OUTCOMES-BASED EDUCATION: PRINCIPLES AND POSSIBILITIES[1]

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This paper explores some of the basic principles of outcomes-based education and relates them to the Australian school and vocational education context. It is intended to help teachers[2] understand how they can translate the theory and philosophy of OBE into practical action in their instructional planning, teaching and assessment of student[3] learning. The paper recognises that OBE has critics as well as advocates, and responds briefly to some of the concerns that are commonly expressed about OBE. In several respects, the paper is deliberately provocative, challenging teachers to question their current teaching practices and to find ways in which some of the philosophies of outcomes-based education can be incorporated into their teaching. The paper does not attempt to be a complete treatise on OBE. Rather, it introduces some ideas that are central to OBE and suggests ways in which these ideas could be explored in greater depth.

The quality of an educational system can be judged from at least three perspectives: the inputs to the system, what happens within the system, and the outputs from the system. Those who are interested in inputs will focus their attention primarily on finances, resources, infrastructure, etc., and may use economic rationalism as the basis for their judgements about the quality or value of the system. Those interested in what happens within the system will focus their attention primarily on the processes used to organise, control and deliver education and training. Those interested in outcomes will focus their attention primarily on the products or results of education. It can be argued that all aspects of education are important and that quality should not be judged from any narrow perspective. However, in recent years there have been increasing calls in Western society for greater attention to be paid to the outcomes of education so that the return on investments in education (particularly public education) could be evaluated. These increasing calls for accountability were one reason for the rapid spread of various forms of outcomes-based education in countries such as the United States and the United Kingdom during the 1980s and 1990s. In Australia also, the concept of educational accountability was one of the driving motives behind the introduction of OBE. Here, the stimulus for outcomes-based education came from several sources: political, economic and educational. In particular, the development of National Profiles (descriptions of the progression of learning typically achieved by students during the compulsory years of schooling) "reflected a new political will in the States towards collaboration and rationalisation" (Eltis, 1995, p.11). These developments were closely related to the Federal Government's drive for national economic efficiency, which itself reflected a worldwide emphasis on accountability (including calls for schools to produce measurable "outputs" commensurate with the public moneys invested in them).

There are two basic types of outcomes from any educational system. The first type includes performance indicators such as test results, completion rates, post-course employment rates, etc. The second type of outcome is less tangible and is usually expressed in terms of what students know, are able to do, or are like as a result of their education. It is this second type of outcome

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[2] For convenience, the generic term "teacher" is used in this paper to describe the person responsible for guiding the instructional process. The techniques described here may be applied in various teaching contexts, such as schools, universities, or training establishments.

[3] In this paper the terms "student" and "learner" are used interchangeably.

that is normally implied when outcomes-based education (OBE) is being discussed, and the term is used in that way throughout this paper.

THE BASIC PRINCIPLES OF OBE

OBE, like most concepts in education, has been interpreted in many different ways. The term is often used quite inappropriately as a label for a great variety of educational practices that pay little more than lip-service to the fundamental principles of OBE. To clarify some of this confusion, you must start by realising that OBE can be viewed in three different ways—as a theory of education, or as a systemic structure for education, or as classroom practice. Ultimately, we need to align the systemic structure and the classroom practice with the theory if we are to have genuine outcomes-based education. We can think of OBE as a theory (or philosophy) of education in the sense that it embodies and expresses a certain set of beliefs and assumptions about learning, teaching and the systemic structures within which these activities take place. The most detailed articulation of the theory underpinning OBE is given in Spady (1994, 1998). While Spady is not the only person to have made a significant contribution to OBE, he is regarded by many as the world authority on OBE and it is evident that his ideas have had considerable influence on the approach to OBE that has been taken in Australia.

In Spady's words: "Outcome-Based Education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for students to be able to do, then organizing the curriculum, instruction, and assessment to make sure this learning ultimately happens" (Spady, 1994:1). Such an approach presupposes that someone can determine what things are "essential for all students to be able to do", and that it is possible to achieve these things through an appropriate organisation of the education system and through appropriate classroom practices.

The main idea behind Spady's definition is that OBE is an approach to planning, delivering and evaluating instruction that requires administrators, teachers and students to focus their attention and efforts on the *desired results of education*—results that are expressed in terms of individual student learning. Within this broad philosophy, there are two common approaches to OBE. One approach emphasises student mastery of traditional subject-related academic outcomes (usually with a strong focus on subject-specific content) and some cross-discipline outcomes (such as the ability to solve problems or to work co-operatively). The second approach emphasises long-term, cross-curricular outcomes that are related directly to students' future life roles (such as being a productive worker or a responsible citizen or a parent). These two approaches correspond to what Spady (1994) calls traditional/transitional OBE and transformational OBE. Spady clearly favours the transformational approach to OBE in which outcomes are "high-quality, culminating demonstrations of significant learning in context" (Spady, 1994:18). For Spady, learning is not significant unless the outcomes reflect the complexities of real life and give prominence to the life-roles that learners will face after they have finished their formal education. This notion of orienting education to the future needs of students, and of society in general, is the underlying principle of the Key Competencies in Australia (Mayer, 1993). In a less formal way, it is behind statements such as "The learning outcomes comprise the knowledge, understanding, skills and attitudes that students should acquire to enable them to reach their full potential and lead successful and fulfilling lives as individuals, as of the community and at work" (Northern Territory Board of Studies, 1998:2). For the remainder of this paper, all references to OBE are implicitly meaning transformational OBE.

In addition to the idea that outcomes should describe long-term significant learning, OBE is underpinned by three basic premises:

- All students can learn and succeed, but not all in the same time or in the same way.
- Successful learning promotes even more successful learning.
- Schools (and teachers) control the conditions that determine whether or not students are successful at school learning.

On to these points we can overlay the philosophical base suggested by Mamary (1991) in his discussion of outcomes-based schools:

- All students have talent and it is the job of schools to develop it.
- The role of schools is to find ways for students to succeed, rather than finding ways for students to fail.
- Mutual trust drives all good outcomes-based schools.
- Excellence is for every child and not just a few.
- By preparing students every day for success the next day, the need for correctives will be reduced.
- Students should collaborate in learning rather than compete.
- As far as possible, no child should be excluded from any activity in a school.
- A positive attitude is essential. (If you believe that you can get every student to learn well then they will.)

From his three premises, Spady developed four essential principles of OBE. The first principle is ***clarity of focus***: this means that everything teachers do must be clearly focused on what they want learners to ultimately be able to do successfully. Thus, when teachers plan and teach they should focus on helping learners to develop the knowledge, skills and dispositions that will enable them, ultimately, to achieve significant outcomes that have been clearly expressed. This principle obligates teachers to make both their short-term and long-term intentions for student learning clear to the learners at every stage of the teaching process. It also obligates teachers to focus all student assessment on clearly defined significant outcomes.

The second principle is often referred to as ***designing back*** and it is inextricably linked to the first principle. It means that the starting point for all curriculum design must be a clear definition of the significant learning that students are to achieve by the end of their formal education. All instructional decisions are then made by tracing back from this "desired end result" and identifying the "building blocks" of learning that students must achieve in order to eventually reach the long-term outcomes. This does not mean that curriculum design is a simple linear process, but it does mean that all planning, teaching and assessment decisions should be linked directly to the significant outcomes that students are ultimately to achieve. A systematic framework for designing higher education curricula in this way is described in Killen and Spady (1999) and an example of its application is given in Collier (2000).

The third basic principle of OBE is that teachers should have ***high expectations*** for all students. There is ample evidence in the literature (e.g., Queensland School Reform Longitudinal Study, 1999) that teachers must establish high, challenging standards of performance in order to encourage students to engage deeply with the issues about which they are learning. Helping students to achieve high standards is linked very closely with the idea that successful learning promotes more successful learning (Spady, 1994). When students experience success, it reinforces their learning, builds their confidence and encourages them to accept further learning challenges. One of the most important reasons for using OBE is that it can help all learners to do difficult things well.

