

Outcome-based education and student learning in managerial accounting in Hong Kong

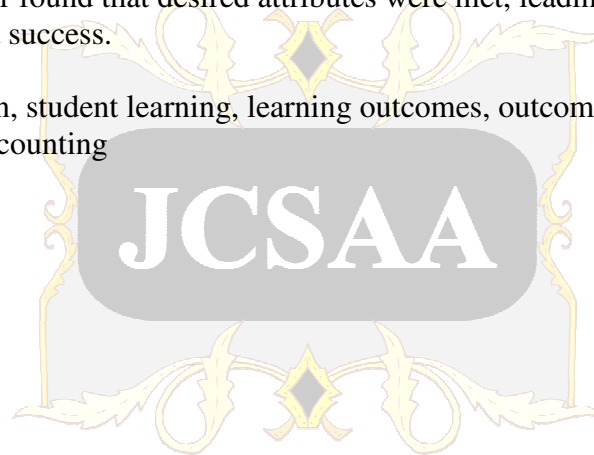
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ABSTRACT

Although Outcome-based Education has not been successful in public education in several countries, it has been successful in the medical fields in higher education in the U.S. The author implemented OBE in her Managerial Accounting course in H.K. Intended learning outcomes were mapped again Bloom's Cognitive Domain. Teaching and learning activities that would facilitate students' achieving the ILOs were designed. And assessment tasks were evaluated. The instructor found that desired attributes were met, leading to the conclusion that the OBE approach was a success.

outcome-based education, student learning, learning outcomes, outcome-based teaching and learning, Managerial Accounting



INTRODUCTION

Outcome-based education (OBE) (sometimes called Performance-based Education, formerly called Mastery Learning) is a model of education that favors making students demonstrate that they know and are able to do whatever the required outcomes are. The outcomes are specified in terms of individual student learning. The model rejects the traditional focus on educational inputs and content and time allocation. Instead, OBE focuses on desired results. OBE emphasizes setting clear standards for observable, measurable outcomes through which student performance can be empirically measured.

The Education Department of Western Australia describes OBE in one of its documents as

an educational process which is based on trying to achieve certain specified outcomes in terms of individual student learning. Thus, having decided what are the key things students should understand and be able to do or the qualities they should develop, both structures and curricula are designed to achieve those capabilities or qualities. Educational structures and curriculum are regarded as means not ends. If they do not do the job they are rethought. (Willis and Kissane, p. 1)

According to Acharya (2003), OBE addresses the following key questions:

1. What do you want the students to learn?
2. Why do you want them to learn it?
3. How can you best help students learn it?
4. How will you know what they have learnt?

From his own experience, Towers (1996) listed the following that are necessary to make OBE work:

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

MERITS AND CRITISMS OF OUTCOME-BASED EDUCATION

OBE is viewed by some as a valuable replacement of the traditional model of relative ranking by ability and getting credit for merely sitting through class. Proponents favor OBE because of its vision of high standards for all groups, and because it measures outputs rather than inputs. OBE would require students to demonstrate learning rather than just showing up. Those who support OBE believe that all students can learn. In addition, OBE recognizes that a complex organization is more likely to produce what it measures, and to downplay anything it considers unimportant. The adoption of measurable standards is seen as a means of ensuring that the content and skills covered by the standards will be a high priority in the education of students. OBE can be a way of getting beyond meaningless percentages and grades, aiming for education for life beyond school, giving children and young adults a broader and more transformative education.

Critics of OBE object to the use of standardized tests because they think it fundamentally unfair for schools to require the same level of work or to use the achievement tests for impoverished or racially disadvantaged students as they do for more advantaged students. They also claim that the OBE approach does not permit special, lower standards for students who have been badly served by public education in the past. Regarding the outcomes, many people dislike them because they think the standards are too easy, too hard, or wrongly conceived. In addition, some critics object to additional resources being spent on struggling students. Furthermore, some teachers find their grading workload significantly increases.

