as passive. As noted by Anderson et al (1998, p 232):

> *A consensus exists within cognitive psychology that people do not record experience passively, but interpret new information with the help of prior knowledge and experience…. However, denying that information is recorded passively does not imply that students must discover their knowledge by themselves, without explicit instruction, as claimed by radical constructivists. In modern cognitive theories, all acquisition of knowledge, whether by instruction or discovery, requires active interpretation by the learner… Enough consensus exists today on matters of fact to support significant educational applications. To mention one in particular, the empirical evidence refutes the radical constructivists' claim that students cannot learn by direct instruction.*

In addition, a good deal of research (see Stone 1996, Hirsch 1997, Anderson, et al 2000 and Sweller 2002) suggests that more direct, formal approaches to teaching are more efficient in terms of time and effort and more successful in teaching the basics than those associated with constructivism. In particular, in the area of mathematics the consensus is that direct instruction is preferable to discovery learning. Not only does the acquisition of deep understanding rely on mastering particular subjects, but research also suggests that rote learning and memorisation are vitally important. One of the constant complaints of progressive educators is that those teachers who make students recite multiplication tables, historical facts or learn poetry by heart, are guilty of 'drill and kill'. The argument is that it is better to allow students creativity and flexibility and to give them the opportunity to engage in real-world projects and activities. The only problem, as outlined by the American academic Hirsch, is that much of the research, especially in mathematics education, suggests the opposite. Creativity requires structure and discipline (see Hirsch, 1997).

Characteristics of education systems that perform best in TIMSS and TIMSS-R

Since the introduction of international tests such as TIMSS and PISA, a good deal of research has been undertaken to identify the characteristics of those education systems that consistently achieve the best results. As a result of the research associated with a number of benchmarking reports undertaken by the author (see Donnelly 1999, 2002, 2005), it is possible to identify the characteristics of those education systems that consistently outperform other countries in tests such as TIMSS and TIMSS-R. In summary, successful education systems adopt the following characteristics.

Firstly, stronger performing systems adopt a strong, discipline-based approach to school subjects focusing on essential learning, especially in mathematics and science. One of the flaws in Australia's adoption of OBE, especially at the primary level, is that the intended curriculum fails to give students the necessary foundation knowledge, understanding and skills without which future success is difficult to achieve. The US expression, 'a mile wide and an inch deep', denotes a curriculum that attempts to cover too much ground and fails to introduce essential learning. As a

result, not only are teachers weighed down with the responsibility of implementing hundreds of learning outcomes but, when compared to syllabuses associated with more successful countries, the majority of Australia's curriculum documents lack the necessary academic rigour and promote superficial knowledge and understanding. As stated in the NSW Vinson Report (2002, p 22), both secondary and primary school teachers noted that the implementation of OBE led them to: *achieve such a broad coverage of topic areas as to necessitate superficial learning.* Thomson and Fleming, 2004b (referring to Hollingsworth et al 2003) make the observation: *A video-based study of mathematics teaching in Year 8 classrooms in 1999 suggested that mathematics lessons in Australia involved a greater use of short, repetitive problems of low complexity than was evident in other countries*. Lokam et al (1997, p 230) make a similar point when suggesting that Australian teachers in maths, and to a lesser extent in science, introduce more difficult topics later in the curriculum when compared to more successful countries. The recent movement to essential learning and deep understanding on behalf of some state and territory education authorities appears to be a belated recognition of such a weakness in Australia's adoption of OBE. The US's rejection of OBE in favour of a standards approach, in part, is justified by the argument that OBE fails to deal with the knowledge, understanding and skills associated with the key subject disciplines.

Secondly, stronger systems provide clear, rigorous and measurable intended curriculum documents linked to text books, teacher training and classroom practice. As evidenced by a number of the official reports previously cited, Australia's adoption of OBE leads to curriculum descriptors that are often vague, imprecise and lacking in academic content. When compared to more successful countries, not only do such descriptors lack academic substance and rigour, but also there are so many and they are presented in such detail, that teachers are in danger of being overwhelmed. The concern that teachers are sometimes overwhelmed is made worse by the practice of illustrating outcome statements with multiple indicators and examples that simply add to the checklist mentality and bureaucratic workload associated with implementation. One of the acknowledged strengths of a syllabus approach to curriculum development is that each school, and each teacher, does not have to re-invent the wheel by having to design his or her own syllabuses. In Japan, South Korea and Singapore more time and resources, thus, are spent on strengthening lesson preparation and classroom pedagogy.