Intellectual quality is not something reserved for a few learners: it is something that should be expected of all learners, and this is the link to the fourth principle—that teachers must strive to provide ***expanded opportunities*** for all learners. This principle is based on the idea that not all

learners can learn the same thing in the same way and in the same time (Spady, 1994). However, most students can achieve high standards if they are given appropriate opportunities—what really matters is that students learn the things that are important: not that they learn them in a particular way or by some arbitrary point in time. It is obvious that traditional ways of organising school do not make it easy for teachers to provide expanded opportunities for all learners. However, the practical difficulties of providing expanded opportunities must be weighed against the long-term benefits of enabling all learners to be successful.

It is only when the above principles are used as the core of an educational system that we can legitimately call that system outcomes-based education. We cannot, for example, conveniently ignore the principle of ***designing back*** or the principle of ***expanded opportunity*** and still claim to have an OBE system.

The approach to OBE that is currently being advocated by the NSW Board of Studies has elements of the traditional, transitional and transformational approaches defined by Spady. Historically, many of the outcomes in NSW syllabus documents are "traditional"—they focus on narrow subject content. Some of the outcomes could be considered "transitional" because they focus on cross-disciplinary skills (such as problem-solving), but most syllabuses do not explicitly encourage teachers to take this broader view of what they are teaching. The closest Australian curriculum outcomes get to being "transformational" is when they address the Key Competencies. This initiative of the Commonwealth, State and Territory Governments produced a set of eight statements that were intended to enhance educational outcomes for all young people, promote the skills necessary to enhance Australia's overall educational and economic competitiveness, and support the convergence of general and vocational education. Although there have been some superficial attempts to incorporate the Key Competencies into NSW school curricula, there seems to be little official encouragement to use them as the driving force behind all school learning in a manner that would match Spady's vision of a transformational OBE system.

One of the attractions of outcomes-based education is that it can provide administrators with some level of control over the outcomes of education, and at the same time provide teachers with a large degree of freedom to select the content and methods through which they will help their students achieve those outcomes. The control (or, if you like, the overall direction) will come through the specification of the syllabus objectives and outcomes, and the freedom comes through the choices (about content, teaching methods and assessment) that are left up to schools and individual teachers. There can be tension generated by these two issues of control and freedom; teachers may disagree with the controls that are imposed and administrators may not like the way teachers use their freedom of choice. This paper will not attempt to resolve that debate because such a task would be impossible; rather the paper will attempt to show that teachers can work within an outcomes-based framework and, at the same time, have the freedom to address many of the moral, ethical or democratic issues associated with teaching and learning.

Does everyone like OBE?

It should be acknowledged that not all educators are in favour of OBE. Sometimes this is because they disagree with the outcomes that have been mandated; more often it is because they disagree with the basic idea of pre-specifying the outcomes of education (at least in relation to what they teach). These two concerns will be addressed separately. If you disagree with the outcomes that have been mandated (for example, some of the syllabus outcomes) you should feel free to criticise these things; but this is not a sound basis for criticising the *idea* of outcomes-based education (i.e., its basic principles). This paper does not attempt to argue the merits of any particular outcomes, but it does suggest that there is merit in specifying what we want students to learn, merit in directing our teaching towards helping students learn those things, and merit in

attempting to determine whether they have learned it. In doing so, it recognises the utmost importance of addressing questions such as "what should students learn at school (or college or university)?" and "what is the purpose of schooling (or further education)"? but that debate is beyond the scope of this paper. However, no apology is made for the fact that this paper supports very strongly the philosophy that all teaching practices should be guided by what we want students to learn and what we want them to be able to do as a result of their education and training.

If we look at OBE rationally, we see that it fits very well with the commonsense notion that children at school (or in any other educational situation) should be learning something, and that specifying just what that learning is to be ought to help students to achieve it. Outcomes are really no more than statements of intention, written in terms of student learning. It makes little sense to argue that school, or indeed any learning experience, should not have as its chief purpose that those participating as students learn something. It also makes little sense to argue that students learn better when the teacher does not know what it is that the students are supposed to be learning. Further, it seems illogical to suggest that someone could claim to be teaching if his or her students are not learning. (Teachers may well be controlling, managing or entertaining, but none of these activities necessarily results in student learning.) It therefore seems that the basic idea of outcomes-based education is not inherently an inappropriate foundation for a system of education. However, as Fritz (1994) points out, this line of argument does not address the important question of whether or not it is appropriate to mandate compulsory outcomes for all students rather than to give them some freedom of choice. Debating that issue is beyond the scope of this paper.

Some critics of OBE base their opposition on a belief that it has inappropriate roots—often simply rejecting it because they see it as too behaviourist. [It is rather short-sighted to reject any education idea on the basis of its origins. If we did that routinely, there would not be much left!] Outcomes-based education does have its roots in earlier work on educational objectives (e.g., Mager, 1962), competency-based education (e.g., Franc, 1978), mastery learning (e.g., Block, 1971; Bloom, 1973) and criterion-referenced assessment (e.g., Masters & Evans, 1986), but it has synthesised and extended all these ideas. A detailed account of the development of the principles of OBE is given by Spady (1998) who describes how OBE was developed as a systematic application of a number of educational ideas that have been part of good educational practice for many years.

The central point of outcomes-based education is an unambiguous statement of what students are to learn. For some people, this immediately conjures up images of behavioural objectives of the type suggested by Robert Mager back in the early 1960s, but this is a very limited view of outcomes-based education. Outcomes can be specified precisely without being trivial. For example, outcomes such as "students will be self-directed learners" or "students will have high self-esteem" or "students will understand the principles of economic rationalism" are quite legitimate if the teacher has a clear idea of how to help students achieve them and how to judge when students have achieved them.

Of course, it cannot be expected that a system based on these principles could be introduced on a large scale without some difficulties and much concern from teachers and parents. Some people are fundamentally opposed to the idea of trying to decide in advance what students should learn. In a similar vein, some people argue that some learning experiences are valuable in their own right and that it is inappropriate or impossible to specify in advance what a student will learn from an activity such as reading a poem or watching a play. This may be true. However, it is possible to specify in advance what a student *could possibly* learn from these activities. It can also be argued that unless the teacher takes the trouble to think about what students might learn

from particular activities it is difficult to justify engaging students in those activities. This issue will be addressed in a number of ways throughout this paper. For now, you are simply asked to ponder what Zitterkopf (1994) points out: "A school that does not specify outcomes simply accepts whatever comes as a result of the educational process and, of course, places little, if any, emphasis on attaining results. Subsequently, quality in the process and product is acquired somewhat arbitrarily" (p.76). Such a situation is difficult to justify.

In practice, one of the major points of debate about OBE is likely to be the question of what *significant outcomes* should be incorporated into a given curriculum. It has been this point that has fuelled much of the opposition to OBE in the USA. Spady (1994) suggests ten categories of outcomes, based on "fundamental life performance roles" (p.21). He suggested that these life performance roles "require complex applications of many kinds of knowledge and all kinds of competence as people confront the challenges surrounding them in their social systems" (p.21). He proposed that no matter what major life roles learners faced after formal education (worker, employer, parent, etc.), they would need to be competent in his ten inter-related life performance roles. The life performance roles he suggested were: learner and thinker, listener and communicator, implementer and performer, problem finder and solver, planner and designer, creator and producer, teacher and mentor, supporter and contributor, team member and partner, leader and organiser. Spady suggested that one way to prepare students for these life roles was to "continually engage students in both individual and team activities that explore important issues or phenomena, use multiple media and technologies, create products that embody the results of students' explorations, and call for students to explain their work and products to adult and student audiences" (p.22). It is interesting to ponder the extent to which the Australian school system prepares children for these future life-roles.