OUTCOME-BASED EDUCATION IN PUBLIC EDUCATION

OBE has been adopted by various countries. It was not successful in Western Australia. Although OBE has been used in some form for K-10 students for several years, it faced opposition when it was introduced in upper school classes. One group of opponents argued that the implementation of OBE would pose significant problems and potentially lead to the decreased knowledge and performance of school students. Eventually, the Western Australian Government abandoned most of its OBE system in January 2007.

At the national level in the U.S., Congress passed the Goals 2000 Act in 1994. The best-known and most far-reaching standards-based education law in the U.S. is the No Child Left Behind Act, which mandated certain measurements as a condition of receiving federal education funds. At the state level, more than half of U.S. high school students will be required to pass a high-stakes test to get a normal high school diploma. In some states, fewer than half of students and one-quarter of ethnic minorities have met these standards. In some communities, organized opposition groups have forced educational agencies to rescind reforms. Kentucky's Learning Goals and Outcomes was considered a failure. "It starts with platitudes, then progresses through bureaucratic jargon, and then spells out subjective outcomes that cannot be scored, and finally descends to specifics that range from the ridiculous, to a waste of time, to the downright offensive." (Phyllis Schlafly Report 1994, p.1) Pennsylvania State Department of Education proposed to convert to OBE in 1992. Outcomes that have to be met by students before graduation eventually were condensed to 55. However, many of the goals are affective, which means that they concern attitudes, values, feelings and emotions rather than academic achievement. A look at some of these outcomes makes clear that they cannot possibly measure students' performance objectively. Washington State's Performance-Based Education Act of 1993 calls for a new performance-based assessment system to replace the existing state standardized achievement tests. However, the goals are extremely vague. Similarly, Oklahoma State Department of Education's effort in 1992 to convert to OBE also was met with failure. Many outcomes listed throughout the Oklahoma OBE curriculum pertain to feelings, rather than academic achievement (Phyllis Schlafly Report 1993).

The outcome-based learning framework adopted by Zayed University (ZU), an academic institution located in the United Arab Emirates, however, was considered successful. ZU uses learning outcomes as a basis to focus its IT curriculum. Feedback from students reflects that the outcome-based academic model helps foster an atmosphere of learning (Lansari, Tubaihat, and Al-Rawi 2007).

OUTCOME-BASED EDUCATION IN MEDICAL SCHOOLS

Although OBE was viewed to be unsuccessful in public education, medical schools and dental schools have had success in adopting OBE. The University of Dundee medical school in Scotland, U.K., moved to outcome-based education in 1997. Students from Dundee medical school had the highest level of confidence of all U.K. medical students that their medical school education prepared them well for their first postgraduate year. The Aga Khan University medical college (AKU-MC) in Pakistan aims for international standards as well as relevance to national health needs. Its outcomes are its professional attributes operational in a universe of its curricular goals. Yong Loo Lin School of Medicine at the National University of Singapore proposed a revised curriculum with broad outcomes of producing graduates who are competent as house officers and have the foundations to become competent specialist clinicians. In the U.S., Brown University School of Medicine inaugurated a new competency-based curriculum in 1996. As a result of its curriculum, residency programs know that an M.D. degree from Brown means that graduates have been taught, have learned, and have been assessed competent in these outcomes (Smith and Dollase 1999). Brown was later joined by medical schools at the University of Vermont, the University of Missouri at Kansas City, East Tennessee University and the University of Indiana, to name a few. The Mayo Medical School in the U.S., in the past several years, has defined specific learning outcomes and initiated a major curriculum redesign to ensure that the graduates achieve critical outcomes. The revised curriculum, which is based on specific, assessable outcomes, is believed to be able to facilitate integration of basic and clinical sciences, promote flexibility, and to embrace innovation that is essential for the continued viability of MMS' educational structure.

