

Outcomes-Based Education: A PNG Perspective

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Abstract

This article explores the underpinning principles of outcomes based education (OBE) and aims to dispel some of the confusion and lack of understanding that surrounds it. The article draws upon the work of William Spady (1994, 1998) who is regarded as an authority in this field. Four essential principles of OBE are clarity of focus, designing back, high expectations and expanded opportunities, which are underpinned by the understanding that 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; and schools (and teachers) control the conditions that determine whether or not students are successful in school learning. While outcomes can be written for traditional, transitional or transformational goals, it is the transformational approach that has been adopted by the current curriculum reforms in Papua New Guinea. This provides the opportunity for greater accountability for the outcomes of education to prepare students to be competent future citizens

Introduction

Although awareness is growing about the outcomes based reform curriculum that has been developed in Papua New Guinea, it is surprising how little understanding teachers have of the underpinning principles of the approach and its benefits for learners. While recognising that there are critics as well as advocates, this article explores characteristics of outcomes-based education (OBE) and relates them to the current curriculum reforms. At this early stage of OBE implementation in Papua New Guinea, the need is for educators to understand the basic principles of an outcomes based approach and why teachers from elementary to grade twelve, and increasingly in other levels of the education system, are being challenged to adopt it as their practice. The article is intended to raise awareness of the principles and application of OBE to planning, teaching and assessment of student learning. This paper supports the notion that 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.

What is outcomes based education?

Outcomes based education focuses on what students can actually do after a learning experience. While many educators have contributed to the discussion on outcomes-based education, William Spady (1994, 1998) is widely regarded as OBE's leading advocate. Spady (1994:1) and his ideas have had a significant impact on the approach adopted in Papua New Guinea and in other countries. He explains outcomes based education as follows:

Outcomes Based Education means clearly focusing and organising everything in the education 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 organising the curriculum, instruction and assessment to make sure that learning ultimately happens (Spady 1994:1).

The validity of the approach assumes that the officers of the Curriculum Development Division in consultation with community stakeholders can determine what things are 'essential for all students to be able to do' to be effective citizens, and that it is possible to achieve these things through appropriate classroom practices.

By making explicit what we want students to know and be able to do – the outcomes of their learning – OBE provides a clear picture of the knowledge, skills and values to be gained and demonstrated as students progress through a program. OBE is concerned with clear statements of the outcomes of an educational program that curriculum developers consider are critical for all students to be effective citizens in real life situations.

The definition of 'outcomes' is important to understand this approach to education. Spady and Marshall (1994:20) wrote:

Outcomes are 'clear, observable demonstrations of student learning that occur after a significant set of learning experiences. They are not values, attitudes, feelings, beliefs, activities, assignments, goals, scores or averages, as many people believe. Typically these demonstrations reflect three things:

- ❖ What the student knows
- ❖ What the student can actually do with what he or she knows
- ❖ The student's confidence and motivation in carrying out the demonstration.

Education that is outcome-based is learner centred, results oriented and founded on the belief that all students can learn. James Towers (1996:19) lists four points that are necessary for an outcomes-based approach.

- ❖ What the student is to learn must be clearly identified.
- ❖ The student's progress must be based on demonstrated achievement.
- ❖ Multiple instructional and assessment strategies need to be available to meet the needs of each student.
- ❖ Adequate time and assistance needs to be provided so that each student can reach their maximum potential.

Three underpinning premises

Outcomes Based Education is underpinned by three 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 in school learning.

On to these points we can overlay the philosophical base suggested by Albert 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.)

Four essential principles

Following on from the premises that underpin OBE, Spady developed four essential principles: clarity of focus, designing back, high expectations and expanded opportunities. Unless these are present, a person, school or system cannot be said to be using an outcomes based approach.

Clarity of focus

The first principle, clarity of focus, means that all planned learning must be clearly focused on what we want students ultimately to be able to do successfully. Two implications are for outcomes to be clearly expressed in demonstrable terms and for student assessment to focus on clearly defined significant outcomes. Students have a better chance of experiencing genuine success when they clearly understand the goals for which they are striving (Charles 1999:244). The starting point is the clear definition of learning outcomes in the syllabus documents and letting students know what they are aiming for. We start where we want to end up.