USING OUTCOMES TO GUIDE INSTRUCTIONAL PLANNING

In an OBE system, there are three major steps in instructional planning: deciding on the outcomes that students are to achieve, deciding how to assist students to achieve those outcomes (i.e., deciding on content and teaching strategies), and deciding how to determine when students have achieved the outcomes (i.e., deciding on assessment and reporting procedures). For most teachers, these decisions will be made from their perspective as a subject specialist (e.g., a teacher of secondary science). However, if students are to achieve broader outcomes—such as the Key Competencies—learning programmes will have to be organised in an integrated way which draws on elements of all learning areas.

Programming – Some general principles

In any State or national education system, curriculum documents are written in broad terms; hence they do not cater directly for the special needs of individual schools or specific groups of students. Consequently, teachers need to translate whatever curriculum guidelines they receive into specific teaching programmes of sufficient detail to guide their day-to-day activities. Basically, each teaching programme becomes an interpretation of the curriculum guidelines (whether they are broad guidelines or a specific syllabus) and this interpretation will reflect the way in which the principles embodied in the curriculum guidelines have been adapted to meet local needs. Programmes, then, are sets of plans that guide individual teachers in their selection of lesson outcomes, content, teaching strategies, resources and assessment procedures.

Programmes can be for large units of work (such as a four-year course) or for small units of work (such as a section of a subject). Although the details of these programmes will be quite different, their structure can be similar. Each programme should have a rationale (to explain why the programme exists), aims (to explain what the programme will achieve), outcome statements (to indicate what students are to learn), content statements (to indicate what broad

areas of content will be used as vehicles for student learning), teaching strategy statements (to indicate how the learning activities will be organised), and assessment guidelines (to indicate how student learning will be assessed and reported). At some stage, all forms of programming address these issues but, by emphasising different key elements, three basic styles of programming can be used. In *content-based* programming, the selection of content precedes consideration of outcomes or teaching strategies; in *activities-based* programming, the selection of learning experiences precedes other decisions; and, in *outcomes-based* programming the first decision is about what students will learn and be able to do on completion of the programme.

Content-based programming is the approach with which most teachers are familiar. It puts an almost exclusive emphasis on "covering the curriculum" by suggesting that teachers should teach a predetermined amount of content in each time period (lesson, term, year, and so on). Very often, the content that is taught will be linked very closely to a subject-based textbook. This approach gives little consideration to how much *individual* students will learn in the available time, and leads teachers to think that it is acceptable and appropriate for individual students to learn different amounts. Given the differences that we know exist in students' ability, motivation, learning styles, and so on, variations in the amount that students will learn in a fixed time period are inevitable. However, we should recognise this fact (rather than ignore it) and provide additional learning opportunities for those students who need them. The problem of ignoring individual differences is compounded when we use norm-referenced assessment.

Experience-based programming emphasises the activities in which students will engage, without necessarily considering what students might learn from these activities. An example of this might be a laboratory-based chemistry course in which students work through "experiments" each week. Quite often, the assessment in these courses is based on the students' participation in the activities and their recording of "results", rather than on what the students learned. This makes it inevitable that students will achieve different levels of understanding and skills.

It is very difficult to justify either content-based programming or experience-based programming on any basis other than administrative convenience or teacher convenience. Particularly at high school and in vocational education, it is easy to organise courses around traditional subjects (physics, chemistry, etc.) and traditional learning experiences (lecturers, laboratory work, etc.). It is also easy to forget that these ways of programming courses do not necessarily make it easy for students to learn.

Traditionally, content-based programming and activities-based programming have been dominated by time. For example, one popular Australian curriculum text, Brady (1992), suggests a five-step approach to programme development in which the first four steps are concerned with time. Such time-dominated approaches have required students to spend fixed periods of time studying certain subjects or engaging in certain activities regardless of how much there was to learn, what they knew before they started, how difficult the content was to understand, how quickly they learned, or what they knew when the "end" came. This approach has emphasised administrative convenience, with little concern being given to student learning. Most traditional approaches to education are bound by this tyranny of time. As Spady and Marshall (1991) suggest, much of the education in the Western world seems to be "mired in an Industrial Age model governed by an Agricultural Age calendar" (p.72).

Why is it that in many schools the valuable learning time is divided into uniform periods that are jealously allocated to each subject area, and teachers continue to pretend that this is the best way to help students to learn? Some might be tempted to suggest that this is the only way that school can be organised, but is it? (Time- and calendar-dominated programmes would be quite sensible if all students learned at the same rate, developed at the same rate, mastered different subjects at

the same rate, and were equally suited to an educational system that is structured for administrative convenience. Clearly, such assumptions are nonsense and make a mockery of all the claims that schools provide equal learning opportunities for all students or that teachers are really concerned about their students' individual differences.) Should teachers be satisfied with a system that leads students to think that a period is over when the bell rings, rather than to think that the learning experience is over when they have achieved something meaningful? Should teachers be satisfied with a system that encourages students to see each subject as totally unrelated to any other subject, rather than to see each area of study as an integral part of their journey towards significant learning outcomes that will prepare them for life after school? Should teachers be satisfied with providing students with endless activities that, for some students at least, have no clear purpose? Should teachers be satisfied that some lucky students manage to overcome the handicap of an outmoded system of education and succeed in spite of it? Or, should teachers be trying to find a better system in which all content and all student activities can be justified on the basis of how well they help students to learn meaningful things, and in which all students are given equal opportunities to succeed? These questions can be explored through a consideration of outcomes-based programming.

Outcomes-based programming

Programming for outcomes means organising teaching to achieve predetermined results. It starts with a clear specification of what students are to know, what they are to be able to do, and what attitudes or values are desirable by the end of the programme. "In outcomes-based education . . . you develop the curriculum *from* the outcomes you want students to demonstrate, rather than writing objectives *for* the curriculum you already have." (Spady, 1988:6). With these outcomes as a guide, the programme is constructed to give all students an equal opportunity to achieve each outcome. Of course, no approach to programming should ignore practical things such as the total amount of time available for teaching or the resources that can reasonably be expected to be available. However, these should be seen as broad constraints rather than as insurmountable barriers to student learning. Outcomes-based programming attempts to focus clearly and deliberately on student learning. Major time constraints are not ignored, but time is seen as a flexible resource rather than as the principal factor that controls access to learning.

Quite obviously, the idea that time should be used as a flexible resource is one that will cause concern for many teachers, and rightly so. We cannot simply ignore the fact that students come to school for a fixed number of days each year, or that teachers are paid to teach for a fixed number of hours each week. However, we can recognise that in any given period of time (whether it be one hour or one year) not all students are capable of learning the same things, particularly if we teach them all in the same way. Therefore, we have to look for practical ways in which individual learners can be helped to make best use of their learning time, and practical ways in which teachers can make best use of their teaching time. However this is done, it will almost certainly mean that some students will have to be given multiple opportunities to learn and that teachers will have to use multiple ways of providing learning opportunities for students (Killen, 1998).

There are many different ways of approaching outcomes-based programming and assessment (e.g., Brown, 1988; Burns, 1987; Burns & Squires, 1987; Fitzpatrick, 1991; Marzano, 1994; Nyland, 1991; Pollock, 1992; Smith, 1991; Spady, 1988) but they are all built around the outcomes that *all* students are to achieve. It is on this point that OBE is often criticised. Most frequently, the criticism will be that the outcomes are trivial or otherwise inappropriate. (See, for example, McKernan, 1993.) This is a rather naive criticism because it is based on the assumption that it is never possible to specify appropriate outcomes. OBE supporters argue that it is always possible, but not always easy, to specify appropriate outcomes. Further, they suggest that the specificity of outcomes will depend on the scope of the curriculum that is being

described. If it represents the total school curriculum, an outcome such as "skills in problem solving and decision making" might be reasonable; whereas a curriculum for a subject such as Computer Studies might have an outcome such as "summarise the steps involved in producing a solution to a problem". At the level of an individual lesson, the outcome would become more specific, such as "use a spreadsheet to develop a what-if scenario to generate possible solutions to a financial problem".