The General Dental Council adopted the three-circle model to specify and summarize learning outcomes in undergraduate education. The model offers an effective and user-friendly format based on the three dimensions of the work of a dentist: What the dentist is able to do ("doing the right thing"), how the dentist approaches his practice ("doing the thing right"), and the dentist as a professional ("the right person doing it") (Clark, Robertson, Harden 2004a). The acceptability of this model is demonstrated by its adoption in medical education within the United Kingdom and the use of a similar approach by the Institute of International Medical Education to achieve international agreement on the global requirements for medical education. The successful and smooth adoption of this model for specifying learning outcomes in orthodontics throughout the continuum from undergraduate to specialist and consultant training suggests that it has the potential to specify outcomes in all specialties and in different areas of dentistry including vocational and general professional training (Clark, Robertson, and Harden 2004b).

OUTCOME-BASED EDUCATION IN U.S. HIGHER EDUCATION

Accrediting agencies are required by the U.S. Department of Education (1988) to include assessment as a component of post-secondary accreditation standards. Consequently, almost all higher-education institutions are required to be engaged in outcomes assessment. In 1991, The American Assembly of Collegiate Schools of Business—The International Association for Management Education (AACSB) adopted its current mission-based standards with a requirement for outcomes assessment (AACSB 1991, pp. 2-3). The two required purposes of standards-based assessment are continuous program evaluation and accreditation and the two

uses of assessment data for AACSB purposes are formative evaluation of programs for improvement and summative evaluation of programs for accreditation (Shaftel and Shaftel 2007). A comprehensive outcomes assessment program is viewed as a key vehicle supporting continuous improvement.

A document prepared by the Commission on Higher Education (1998) listed six essential criteria for outcomes assessment plans that can be used to motivate research or program development. Assessment should: (1) be rooted in the institution's mission at both program and course levels; (2) consist of collaboration between faculty and administrators; (3) use qualitative and quantitative measures of outcomes; (4) lead to improvement; (5) consist of realistic goals and resources; and (6) provide for evaluation of the program itself (Commission on Higher Education 1988, pp. 13-16). The American Accounting Association (AAA) commissioned a special group to study outcomes assessment in the Accounting discipline. The report provides exhaustive documentation of the relevance of outcomes assessment to Accounting programs (Baker et al. 1994).

In the field of Food Science, the Institute of Food Technologists (IFT) Education Standards currently require a program of assessment of student learning based on specified outcomes. IFT also provides a Guide Book for Food Science Programs to assist departments in making the transition to a curriculum based on assessment of learning outcomes (Hartel and Gardner).

OUTCOME-BASED EDUCATION IN HONG KONG

There has been a recent increase in interest internationally in student learning outcomes. The University Grants Committee (UGC), a non-statutory advisory committee responsible for advising the government of the Special Administration Region (SAR) of the People's Republic of China on development and funding needs of higher education institutions in the SAR, believes that placing an emphasis on learning outcomes helps institutions focus their education effort on achieving its goal, with a view leading to better teaching and learning. As a result, UGC thinks that its funded institutions should be encouraged to consider adopting outcome-based approaches in order to judge whether the processes and deployment of resources are effective in enabling students to achieve the intended student learning outcomes.

To assist the UGC in assuring the quality of programs, the Quality Assurance Council (QAC) was formally established in April 2007. The QAC, which is a semi-autonomous non-statutory body under the aegis of the UGC, conducts quality audits on UGC-funded institutions to assure the quality of student learning in these institutions. The audits are intended to assure the UGC and the public that institutions deliver on the promises they make in their role and mission statements. An inter-institutional Task Force on Outcome-based Approaches in Student Learning (OBATF) was set up in 2007 to facilitate the weaving of "outcomes" into the curricula. In addition to promoting quality assurance and enhancement of good practices, the QAC also assists the UGC in monitoring quality-related initiatives, an example of which is the Common English Proficiency Assessment Scheme.