Teachers often ask for an explanation about the difference between 'objectives' (a concept with which they are familiar) and 'outcomes'. A useful distinction I have found is that objectives use future tense and outcomes use present tense. An objective may state, 'By the end of a unit students will be able to 'apply and use the four operations - add, multiply, divide and subtract- to do calculations with three and four digit numbers'. As an outcome, it is written as, Students can ..., Students are able to ..., or simply Students ... 'apply and use the four operations - add, multiply, divide and subtract- to do calculations with three and four digit numbers'. The objective states the 'intent' of what the teaching should lead towards. By comparison the outcome wording is the endpoint.

Outcomes are very learner-focused and clearly indicate the student performance to be demonstrated.

However, an outcomes based approach to education is far more than simply rewriting objectives into a present tense form. Killen (2000:3) observes that the concept is inappropriately used for a variety of educational practices that pay little more than lip service to the fundamental principles of OBE. A system can only be said to demonstrate an outcomes based approach when it incorporates the principles of clarity of focus, designing back, high expectations and expanded opportunities.

Designing back

The second principle, designing back, means that all planning, teaching and assessment decisions are made by tracing back to the desired end result. Consider an outcome such as: *Students investigate and implement practical ways to produce and prepare food for personal consumption or to generate an income* (PNG Department of Education Making a Living Syllabus, 2003:12).

From the outcome, the second step is to consider appropriate and relevant assessment tasks as evidence that the outcome has been achieved. This step so early in the planning process is a major difference from the traditional approach where teachers are often very concerned about the content they are to input before they consider assessment tasks for students.

Possible assessment tasks for the cited outcome could be that students:

- ❖ Gather information on a range of ways of preparing food for consumption or sale; survey demand for types of food to be sold
- ❖ Follow recipes, use different methods and utensils, serve and present food for different occasions
- ❖ Market food, estimate costs, calculate selling process and profit, advertise, package, serve customers, keep records
- ❖ Produce food, garden, fish, raise livestock.

By looking back at the outcome and then designing the assessment tasks, teachers then 'design backwards' to determine the content and activities needed to do the tasks. Curriculum relevance is an issue in Papua New Guinea. A benefit of the OBE approach is that teachers can design assessment tasks that are meaningful to students' lives in the context of the community served by the school. It should be evident that OBE is a very learner centred approach with the focus clearly on what students are to do.

Once the teacher determines the tasks by which students demonstrate knowledge, skills and attitudes as evidence of achievement of an outcome, consideration is given to what content and learning experiences could be provided to enable students to undertake the tasks successfully. This is the principle of designing back.

High expectations

The third principle, high expectations, means that teachers must establish high, challenging standards of performance and that these standards are achievable by all students. A concern about defining learning outcomes that are achievable by all students is that they might become trivial to ensure student success. Killen (2000:9) claims that quite the opposite is true and challenges critics to consider the consequences of an educational system where all students are not successful. The approach is to direct all instructional efforts towards helping students to achieve *significant* learning outcomes.

For all students to be successful there are implications for giving students multiple opportunities to learn and demonstrate their achievement of learning outcomes and this is covered by the next OBE principle of 'expanded opportunities'. Spady (1994) links helping students achieve high standards closely to the principle that successful learning promotes more successful learning. With OBE there are no 'fails'. Learners are either competent or working towards becoming competent. An important aspect of OBE is that all students are expected to be successful. If the principle of high expectations is realised, assessment tasks must be challenging with clearly defined criteria for expected standards.

A helpful guide to constructing tasks, which target various levels of thinking, is Benjamin Bloom's (1956) learning taxonomy for cognitive, affective and psychomotor domains. The revision of Bloom's taxonomy by Anderson and Krathwohl (2001) made minor but significant modifications to Bloom's six cognitive domains. The cognitive domain refers to knowledge structures with simply recalling facts being the lowest level. The modifications in the model of Anderson and Krathwohl include a higher level to 'create' new knowledge and uses verbs not nouns.