Once they have been defined, the outcomes then influence all other components of the curriculum. They define the scope and structure of the content through which students will develop the knowledge, skills and values defined by the outcomes; they focus the instructional methods so that each learning activity has a specific purpose; they determine the way in which student placement and advancement will be organised (with opportunity for advancement being based on demonstrated learning rather than age); they determine how student learning will be assessed (placing the emphasis on what learning students can demonstrate, rather than when they are required to demonstrate their learning); and they focus attention on the learning environment that will be necessary in order that the outcomes can be achieved. Of course, the content, methods, learning context, and student assessment interact and influence each other in much the same way as they do in other curricula. However, student placement and advancement are not determined in "traditional" ways. Within this framework, it is also important to consider how the curriculum will be evaluated, including an evaluation of whether the outcomes were, in fact, significant, meaningful and appropriate.

The most important feature of outcomes-based education is that *all students are expected to be successful*. It is this desire to have students succeed that determines what content is presented to students, what learning experiences are made available to them, how they are tested, how long they engage in learning particular knowledge or skills, and, above all, what is valued in the educational process. The traditional concern for instructional time is replaced with a concern for student learning. This does not mean that the outcomes have to be trivial so that all students can be successful. Quite the opposite: all instructional efforts are directed towards helping students to achieve *significant* learning outcomes. In practice, this means that programmes have to be flexible so that students can engage in appropriate learning activities at the time that best suits their stage of understanding or mastery. It also means that assessment of student learning should focus on how well students understand rather than on how much they understand. [This issue is explored in great detail in Biggs & Collis, 1982.] Finally, it means that students must be given multiple opportunities to learn and to demonstrate their achievement of the outcomes. If you are concerned about this point, it is worth considering the consequences of an education system in which all students are not successful. Quite clearly, one of the consequences is that students who are not successful in the early stages of their education often remain unsuccessful for their entire school career.

Outcomes-based programming has some useful side benefits for students, particularly when a mastery approach to learning is emphasised. For example, Ames and Archer (1988) found that in classrooms that emphasised mastery, students were more likely to use effective learning strategies and to attribute their success to effort. The mastery approach also reduced the students' concern about their ability (because of an increased sense of efficacy) and encouraged them to attempt challenging tasks. Several of the suggestions that Ames and Ames (1991) make for enhancing student motivation support directly the philosophy of outcomes-based education. These suggestions include: communicating performance expectations in advance, emphasising student progress, reinforcing learning and effort, making known that mistakes and errors are part of learning, requiring reasonable effort, focusing on the role of effort and strategy in learning, making grades contingent upon reaching goals, communicating positive expectations, and making plans with students for improvement. In short, mastery learning and outcomes-based

programming make all instruction purposeful for students. They also empower students by helping them to see that their efforts will have some effect on their learning.

Much has been written about the importance of students being motivated if they are to learn (e.g., Brophy, 1986). The research findings in this area can be summarized in three main points: students need to know why they are learning whatever they are learning, they need to see some value in this learning, and they need to believe that they can be successful. Of course, the effects of these three points on student motivation are inextricably linked. It is easy to tell students why they are required to learn something, but this does not mean they will see any value in it, or that they will believe they are capable of learning. If learning activities are to motivate students, they must be seen *by the students* to be purposeful, useful and challenging but not impossible. For this reason, outcomes-based education places a lot of emphasis on preparing students for learning. This emphasis on learning also changes the definition of teaching. Teaching is no longer defined as the transmission of knowledge; instead, it is defined as the process of helping students to understand information and to transform it into their own personal knowledge. Teachers become facilitators of learning instead of transmitters of knowledge, and this is how it should be because no matter what you do as a teacher, you cannot claim to be teaching unless learners are learning.

Some teachers become concerned that outcomes-based programming (deciding in advance what you want students to learn) is too technical or mechanical or inflexible, and that it does not give teachers room to be innovative and creative. This is simply not true. In fact, the opposite is true. The goal of having *all* students succeed in achieving a set of meaningful learning outcomes implies that teachers must be innovative and creative in order to develop ways of helping students to achieve that goal. However, there is no doubt that OBE will require teachers to have a very thorough understanding of what they are teaching, and the insight to relate their prime subject matter to other learning areas. It is just not possible to take an integrated outcomes-based approach to teaching if you do not have a deep understanding of what you are teaching.

There are teachers who question the point of having students achieve outcomes that are not worthwhile, or outcomes that reflect someone else's biases. Clearly, there is no point in helping students to achieve worthless outcomes, and it is up to teachers to make sure that the outcomes upon which they focus their teaching are significant and important. The fact that someone else may have specified what those outcomes should be is of little consequence if the outcomes are worthwhile. Of course, no matter who formulates the outcome statements, teachers should always ask "Whose interests are being served by these outcomes?" In this regard, you might like to ponder whether or not you consider the outcomes in your syllabus documents, or the Key Competencies, are the most appropriate ideas on which to base education in Australia.

Another common criticism of outcomes-based programming is that it emphasises minimum levels of achievement and, therefore, encourages mediocrity. This can be true if very low minimum standards are set and if no attempt is made to provide opportunities for each student to achieve to their full potential. Some ways of avoiding these pitfalls are outlined below. If teachers want all students to learn well and to achieve specific outcomes, there are certain instructional procedures that must be followed, and each has implications for the way teachers plan and programme.

- Teachers must prepare their students adequately so that they can succeed. This requires teachers to understand exactly what they want students to learn, to anticipate difficulties that students might have and plan to minimise these difficulties. One of the most common reasons that students are not successful is that they do not have the necessary prerequisite knowledge and skills at the start of the period of instruction. You cannot simply ignore this

and hope that somehow the students will "catch up". You must identify what knowledge and skills students need before they try to achieve the new outcomes you have set and, if necessary, review essential prerequisites at the start of each lesson. You might also have to provide additional time or assistance to those students who need it.

- Teachers must create a positive learning environment in which students know that they will be helped in their learning no matter how easy or difficult they might find the learning process. To a large extent, this positive environment will depend on your relationship with the students, but it will also depend on your efforts to make the physical environment conducive to learning. For example, if you find that your class is overcrowded you may have to find some practical way of splitting the class. This might mean that you have less direct contact time with the students, but remember that the most important thing is what students learn, not how much time they sit in your class.

- Teachers must help their students to understand what they have to learn, why they should learn it (including what use it will be to them in the future), and how they will know when they have learned it. Do not assume that students will see the relevance of what you are teaching just because you know why you are doing it. And never teach anything for which you can see no useful purpose.

- Teachers must use a variety of methods of instruction in order to help each student to learn. You should not assume that all students can learn equally well from one particular teaching strategy, and you should not assume that any particular teaching strategy is a suitable way to help students achieve all learning outcomes. You need to select the most appropriate strategy after you have taken into account the outcomes you want students to achieve, the content you will use to help students achieve these outcomes, the characteristics of the students, and the resources that are available. You should not assume that the so-called "student-centred" strategies are always the best strategies to use in OBE. Often they will be appropriate, but sometimes more direct methods of instruction are appropriate (see Killen, 1998, for examples).

- Teachers must provide students with sufficient opportunities to practise using the new knowledge and skills that they gain, so that under the teacher's guidance they can explore and experiment with their new learning, correct errors and adjust their thinking. It is essential for students to be helped to apply their new knowledge and skills rather than just accumulate new knowledge and skills. Of course, application of knowledge and skills is also an essential component of authentic assessment.