There are a number of specific reasons why UGC has an interest in furthering the application of learning outcomes concepts and approaches to university-level education in Hong Kong. Among the most prominent are:

1. Improving the Quality of Teaching and Learning

While improving the quality of teaching and learning is principally a responsibility of institutions themselves through their faculty, external bodies like the UGC can play an important role in:

- a. raising these matters to levels where institutions must pay systematic attention to them,
- b. providing institutions and faculty members with resources needed,
- c. and aligning multi-institutional efforts to ensure synergy.

2. Fostering Progress toward Four-year Degrees

Hong Kong institutions also face a more particular challenge as they modify their offerings to accommodate a four-year undergraduate degree. The revised four-year program is also known as the “3+3+4” mode (three years junior high school + three years senior high school + four years university). Most institutions are moving toward using the additional curricular flexibility that will be provided by an extra year of undergraduate study to foster so-called “general competencies” and “whole person” education. Doing this in the explicit context of articulated student learning outcomes is already proving beneficial to some institutions. The UGC thinks that the curriculum revision under the four-year degree will be a good opportunity to weave “outcomes” into the new curriculum.

3. Ensuring International Competitiveness

In an increasingly global marketplace for higher education, UGC has a strong interest in ensuring that the degrees granted by Hong Kong institutions are competitive internationally. As assurance for higher education provision become more and more diverse, quality assurance for higher education in most nations is rapidly shifting toward a greater reliance on evidence of learning outcomes from an exclusive reliance on resources and the integrity of instructional processes. And in a global marketplace, outcomes themselves must address an increasingly common set of general competencies that include high levels of communications skills, critical thinking and problem-solving skills, quantitative skills, and a variety of social and workplace skills. Demonstrating these kinds of proficiencies, defined in outcomes terms, will become increasingly important in moving forward.

4. Responding to Stakeholders

Surveys of Hong Kong employers conducted for the Education and Manpower Bureau, for example, recently identified English language skills and creativity in problem solving as among the most important abilities sought by employers. Responding effectively to higher education’s stakeholder community will increasingly require answering important questions like these with results-based language and evidence.

IMPLEMENTATION

In preparation for the Association to Advance Collegiate Schools of Business (AACSB) accreditation as well as the QAC audit, and in view of the significance of outcome-based

approach of teaching and learning, Lingnan University in Hong Kong plans to incorporate Outcome-based Teaching and Learning (OBTL) into its curriculum framework. To facilitate coordination among departments, a new Standing Committee of Curriculum Review and Learning Outcomes Measurement (CRLOM) was established by the Business Programmes (similar to the Business Faculty in a U.S. university setting) at Lingnan University, Hong Kong, in 2007-08 to replace the Curriculum Working Group. The CRLOM assumes the major responsibility in curriculum development and modification as well as measurement of learning goals.

With Outcome-based Teaching and Learning (OBTL) in mind, an introductory course in Managerial Accounting is modified. A brief course description of this course is as follows:

1. This course is a foundation core course for all students in the first year of study for the Bachelor of Business Administration Degree.
2. This course introduces the scope and purpose of Management Accounting.
3. This course discusses the design of cost system and how to use Management Accounting information for planning, control and decision-making.
4. This course emphasizes the development of accounting measurement tailored for internal uses for business enterprises.
5. While Financial Accounting demands consistency in its measurement to facilitate comparison, Managerial Accounting is more concerned with customizing measurement to provide maximum relevancy for the purpose of management.

OBTL is an approach where teaching and learning activities are developed to support the learning outcomes. There are three components in OBTL: intended learning outcomes (ILOs), teaching activities, and outcome-based assessment.

As the first component of OBTL, the following ILOs are designed to describe what the students are expected to do at the end of the Managerial Accounting course. In Table 1 (Appendix), the ILOs are mapped against Bloom's Cognitive Domain (Bloom 1956).