Table 1: Cognitive domain taxonomy

| Bloom | Anderson and Krathwohl |
|---------------|-------------------------------|
| Evaluation | Creating |
| Synthesis | Evaluating |
| Analysis | Analysing |
| Application | Applying |
| Comprehension | Understanding |
| Knowledge | Remembering |

Expanded opportunities

The fourth principle, expanded opportunities, argues that OBE provides for a flexible approach in time and teaching methodologies matched against the needs of the learner and allows more than one opportunity to succeed (Killen, 2000). It is linked to the premise that not all learners learn the same thing in the same way and the same time. However, most learners can achieve high standards if they have appropriate opportunities. While the endpoint is a fixed,

the time needed to reach a level of competency will vary according to individual abilities.

The traditional focus on covering a sequence of content in a set time is replaced with a focus on successful student learning no matter how long it takes. This may cause concern for teachers as they are used to operating within fixed times of a timetable with all students progressing at the same rate and succeeding or failing to achieve desired endpoints. In the outcomes based approach, students have expanded opportunities to achieve the outcome and experience success.

This principle can be closely linked to the competency-based approach to education that is adopted by flexible learning programs at Divine Word University and the Technical and Vocational Education and Training (TVET) programs in Papua New Guinea. Students have opportunities to re-do or re-submit assessment tasks until the standard for successful achievement is realised. The focus is clearly on successful student learning.

Competency based education is based on six critical components (Vander Horst & McDonald 1997:10-11):

- ❖ explicit learning outcomes with respect to the required skills and concomitant proficiency (standards for assessment)
- ❖ a flexible time frame to master these skills
- ❖ a variety of instructional activities to facilitate learning
- ❖ criterion-referenced testing of the required outcomes
- ❖ certification based on demonstrated learning outcomes
- ❖ adaptable programs to ensure optimum learner guidance.

All six components are prominent in the OBE approach. Competency based education also supports the concept that the learner is accountable for her or his own achievements. Malan (2000) argues that this is another major tenet underpinning OBE.

Three approaches to OBE

A variety of forms typify systems that have adopted an outcomes based approach to education. According to William Spady, outcomes can be written with traditional, transitional or transformational goals in mind. Spady advocates transformational goals and that is the approach taken in current curriculum reforms in Papua New Guinea.

Traditional OBE

Traditional OBE aims to produce academically competent students. The focus is on 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). Outcomes are aligned to existing programs and measured through test results based on mastery of content. Outcomes in this model operate like curriculum-

based objectives and, although they make the focus of the learner clearer, are written about existing curricula.

Transitional OBE

Transitional OBE is characterised by a wide range of practices between the extremes of traditional and transformational. At the more traditional end, teachers start with the content and identify some obvious skills needed for success in real life that might also be achieved as a result of learning experiences. At the more transformational end, teachers identify exit outcomes and then identify relevant content outcomes as the means for delivering the exit outcomes. The transitional version provides an opportunity to move traditional teachers towards more transformational practices.

Transformational OBE

Transformational OBE aims to produce competent future citizens. It has long-term, cross-curricular outcomes that are related directly to students' future life roles. It focuses education on complex real life situations in which there is an inherent demand for higher-order cognitive abilities. Outcomes for subjects are based on roles students have in life. Spady (1994) identifies life-performance roles such as 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 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 approach has a strong influence on motivation of students as it encourages students to acquire knowledge and skills that are considered important in their lives (Charles 1999:244). Achievements in transformational OBE are measured through projects, products and performance of learners.

This notion of orienting education to the future needs of students and of society in general, is an underpinning principle of the *Philosophy of Education for Papua New Guinea* (Matane 1986) and the *National Plan for Education 2005-2014* (Papua New Guinea Department of Education 2004). One of the reasons for the current curriculum reform was that the previous curriculum was not enabling the young to lead useful, happy and healthy lives in the community and to contribute positively to the future of the nation.

Features of a transformational OBE approach

Future oriented outcomes characterise the transformational OBE approach. Students are informed about what they have to achieve and the criteria by

which they will be judged. The process shifts from a content input approach to a competency output approach. Attainment of outcomes is not bound by time.