- Teachers must help each student to bring each learning episode (lesson or group of lessons) to a personal closure so that they are aware of what they learned and where it is leading them. Do not assume that students can do this without your guidance.

If teachers want to be successful with their outcomes-based programming, they need to look at it from their students' perspective. Consider for a moment the questions that students might ask about any particular lesson (beyond the obvious "Is it in the exam?"). Some basic questions might be: What do I have to learn? Why do I have to learn it? What will I be doing while I am learning? Will it be interesting and useful? How will I know that I am learning what I should be learning? Will I have any say in what I learn? How will I be assessed? If teachers can answer these questions for their students they will be well on the way towards developing an effective outcomes-based approach to teaching.

To programme effectively, teachers need to consider both short-term and long-term outcomes so that the knowledge, skills and attitudes they help students to learn day by day will integrate to become desirable long-term outcomes. It is important that teachers start by considering the long-term outcomes and work backwards to specify the short-term outcomes that will guide their unit and lesson planning. The alternative of starting with the fine detail (planning lesson by lesson without an overall framework) is unlikely to produce an integrated and meaningful end result.

In summary, the starting point for outcomes-based programming must be a clear definition of the outcomes that students are to achieve, and some effort must be made to indicate the priority of each of these outcomes. Next the teacher must describe, in detail, the knowledge, skills and dispositions that students must develop in order to achieve these outcomes. Having done that, the prerequisites that students need before they attempt to develop their new knowledge, skills and attitudes should be made explicit. When addressing the issue of teaching methods and learning experiences, teachers must consider alternative ways of helping students to achieve the outcomes, keeping in mind that not all students will learn at the same rate or learn equally well from the same experiences. Planning becomes a process of anticipating possible activities, rather than predetermining specific activities. As a result, content needs to be seen as a support base for addressing and facilitating students' achievement of the outcomes, rather than as an end in itself. These considerations should lead teachers to identifying the relative difficulties that students are likely to have in achieving each outcome, and to a consideration of the interrelatedness of the outcomes. When teachers can state clearly how they will determine whether or not students have achieved each outcome, and to what level of competence these outcomes are to be demonstrated, they will be ready to develop an appropriate system for assessing individual students and reporting their progress.

At first reading, the above ideas might suggest that outcomes-based programming is a linear operation that progresses in a lock-step fashion from outcomes to content to teaching strategies to assessment. Nothing could be further from the truth. Outcomes-based programming is an iterative process in which considerations of content, teaching methods and assessment are integrated around a common concern for what students will learn. At each step of the process, teachers must reflect on the ways in which the elements of the curriculum influence one another.

The issue of integration

In a whole-school approach to OBE, programmes will be guided by long-term goals that are not subject-specific (e.g., the Key Competencies)—programmes will not be based on isolated subjects such as mathematics, history or physics. In such an integrated approach, knowledge, skills and ways of thinking from various traditional subjects are combined to help learners achieve the required outcomes. In practice, this will mean that specific outcomes from various Key Learning Areas will need to be grouped and used as a focus for units of study. This process of "clustering" outcomes from different KLAs could follow four basic principles:

- The purpose of clustering is to encourage an integrated approach to learning.
- The selection of specific outcomes must be done in such a way that the essential conceptual and thematic integrity of particular learning areas is not lost.
- A learning programme may have a primary focus on one or more learning areas but should also draw on specific outcomes, content, process or context elements from other learning areas.
- Learning programmes should not follow a permanent formula for clustering outcomes. The programmes should be developed and modified to meet the changing needs of the students.

To put these principles into practice, a teacher could:

- Decide on a theme for the programme (or unit of work) based on one or more specific outcomes from one KLA.
- Select several specific outcomes from other KLAs that can easily be related to the theme.
- Develop the programme in a way that integrates these outcomes into a coherent study that will allow students to make progress towards at least one of the Key Competencies.

Some teachers might be concerned that an OBE system devalues traditional subjects (such as history, or physics, or art), or even eliminates them from the curriculum. This is a legitimate concern, particularly for those teachers who have devoted their careers to specialising in a narrow subject area. However, it is perhaps more important to have an education system in which each subject is valued for the contribution that it can make to students' achievement of the Key Competencies, rather than for its intrinsic value. This might be hard for some teachers to accept, but the following points might help you to understand the logic behind this approach.

If we agree that the Key Competencies are an appropriate long-term goal for learners, then we must consider how to make best use of the limited resources (including time) that are available to help learners achieve these outcomes. It seems that such long-term outcomes are best achieved by having learners develop knowledge, skills and dispositions through a system that puts learning in context and integrates different fields of study so that all learning is pertinent and relevant. It can be argued, for example, that a Key Competency such as "*collect, analyse, organise and critically evaluate information (in real life situations)*" is most likely to be achieved if it is approached from a multidisciplinary perspective. It is clearly an outcome that would be difficult to achieve if it was approached through just a single subject such as history or physics. Some might argue that it could be approached through a number of *separate* subjects, each dealing with the collection, analysis, organisation and evaluation of information from the perspective of that particular subject. This might be effective, but it relies on the student being able to make connections between the subject-specific skills that they are developing and the overall real-world application of this knowledge and skill. It may be easier for students to develop and use the knowledge and skills if the content and teaching processes emphasise the integration by removing some of the artificial barriers between subjects.

This does not mean that teachers will no longer be able to teach traditional subjects, or that traditional subjects are no longer of any value. It does mean that these subjects will have to be taught in new ways that emphasise how they relate to one another and that emphasise their contribution to long-term goals such as the Key Competencies. It also means that programmes of study will need to be built around Key Learning Areas rather than subjects, and that the learning areas need to be integrated with one another. At a simple level this will mean that an outcome such as *learners show critical awareness of language usage* (from the English KLA) would not be achieved through a study of English alone. Rather, it would be achieved through an ongoing study of how language was used in each of the Key Learning Areas. Of course, this important aspect of OBE requires teachers to take new approaches to their teaching and new responsibilities for the overall learning outcomes of their students. A teacher of mathematics, for example, can no longer see themselves as being responsible for teaching mathematics in isolation, or teaching it simply because mathematics has some inherent value. They must now see themselves as teaching mathematics because it will help students to achieve much broader outcomes and they must teach it in a way that will help students to see how mathematics relates to the other things that they are learning. Almost certainly, this will require the mathematics teacher to teach in a way that is different from the way in which he/she studied mathematics as a student.

TEACHING STRATEGIES FOR OBE

Teaching is only teaching if learners learn. Therefore, "it remains the responsibility of educators to construct meaningful learning experiences that lead to the mastery of outcomes" (Cockburn, 1997:7). To construct meaningful learning experiences, teachers have to make informed decisions about teaching strategies. It is often said that there are two basic approaches to teaching: teacher-centred and student-centred. In some ways, this is an unfortunate set of labels to use because learning (and, therefore, learners) should be at the centre of *all* teaching. However, these labels certainly convey the idea that in some approaches to teaching the teacher plays a more direct role than in other approaches. ***Teacher-centred approaches*** are also referred to as direct instruction, deductive teaching or expository teaching—examples are lectures and demonstrations. In these methods of teaching, the teacher controls what is to be taught and how students are presented with the information they are to learn. ***Student-centred approaches*** (also referred to as discovery learning, inductive learning, or inquiry learning) place a much stronger emphasis on the learners' role in the learning process—examples are co-operative learning and student research projects. When you are using student-centred approaches to teaching, you still set the learning agenda but you have much less ***direct*** control over what and how students learn. You are no longer a filter through which all information must pass before reaching the learners. The two approaches to teaching differ in a number of important ways, including what the teacher does, the organisation of instruction, how much the students are involved actively in learning, and how much the students are responsible for their own learning. In either approach, you have a central role as both the planner and the facilitator of student learning. The real difference is in how you structure and mediate your students' learning. On the basis of the way in which learning is organised, teaching strategies are often given labels such as lecturing, whole-class discussion, group work, co-operative learning, problem-solving, student research, and so on. Killen (1998) describes how these strategies, and several others, can be used in a wide variety of teaching situations, and stresses that no one strategy is a suitable way to help students achieve all learning outcomes. It is rather unfortunate that the success of OBE is often seen to depend on the extent to which co-operative learning is used; this is probably because one of the long-term outcomes of OBE is usually related to team work and co-operation. Co-operative learning should be used as part of any OBE system, but it is by no means the only teaching/learning strategy that should be employed.