1. List and describe major objectives of managerial accounting activity.
2. Describe the behavior of variable and fixed costs, distinguish between product costs and period costs, and employ economic concepts in classifying costs.
3. Accumulate production costs and assign those costs to a firm's products under job-costing, process costing, and activity-based costing systems.
4. Apply cost-volume-profit analysis.
5. Prepare budgets.
6. Set standards and analyze material, labor, and overhead cost variances.
7. Evaluate performance of organizational units.
8. Prepare and evaluate analyses of various special decisions.
9. Determine the price for a firm's products or services.

The second component of OBTL is the design of teaching and learning activities. Having designed the ILOs, the instructor now needs to activate the verbs or learning activities embedded in the ILOs by designing suitable teaching/learning activities that will facilitate students' achieving the ILOs. The point here is what the instructor wants students to learn, not how the instructor is going to teach. In addition, some of the following teaching and learning activities

can be assessment tasks as well. Table 2(Appendix) maps the ILOs and the teaching and learning activities.

ASSESSMENT

The third component of OBTL is to design the assessment. Instructors are advised to use a range of authentic assessment tasks that demand not only understanding of content but also a range of abilities such as language use, information processing, critical thinking, problem solving, and decision making. Outcome-based assessment (OBA) encourages self-reflection and helps develop students' capacity for inquiry. The assessment tasks used in the course are evaluated and shown in Table 3 (Appendix).

At the initial stage of AACSB accreditation, the Business Programmes adopted a set of learning goals and graduate attributes. This list was revised in 2007-08. As an overall evaluation of this experiment, the instructor examined this established list of graduate attributes:

1. have good communication skills
2. are literate in IT knowledge and skills
3. can transcend functional boundaries and take a holistic view of business
4. have had the opportunity to develop good knowledge within a specialized area of business
5. are able to analyze problems from an international and cross-cultural perspective
6. have a strong sense of social and ethical responsibilities
7. are able to think creatively and critically

The instructor felt that the ILOs designed for this course also contribute to the generation of graduates meeting the desired list of attributes.

SUMMARY

Although Outcome-based Education has not been successful in public education in several countries, it has been successful in the medical fields in higher education in the U.S. The author implemented OBE in her Managerial Accounting course in Hong Kong. Intended learning outcomes were mapped against Bloom's Cognitive Domain. Teaching and learning activities that would facilitate students' achieving the ILOs were designed. And assessment tasks were evaluated. The instructor found that desired attributes were met, leading to the conclusion that the OBE approach was a success.

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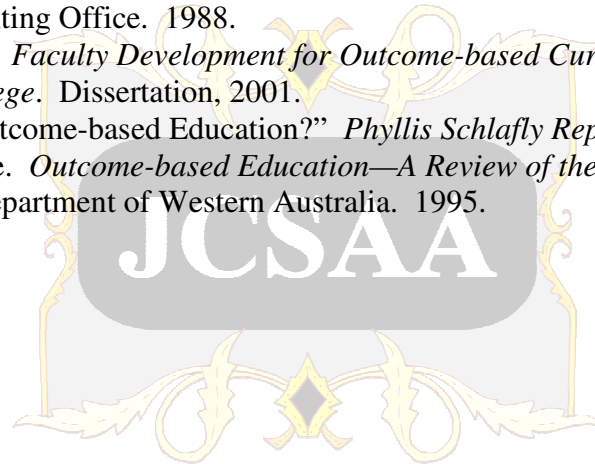