Students have expanded learning opportunities. The focus is on achieving outcomes according to ability. Flexible time frames and open-ended and creative programs support achievement.

The teacher acts as a facilitator providing continuous learning support. Teaching is no longer content driven but instead guides learners to discover new knowledge, skills and attitudes by reconstructing content for themselves with creative guidance from the teacher.

Advancement is based on successful attainment of pre-determined performance outcomes. Students advance through the program when they are able to demonstrate desired outcomes. They are assessed continuously and facilitated to attain the desired outcomes.

Transformational OBE is success oriented and allows for individual students to succeed according to their own abilities. The pass or fail approach is reduced. All students progress according to demonstrated competences.

Attainment of outcomes is determined by criterion assessment. The focus shifts from attaining a credit or distinction grade to a demonstration of competence at pre-determined levels. Competency criterion based assessment focuses on outcome achievement and not grading as such.

Transformational OBE allows for democratic input from the community and a negotiated curriculum. Collaborative structures ensure the competencies are relevant to life roles.

Concepts across the learning areas of the curriculum are integrated as they would be in real life. The focus shifts from mastering of content as an end in itself to a more holistic conceptual framework to use content for a meaning purpose.

Using outcomes to guide planning a teaching program

The first decision in planning from an outcomes based syllabus is about what students will learn and be able to do on completion of the program. Three key decision points are deciding on the outcomes that students are to achieve, deciding on an assessment plan to determine when students have achieved the outcomes, and deciding on content and teaching and learning activities to assist students to do the tasks which demonstrate that they have achieved those outcomes.

Teachers develop programs by interpreting national syllabus documents and applying the principles to guide their day-to-day activities. Three types with varying level of specificity are yearly programs, units of work and lesson plans. In the early stages of planning from an outcomes based syllabus, teachers are

encouraged to 'elaborate' on learning outcomes to identify appropriate content and learning activities. A unit of work may have the following structure:

- Grade or year level
- Strand
- Sub-strand
- Learning outcome
- Purpose
- Unit content: knowledge, skills and attitudes
- Overview of teaching and learning activities: process skills, teaching activities, learner activities, resources needed
- Assessment plan: method, task, criteria, recording

Subjects in PNG primary and secondary school syllabuses are organised by strands and sub-strands and the learning outcomes indicate progressive development from one grade to another. This is illustrated by the following example of learning outcomes taken from the healthy living sub-strand of the better living strand of the Making a Living Syllabus (PNG Department of Education, 2003:17)

Progressive development of learning outcomes

- Grade six:* Describe and demonstrate aspects of personal hygiene, nutrition and safety that promote a healthy lifestyle
- Grade seven:* Identify aspects of a nutritious diet and suggest how and where they might obtain, preserve, process and prepare these foods to meet nutritional requirements
- Grade eight:* Investigate and implement practical ways to produce and prepare food for personal consumption or to generate an income'

Assessment

The main purpose of assessment is to improve student learning. An outcomes-based curriculum is driven by assessment plans derived from well-defined learning outcomes. Teachers assess learner performance in relation to outcomes using criteria derived from those outcomes. Assessment needs to be meaningful and appropriate. The following example to illustrate criteria for an assessment task is taken from the draft Lower Secondary Personal Development Syllabus (Department of Education 2006:22-25):

Learning outcome 9.3.2: Students describe ways to deal with sexual health during adolescence safely including avoiding HIV and AIDS.

Assessment task: In groups, write and perform a short play on HIV/AIDS. The play might include issues such as:

- ways to manage sexual relationships safely
- pressures to engage in harmful practices
- strategies to minimise harm.

Assessment criteria

The assessment task will be assessed on the extent to which students can:

- identify a range of behaviours that contribute to sexual health risks
- describe and explain the effects of social and family pressure
- demonstrate appropriate strategies to reduce risk.

Outcomes based education highlights continuous and criterion referenced assessment in which the intended outcomes provide benchmarks against which student achievement can be judged. It adopts a holistic approach in describing a learner's competence in terms of knowledge, skills and values, and assessing competence by using a variety of assessment approaches.