Whatever approach to teaching you use, it is important to keep the following points in mind:

- Your main focus should be on LEARNING rather than teaching.
- Students cannot learn if they do not THINK.
- Thinking is facilitated and encouraged by the PROCESSES that you use to engage students with the content, as well as by the CONTENT itself.
- Your subject does not exist in isolation—you have to help students make LINKS to other subjects.
- You have a responsibility to help students LEARN HOW TO LEARN.

In an OBE system, you cannot assume that all students will learn equally well from a strategy such as small-group discussion, and you cannot assume that all students will learn the same things in any fixed period of time. If you are to help all students to achieve the outcomes related to what you teach, you must be flexible in the way that you teach and in the expectations that you have for each student at any particular time. You must accept that, in most lessons, students will be at different stages of learning and, therefore, that they will be concurrently working towards different short-term outcomes. In order to help each of the students in your class (within the constraints of a traditional school system), you will need to be innovative, and you will probably find that you will not be using whole-class instruction very often.

One way to be flexible is to create an organisational structure that will allow some whole-class instruction (to revise prerequisite knowledge and to outline new areas of study), some group instruction (for students who are at equivalent stages in their progress towards common outcomes), and some individual instruction (for students who are learning substantially faster or more slowly than others in the class). In part, this can be achieved through a form of streaming that places students at equivalent stages of learning in groups where all students are working towards common goals. However, such groups will have some special features: they will be based on students' stages of learning (not on their ability or potential to learn); they will be flexible so that students can move from one group to another if their rate of learning or level of understanding no longer matches those of the other members of the group; there will be no special status attached to students in any particular group because the aim is for all students to be successful; and once students have achieved all the required outcomes in a particular topic (or subject) they can stop studying that topic and devote their time to other topics in which they have not yet achieved all the outcomes. Within each of the groups, the teacher is free to have students engage in whatever learning experiences are most suited to their current stage of understanding.

If this approach to student learning is to be successful, students must be prepared to accept difficult goals and strive to achieve them. In order for students to accept this responsibility for their own learning, it will be necessary for the goals to seem *reasonable to the students;* for achievement of the goals to result in an outcome that is *desirable to the students;* for the students to have a high level of *self-confidence* and a record of *prior success*; and for the teacher to organise the learning environment so that students work relatively independently.

When teaching is focused on students' achievement of particular outcomes, it is necessary to consider the knowledge, skills, attitudes and preconceptions that students have prior to instruction. Teachers must also consider their students' developmental level and the other factors that influence the rate at which they can learn. Equally important, teachers must consider their own knowledge, skills and attitudes relevant to the outcomes, because these will influence how teaching is approached. Additional factors such as the relationships between particular outcomes, the resources that are available, and any constraints (including social and political pressures) must also be considered. Once the teacher has a clear picture of all these things, it should be possible to plan an initial period of instruction in which most students will achieve the desired short-term outcomes, and in which provisions can be made for those students who learn at faster and slower rates. All this requires careful planning.

Successful learning for all students is both the starting point and the bottom line of outcomes-based planning. For this reason, all decisions about instruction should be guided by a consideration of which approach will be most likely to enhance students' efforts to achieve the desired learning outcomes. One approach that can be highly successful is based on the suggestions of Vickery (1988), and it involves the following:

- Start by assessing the students' prerequisite knowledge and skills; if they do not understand essential prior knowledge or if they do not have the skills on which you want to build you must provide instruction on these prerequisites.

- Next, prepare the students by explaining the outcomes that they are to achieve (what they will be able to do when they have completed the unit satisfactorily). To be meaningful, each outcome must be placed within an appropriate context and it should be related to one or more of the Key Competencies.

- Then provide whatever forms of whole-class instruction or individual/group work you consider will have the best chance of enabling all the students to achieve mastery of the unit.

- Next, organise guided practice for the students so that they can be evaluated informally and provided with feedback to enhance their learning. The emphasis here is on *successful* guided practice through careful selection of examples and problems.

- When most students seem to be ready to demonstrate mastery, assess their learning, or have the students assess their own learning through an appropriate form of self-assessment or peer assessment. This assessment should take into account the context in which outcomes should be demonstrated.

- Students who have achieved mastery then work on enrichment activities while those who have not achieved mastery receive additional instruction and practice.

- All students then take a summative test. Those who do not demonstrate mastery on this test receive an "incomplete" grade that they are required to convert to a mastery level through additional effort. Students are encouraged to take some responsibility for their own learning, and continued support from the teacher becomes contingent upon the students' acceptance of this responsibility.

This general approach can be varied to suit particular subject areas and groups of students. Of course, teachers cannot expect instant success with outcomes-based programming. In particular, they may have to introduce gradually the idea that the teacher is responsible for creating situations in which students can learn, but the students are ultimately responsible for their own learning.

If this approach to teaching is to be used, the outcomes-based programme would need to include the following:

1. A clear set of outcomes that all students will achieve (if you like, a minimum set of outcomes). Teachers will need to select, from all the possible outcomes, those that should be given top priority. These should be the learning outcomes that will be of most value to the students and they should be written in language that the students can understand. It is often useful to provide examples to students of what they will be able to do when they have achieved those outcomes.

2. A clear set of suitably graded extension outcomes for those students who progress beyond the minimum outcomes. These extension outcomes should provide students with a deeper understanding of the issues being studied, rather than take them on to the next issue that all students will study.

3. A detailed specification of the prerequisites that students must master before attempting to achieve each new outcome.

4. Plans for several different teaching strategies that can be used to help students achieve the desired learning outcomes.

5. Plans for guided practice sessions during which students can receive feedback on their progress towards the learning outcomes.

6. A variety of tests to provide both the teacher and the students with feedback.

7. A variety of mastery tests (at different levels).

8. Resources and teaching techniques to assist students who do not master the required outcomes as quickly as other students.

Because of its focus on student success, outcomes-based education places much more importance on individual learning than many other approaches to education. One of the key questions in outcomes-based programming is "What are reasonable and attainable outcomes for *each* student?" Once that question has been answered, teachers need to consider how they will keep records of individual students' progress towards these outcomes. Record keeping becomes much more important than it might be in situations where testing is a necessary evil rather than an integral part of student learning. It is advisable to involve students in this record keeping so that they are reminded continually of the goals towards which they are working, and of the need for them to accept some of the responsibility for achieving those goals.

ASSESSMENT

When we focus our planning and instruction on the outcomes of education, it follows logically that we should consider the extent to which individual students achieve these outcomes—if you like, the extent to which our intentions have been realised. This means that we have to think about assessment, and in an OBE system this can be a concern for some teachers. However, good assessment practices in OBE are fundamentally no different from good assessment practices in any other education system. We should always use assessment procedures that are valid, reliable and fair. Spady's approach to OBE does emphasise the importance of criterion-referenced assessment in which the intended outcomes provide benchmarks against which student achievement can be judged. If students' achievement matches or exceeds these criteria, they are sometimes said to have achieved a certain level of mastery, or a certain level of competence. More recently, it has been recognised that criterion-referencing is somewhat restrictive and that standards-referencing provides a more useful framework for assessment and reporting (Killen, 2000).