Table 1. Mapping Intended Learning Objectives on Bloom's Cognitive Domain

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Definition of Bloom's cognitive domain	Remember previously learned material	Grasp the meaning of material	Use learning in new and concrete situations	Understand both the content and structure of material	Formulate new structures from existing knowledge and skills	Judge the value of material for a given purpose
ILO 1 List and describe major objectives of managerial accounting activity	ILO 1 List	ILO 1 Describe				
ILO 2 Describe the behavior of variable and fixed costs, distinguish between product costs and period costs, and employ economic concepts in classifying costs		ILO 2 Describe		ILO 2 Distinguish	ILO 2 Employ	
ILO 3 Accumulate production costs and assign those costs to a firm's products under job-costing, process costing, and activity-based costing systems				ILO 3 Assign	ILO 3 Accumulate	
ILO 4 Apply cost-volume-profit analysis			ILO 4 Apply			
ILO 5 Prepare budgets			ILO 5 Prepare			
ILO 6 Set standards and analyze material, labor, and overhead cost variances			ILO 6 Set (compute)	ILO 6 Analyze		
ILO 7 Evaluate performance of organizational units						ILO 7 Evaluate
ILO 8 Prepare and evaluate analyses of various special decisions			ILO 8 Prepare			ILO 8 Evaluate
ILO 9 Determine the price of a firm's products or services						ILO 9 Determine

Table 2. Mapping of ILOs and Teaching and Learning Activities

ILOs	Chapter Material	Teaching Activities	Learning Activities
ILO 1 List and describe major objectives of managerial accounting activity	Overview, financial accounting versus managerial accounting	Lecture	Reading and case
ILO 2 Describe the behavior of variable and fixed costs, distinguish between product costs and period costs, and employ economic concepts in classifying costs	Cost terms, concepts and classifications	Lecture plus case discussion	Reading, problem-based case
ILO 3 Accumulate production costs and assign those costs to a firm's products under job-costing, process costing, and activity-based costing systems	Job-order costing	Lecture plus case discussion	Reading, case: on an hypothetical event (students are asked to compute costing of a function activity)
ILO 3 Accumulate production costs and assign those costs to a firm's products under job-costing, process costing, and activity-based costing systems	Process costing	Lecture plus group game	Reading, participate in a play dough experiment on processing costing
ILO 2 Describe the behavior of variable and fixed costs, distinguish between product costs and period costs, and employ economic concepts in classifying costs	Cost behavior	Lecture plus case discussion	Reading, case, computational- type cases (using various methods to differentiate fixed, variable and mixed costs)
ILO 4 Apply cost-volume-profit analysis	Cost-volume-profit analysis	Lecture plus a case write-up	Reading, case write-up (students are asked to write analysis report to a CEO to compute breakeven etc.).
ILO 7 Evaluate performance of organizational units	Variable costing	Lecture plus debate	Reading, debate with peers, critique and analyse
ILO 7 Evaluate performance of organizational units	Absorption costing	Continuation of Lecture plus debate	Reading, debate with peers, critique and analyse
ILO 3 Accumulate production costs and assign those costs to a firm's products under job-costing, process costing, and activity-based costing systems	Activity-based costing	Lecture plus case discussion	Reading, problem-based case analysis
ILO 5 Prepare budgets	Budgeting	Lecture and case discussion	Reading and solve problems
ILO 6 Set standards and analyze material, labor and overhead cost variances	Standard costing	Lecture and case discussion	Reading and problem-based case
ILO 6 Set standards and analyze material, labor and overhead cost variances	Variance analysis	Continuation of Lecture and case discussion	Reading and problem-based case
ILO 8 Prepare and evaluate analyses of various special decisions	Decision making	Lecture plus Case discussion	Reading and problem-based case
ILO 9 Determine the price of a firm's products or services	Product pricing	Lecture plus case discussion	Reading and problem-based case

Table 3. Evaluation of Assessment Tasks

Assessment Task	Description	Assessment Criteria
Case discussion	Students are expected to read textbook material and prepare for case discussion.	Evaluated according to: 1. identification of case issues 2. communication of argument 3. problem solving skills 4. critical thinking skills
Project	Students are asked to submit a written case analysis.	Evaluated according to: All of the above plus writing skills
Debate	Students are asked to make a decision and defend it.	Evaluated according to presentation of arguments
Examination	Two examinations throughout the term, each with 20 MC questions and four long questions.	MC questions are composed of both conceptual and computation questions. Long questions are composed of ethical issues, computations and theory-type questions.