In Papua New Guinea, much attention is given to addressing the issue of making learning relevant to societal needs. In preparing students for future roles in life, assessment tasks need to be 'authentic'. Malan (2000:26) describes authentic assessment as competencies in contexts that closely resemble situations in which those competencies are required. Assessment becomes a learning experience in which learners apply their knowledge, skills and values in an integrated manner to a meaningful task.

In an outcomes based approach, the focus is less on whether a learner has 'passed' or 'failed' and more on what outcomes a learner has achieved and in which areas a learner needs further support. Some educators argue (e.g. Lorenzen 1999:2) that by its very nature outcomes-based education eliminates traditional assessment tools such as tests or grades. However, the approach taken in Papua New Guinea is that assessment can be a combination of assessment methods that include tests and examinations. Examinations provide a measure of those aspects of the broad learning outcomes that can be reliably measured in an examination setting. Other methods are able to cover a wider range of syllabus content and outcomes than can be covered by examinations alone.

Reporting, particularly at the lower levels of schooling, moves away from the traditional system of marks and letter grades to one where outcome achievements or competencies are listed and shown as achieved or developing. This has the benefit of providing parents and employers with clear information about the knowledge and skills of the person. The problem is translating this form of assessment reporting into a form that parents and potential employers can understand (Furman 1994). 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, 2000:17). The Measurement Services Unit of the PNG Department of Education has developed Curriculum Standards Monitoring Tests (CSMT) for various levels of schooling to address this issue.

Some criticisms of OBE

It is acknowledged that not all educators are in favour of an outcomes-based approach to education. Killen (2000:4) states that sometimes it is because they disagree with the outcomes that have been mandated; but more often it is because they disagree with the basic idea of pre-specifying the outcomes of education. However he suggests 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)?’

It is argued that children go to school, college or university to learn something, and specifying just what that learning is, ought to help students to achieve it. The challenge to curriculum developers is the debate on what significant outcomes should be specified in a particular curriculum. However, this debate exists whatever approach to curriculum development is adopted. The OBE approach encourages a community collaborative approach is choosing significant learning outcomes.

Some educators are concerned about the loss of focus on content and traditional testing of student mastery of content. While some may regard this as a limitation, it is to the benefit of learning by the student that the content chosen under an OBE approach has meaningful application in real life situations.

Another concern of teachers is that deciding in advance what students are to learn stifles creativity and innovation. The reality is quite the opposite. Whether teachers are in highland, island or coastal mainland localities in PNG, they have great opportunities to be creative and innovative in choosing content and designing activities that are meaningful for their students as vehicles to achieve curriculum outcomes.

Another common criticism of outcomes-based education is that it may emphasise minimum levels of achievement and, therefore, encourages mediocrity (Killen 2000:10). This can be true if very low minimum standards are set and attempts are not made to provide opportunities for each student to achieve to their full potential. However, this is not a valid criticism with carefully thought out outcomes and having high expectations of students.

Conclusion

The change to an outcomes based curriculum in Papua New Guinea’s education requires major system changes at all levels. It cannot be overstressed that change takes time, begins with individuals and is best understood in practical terms. Successful implementation will require teachers to be able to contextualise the principles of OBE to suit their particular situation. In summary this article has attempted to argue a case for adopting the outcomes based approach to education by outlining the principles and application of OBE to planning, teaching and assessment of student learning, while pointing out its

benefits and limitations. From these principles it should be clear that application requires a total overhaul in how we approach teaching and that it is not simply a matter of replacing 'objectives' with 'outcomes' and doing what we have always done.

It is important that teachers in this country become committed to the reform curriculum. No educational change can succeed unless teachers are committed to it. To do that, they need to understand it. It is true that some education systems in Australia and America adopted an outcomes based approach and are now critical of it as it has not produced the anticipated results. In PNG we recognised that our old education system was not meeting the needs of society and a need for change was needed. With the assistance of outside donors, this nation has embraced the outcomes-based approach as the basis for reforming curriculum at a national level. My advice to teachers is to first understand it and then try it, before criticizing it. We now have a golden opportunity to revitalise the curriculum we implement with a clear focus on what students know and are able to do that prepares them to the kind of future citizens needed in Papua New Guinea.

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