The four defining principles of OBE have many important implications for assessment of student learning, and several of them will now be described. If the principles of ***clarity of focus*** and ***designing back*** are followed, then all assessment must be linked to the long-term significant outcomes that learners are to achieve, or to the short-term enabling outcomes that are derived from these long-term outcomes. It is simply not sufficient to focus assessment only on subject-specific outcomes that ignore the long-term purpose of the programme of study. This means, for example, that students' progress towards achieving the Key Competencies should be assessed regularly. It is not sufficient to make sweeping claims such as "the programme will assist students to achieve the Key Competencies"—the way in which this happens and the way in which it is assessed must be transparent.

The ***designing back*** principle is based on the idea that each component of learning is included in a curriculum because it has been identified as contributing directly to learners' achievement of higher-level outcomes that contribute to even more complex outcomes that eventually lead to the exit outcomes of the programme. Thus it becomes very important to identify when a learner is ready to engage in the next level of learning—this cannot be done without valid and reliable methods of assessment. When achievement of long-term significant outcomes is seen as the real purpose of a course of study, then the predictive validity of the discrete assessment tasks throughout that course becomes very important. Teachers need to know the extent to which achievement of each enabling outcome is an accurate indicator of a student's progress towards the long-term significant outcomes. Quite clearly, this means that assessment tasks must be as authentic as possible because assessment in a realistic situation has inherently greater predictive

validity (for long-term life-role outcomes) than does assessment in non-authentic ways (such as paper and pencil tests).

If the principle of ***high expectations*** is followed, then the assessment tasks must be challenging, not simply routine; the assessment must provide scope for students to demonstrate deep levels of understanding and high levels of achievement; it must be possible to discriminate between low and high levels of achievement; and excellence in student achievement must be recognised and rewarded. Teachers cannot begin to implement this principle until they are able to define clearly a range of possible levels of understanding of the things they are teaching. For example, it is not sufficient for a science teacher to say that she/he wants students to "understand the concepts of velocity and acceleration". The teacher must be able to define what these concepts are and what it means to understand them. Further, the teacher must be able to describe the difference between understanding these concepts well and understanding them poorly, and be able to define some minimum level of understanding below which they will not be satisfied with their students' achievement.

If the principle of ***expanded opportunity*** is followed, students who do not achieve appropriately high levels of understanding at their first attempt must be provided with further opportunities to learn and to demonstrate their learning. Of course, teachers must work within the constraints imposed by formal education (e.g., submitting student results by a fixed date), but they must try to adapt to the needs of their students. It is not appropriate to simply expect students to adapt to their teacher's (or the institution's) preferred way of teaching and assessing. These things cannot be achieved unless teachers take a very flexible approach to assessment.

To be useful in an OBE system, assessment should conform to the following principles:

1. The assessment procedures should be valid—they should actually assess what you intend them to assess.
2. The assessment procedures should be reliable—they should give consistent results.
3. The assessment procedures should be fair—they should not be influenced by any irrelevant factors such as the learner's cultural background.
4. Assessment should reflect the knowledge and skills that are most important for students to learn.
5. Assessment should tell teachers and individual students something that they do not already know. That is, it should stretch students to the limits of their understanding and ability to apply their knowledge.
6. Assessment should be both comprehensive and explicit.
7. Assessment should support every student's opportunity to learn things that are important; and,
8. Because learners are individuals, assessment should allow this individuality to be demonstrated.

In OBE, assessment should always contribute to the goal of improving students' learning. If assessment is going to support learning, then assessment tasks must provide genuine opportunities for students to demonstrate what they have learned and to help them identify what it is that they still need to learn. Because learning is a process of continually restructuring prior knowledge, not just adding to it, assessment should help students to connect what is being learned to their prior knowledge. This can be done, for example, by using portfolios as both a learning and assessment tool, by giving students marking guides in advance so that they will know how they will be assessed, and by allowing students to revise their initial responses to some assessment tasks. Of course, the results of assessment should always be conveyed to students clearly, and as soon after the assessment as possible.

Students learn important things when they use their knowledge and skills in relevant contexts and in ways that require them to apply what they know and to extend their thinking. Learning comes alive for students when it comes through experiences they find meaningful and valuable. It is often claimed that students learn best and retain what they learn when they engage actively in learning, when they are encouraged to reflect on their experiences, and when they have opportunities to communicate with others about the things they are learning (Killen, 1998). Assessment in an OBE system should embody all these principles so that it becomes just as much a part of the learning process as any formal instruction. This goal cannot be achieved without first establishing a clear vision of what students are expected to learn.

The idea that some students can learn well and others cannot is alien to the philosophy of OBE. Therefore, assessment should be used to show students what they have learned and what they still need to learn; it should not be used to filter students out of educational opportunity. The old idea that examinations should be used as a means of failing students and denying them access to further education (either temporarily or permanently) is not consistent with the OBE philosophy that all learners can succeed if they are given appropriate opportunities and time to do so. This does not mean that every learner "passes" or that standards are no longer important. It does mean that assessment needs to be referenced to predetermined standards and that learners should be given multiple opportunities to demonstrate their competence.

Designing assessments to enhance equity will require conscientious rethinking not just of what we assess and how we do it but also of how different individuals and groups are affected by the assessment procedures we use. The challenge here is to devise assessment tasks with sufficient flexibility to give students a sense of accomplishment, to challenge the upper reaches of every student's understanding, and to provide a window into each student's thinking. To do this, you may have to permit students multiple entry and exit points in assessment tasks and allow students to respond in ways that reflect different levels of knowledge or sophistication. However, there are no guarantees that such assessments will be fairer to every student, that every student will perform better on these assessments, or that differences between cultural, linguistic, and socioeconomic groups will disappear. Equity implies that every student must have an opportunity to learn the important knowledge and skills that are assessed, and students cannot be assessed fairly on content that they have not had an opportunity to learn. Assessments can contribute to students' opportunities to learn important things only if they are based on standards that reflect high expectations for all students; there can be no equity in assessment as long as excellence is not demanded of all. If we want excellence, the level of expectation must be set high enough so that, with effort and good instruction, every student will learn important knowledge and skills.

No matter how an education system is organised, some people will always want to make comparisons between the achievements of learners. In some situations this is almost impossible to avoid. However, we should not make unfair comparisons. Fair inferences can be drawn from assessment results, and valid comparisons can be made, only when assessment data include information on the nature of the learners, the learners' opportunities to learn the material assessed, the adequacy of resources available to the learners, and the methods of assessment. However, it must be emphasised that comparisons of individual learners, particularly norm-referenced comparisons, are not necessary in an OBE system. Comparisons of groups of learners (say, the learners from different schools) may be used to identify areas of disadvantage or to highlight the excellence of particular approaches to teaching/learning.

The more realistic assessment procedures are, the clearer picture teachers will have of what their students are learning. As Gardner (1991) suggests, this realism in testing is essential if teachers are serious about knowing what students have learned. "If, when the circumstances of testing are

slightly altered, the sought-after competence can no longer be documented, then understanding—in any reasonable sense of the term—has simply not been achieved" (p.6). Teachers cannot get this realism in testing if they do not know in advance exactly what it is that they want students to learn and why they want them to learn it. When trying to clarify these things, it is worth considering alternative ways of uncovering and describing students' understanding, because traditional methods of assessment may not give students appropriate opportunities to reveal their knowledge or skills. Techniques such as those described in the "authentic assessment" literature (e.g., Hacker & Hatherway, 1991; Steele, 1992; Williams, Johnson, Peters & Cormack, 1999) or individualised assessment procedures such as the SOLO taxonomy (Biggs & Collis, 1982) are worth considering.

There is not scope in this paper for examining the full range of arguments about different approaches to assessment and readers are referred to Williams, Johnson, Peters and Cormack (1999) for an exploration of some of these issues. Suffice to say that outcomes-based education emphasises student success rather than failure and this should be reflected in the way students are assessed. Assessment methods should be authentic and should provide opportunities for students to demonstrate what they know and what they can do with their knowledge.