Thirdly, more successful systems have greater time on task in the classroom, less disruption and a greater emphasis on formal, whole-class teaching. Ethnographic studies associated with TIMSS and TIMSS-R (see Stigler, J and Hiebert, J, 1999 and Stigler et al, 1999) suggest that successful classrooms are those where there is a clear focus and expectation on what is to be achieved, teachers deal with conceptual understanding as well as developing skills, there is greater focus on teacher directed activities and there is less disruption and interruptions. Classroom strategies commonly associated with OBE, such as group work and student-centred learning, are often time consuming and ineffective and, when compared to more successful countries, Australian classrooms also face greater levels of disruption and student absenteeism. The style of teaching associated with more successful systems, by comparison, is more carefully structured and focused on teaching key content, skills and understanding. As argued by Cuttance and Stokes (2001) unstructured learning is of more benefit after students have been explicitly taught the requisite knowledge,

understanding and skills on which such future learning is based. Dr Rhonda Farkota (2005), a researcher at the ACER, supports such a view when arguing the need for more direct instruction in Australia's primary school mathematics classes:

> *It is generally accepted that a student-directed approach is more suitable when it comes to the employment and cultivation of higher order skills where reasoning and reflection are required. However, for the acquisition of basic mathematical skills, the research clearly shows that teacher-directed learning is better suited. Needless to say, these basic skills must be firmly in place before students can approach problem-solving questions with any degree of competence.*
>
> *Any comprehensive comparison of the literature and research on student-directed approaches to learning, alongside teacher-directed learning, will show that the empirical data heavily favours the latter as being the more effective method yet almost every teacher-education program in Australian universities is based on a student-directed approach.*

Fourthly, systems that perform well in TIMSS have regular testing and examinations used to stream students and to decide whether students should be promoted from year to year. One of the defining characteristics of OBE is the move away from summative, high risk testing and examinations to formative, criterion-based assessment. As OBE outcome statements embrace a number of year levels and are often vague and general, there is little pressure on students to succeed or consequences for failure. The failure of OBE to regularly test students against objective standards linked to key knowledge, skills and understanding also means that students often move to the next year level without mastering what is required. Stronger overseas systems generally test students at the end of primary school and use the results to stream students into different ability or interest groups with a differentiated curriculum. Research related to analysing TIMSS and TIMSS-R results also concludes that better performing countries have centralised examination systems with less emphasis on school-based formative assessment (see Bishop 1999, Woessmann 2000, 2002 and Jurgess et al 2003 and Fuchs and Woesssmann 2004). As noted by Woessmann (2002, p 22):

> *The evidence from TIMSS-R confirms previous evidence from TIMSS that students in countries with central exit-exam systems perform better in their middle-school years both in maths and in science than students in counties without central exams. This finding holds even after controlling for a large set of variables reflecting for family background, resource endowment, and other institutional features of the school system.*

Conclusion

If one accepts, as a general rule, that curriculum can be divided into either a syllabus, an outcomes based education or a standards model, then the question arises as to which is most effective in strengthening learning and which best supports and helps teachers to get on with their work. As outlined in this paper, Australia's adoption of outcomes based education has been plagued by a number of criticisms and flaws. Not only where the original national statements and profiles criticised, but the

implementation of OBE at the state and territory level has also been less than successful. As acknowledged by a number of official reports, Australia's implementation of OBE has adversely impacted on teachers and failed to satisfactorily deal with what Bruce Wilson describes as 'deep learning'.

On solution is for Australian authorities to adopt a standards approach to curriculum development, similar to what is occurring in the US. One of the strengths of a standards approach, when compared to OBE as implemented in Australia, is that it has much in common with the syllabus model adopted by stronger performing countries as measured by TIMSS. While some aspects of the American model might not suit local beliefs about education, such as streaming and removing social progression, there is much about the standards model that mirrors the direction in which we are already moving. Many of Australia's current curriculum documents include reference to 'standards', 'deep learning' and 'essential content' and there appears to be a growing realisation that the type of learning associated with the established disciplines of knowledge needs greater emphasis. The debate in the US is also focused on the concern that much of the existing curriculum is a 'mile wide and an inch deep' – a complaint that can also be levelled at many of Australia's OBE documents, especially at the primary school level. Instead of covering so much ground, the alternative is to focus on core areas, such as English and Mathematics in the early years, and to ensure that foundation learning occurs before broadening what students encounter.

In addition to adopting a standards model of curriculum design, it is also important that Australian education authorities take note of the research associated with what best works in the classroom in terms of promoting more effective teaching and learning. If it is the case, as *Project Follow Through* suggests, that teacher directed, more direct styles of classroom interaction are superior to the alternatives, then it makes sense to recommend such approaches to teachers. Especially in crucial areas like learning to read and learning basic mathematical concepts and algorithms, it is also vital to take note of recent research as to what actually works.

Finally, teachers need to be better supported and resourced. Crucial to this is giving them clear, concise and unambiguous road maps of what is to be taught. During the 70s and 80s, school-based curriculum development was widely adopted across Australia on the belief that it was wrong to impose centrally developed curriculum documents and that teachers had to be free to design curriculum at the local level. The reality, given the onerous and time consuming nature of teaching, is that many teachers do not have the time and, of even more concern, many are not curriculum experts.

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