STUDENT RESPONSIBILITY FOR LEARNING

In an OBE system, it is often suggested that "learners are responsible for their own learning and progress" (Cockburn, 1997, p.6). This issue is likely to cause some concern for learners, teachers and parents because of a misunderstanding of the philosophy behind the principle. The principle acknowledges the fact that, ultimately, no matter what teachers do, learning is an internal and personal event. The teacher cannot learn for his/her students; the teacher can only facilitate that learning. In this regard, OBE emphasises the teacher's responsibility to clearly define the outcomes and to assist students to achieve those outcomes. It also emphasises the learner's responsibility to try to achieve the outcomes.

One of the problems that may be caused by making students responsible for their own learning is that they may have great difficulty in knowing whether or not they *are* learning. It might be easy for them to see that they are making mistakes or that they are answering questions incorrectly, but this does not necessarily mean that they are conscious that they are not learning. Lack of success may be equated with lack of effort rather than lack of understanding. Even when students know what it is they should be learning, some have difficulty in identifying why it is that they are not understanding (Killen, Meade, Yli-Renko & Fraser, 1996). This places a new responsibility on teachers to help students diagnose their approaches to learning and to judge their understanding. One of the benefits of outcomes-based education is that it helps students to become aware of what they should be learning, aware of what they are actually learning, and aware of the control that they have over their own learning.

CONCLUSION

Within the framework of the OBE premises and philosophies outlined in this paper, all decisions about planning, teaching and evaluation are guided by four simple questions: What do we want students to learn? Why do we want students to learn these things? How can we best help students to learn these things? and, How will we know when students have learned?

These principles can be seen as an interesting mixture of philosophical stances, but clearly they are rooted most firmly in logical empiricism. Perhaps the most radical component of Spady's view on OBE is that we should not allow schooling (or other aspects of education and training) to be driven by an "educentric paradigm—a paradigm defined by what the system is and (always) has been rather than by what it should and could be if student learning and future success in the Information

Age were its true purpose and priority" (Spady, 1998:10). We could say that this was a critical theorist stance—a realisation that our education system has been shaped by society and, very importantly, that society has changed more rapidly than the education system that it created.

The notion that educational institutions, and the teachers who work within them, control the conditions that determine whether or not students will learn is consistent with systems theory. In fact, Spady has a deep concern for how education operates as a system. Like many other systems theorists, he is willing to view education from perspectives that are non-educational, and in so doing he has constructed a new paradigm for education. He advocates very strongly that successful implementation of OBE requires major system changes at all levels—from classroom to institution to legislature. However, to assume that OBE provides education with a text as a way of doing things to suit all educational contexts, turns OBE into an ideological fixation. Successful implementation of OBE will require teachers to be able to contextualise the principles of OBE to suit their particular situation.

From these principles, it should be clear that OBE is not an “event” but a total approach to education. It is not something that has to be “fitted in to the timetable” but rather a set of ideas that influence the total school curriculum. A teacher once told me that “We only do OBE on Fridays”. That was like saying “On Fridays we care about what students learn, on other days it does not matter”.

Several references have been made to points on which educators or parents might be concerned about OBE. In general, my response to critics of OBE is to say: first understand it, then try it, then criticise it. No system of education is perfect, and no system will “work” unless teachers are committed to it. It is true that in some other countries OBE has not been the spectacular success that its advocates hoped it would be. For example, some legislative attempts to introduce OBE in various States of the USA have failed because those charged with defining the essential competencies have placed undue emphasis on outcomes that focus on social reform rather than academic achievement and this has produced considerable community opposition. (See, for example, Manno, 1994.) The experiences in other countries should not be ignored, but neither should they be used as an excuse for opposing OBE before objectively and thoroughly considering how it might work in the Australian context. As always in education, it is good to learn from the successes and mistakes of others, but it is important to base your opinions on personal experience rather than prejudice. By taking a balanced view, it should be possible to identify the aspects of OBE that work and those that do not. Glatthorn (1993) provides a good example of how such an objective evaluation of OBE can be made.

Before being too critical of OBE, it is worth considering for a moment the question of why children attend school. A simple answer is that children attend school in order to be educated. Simplifying this notion further, children attend school in order to learn. If the purpose of school is to have children learn, then it makes no sense to force children to attend school unless someone has decided what it is that they should be learning. Herein lies the problem. The decisions about what children should learn at school are, to a large extent, made by adults—teachers, curriculum planners, parents, politicians, university lecturers, and so on. Inevitably, the decisions are a compromise: firstly because those involved in making the decisions will have diverse ideas; secondly because of the practical constraints that limit what can be achieved with limited resources. No-one is ever likely to come up with a set of outcomes that everyone agrees are the best possible outcomes. It is, therefore, important that all outcomes are seen as problematic. Let’s not shoot the messenger if we don’t like the message. If you disagree with some of the outcomes that are being specified for school children, or for learners at any other level, then argue against those particular outcomes and suggest more appropriate ones. Do not pretend that no outcomes can be appropriate just because the present ones are not to your liking.

One of the reasons that outcomes-based education can lead to successful student learning is that it encourages teachers to be well prepared. Teachers simply cannot provide students with appropriate opportunities to learn if they do not take the trouble to assess the students' prior knowledge, to identify possible difficulties, to select appropriate content and learning experiences, to reflect on the moral and ethical principles implicit in their teaching, and to consider all these things in light of the needs, interests and backgrounds of particular students. Outcomes-based programming makes teaching purposeful and systematic, rather than haphazard, while still allowing students to discover, to follow their interests, to take responsibility for their own learning, and to develop both personally and academically. It enables teachers to provide students with *appropriate* and *purposeful* learning experiences and opportunities so that they can develop originality, self-motivation and independence at the same time as they acquire useful knowledge and skills.

Of course, it must be acknowledged that there will be some teachers who do not like the idea of outcomes-based programming. When considering why this is the case, teachers should ask themselves questions such as: Is it because I think the system in which I work is too inflexible to allow me to use outcomes-based programming? Is it because I think it would take too much time to plan and implement? Is it because I believe that students do not have a right to equality of learning opportunities? Is it because I believe that just a few students should be successful, and that the rest should simply accept that the education system (including me) is too inflexible to provide them with the type of instruction that will allow them to succeed? Is it because I believe that student aptitude should be defined in terms of the levels at which they can perform at a given time, rather than in terms of the rate at which they can acquire new knowledge or skills? Is it because I believe I cannot define clear learning outcomes in my subject area? Is it because I disagree with the idea that someone else might specify the learning outcomes that my students are to achieve? Is it because I feel incompetent to programme for outcomes? Is it because I think that the only outcomes that can be specified are trivial? Is it because I feel comfortable doing what I currently do and I don't want to change? Is it because I do not want to be accountable for what I teach (or fail to teach) my students? Or, is it because I have a better way of ensuring that all students learn to their full potential in my classes?

As well as pondering these questions, teachers can benefit from reviewing some of the assumptions they make about teaching and learning, perhaps by asking themselves questions such as: Do I assume that all my students have the prerequisite knowledge to learn what I want them to learn in each of my lessons? Do I assume that all students will learn equally well from the teaching techniques that I use? Do I assume that all students understand why I want them to learn whatever I am teaching? If I know that some of these assumptions should not be made, do I ignore it and choose to act on the myth that all students are the same?

If teachers want to succeed with outcomes-based education, they need to adopt the position that "there is no such thing as failure, only feedback and results . . . success depends on how well we process the feedback we get regarding our efforts" (Alessi, 1991, p.14). They should also encourage students to adopt this approach to learning as they strive to achieve significant and worthwhile outcomes. Teachers will know that they are achieving their goals when all students are successful, and until that time no-one involved in education should be satisfied with their efforts.

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