Full Length Research Article

OUTCOME-BASED QUALITY MANAGEMENT IN HIGHER EDUCATION: AN APPROACH TO MEETING SOCIETAL NEEDS

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ARTICLE INFO

ABSTRACT

This paper discusses an outcome-based approach to quality management (QM) in higher education (HE) in order to bridge the gap between the academia and reality. Underpinned by the theories of Outcome-Based Education (OBE), the approach comprises three main domains: identifying, achieving and measuring intended learning outcomes (ILOs). The key principle of the approach is to assure the alignment of three factors: intended learning outcomes (ILOs), instructional planning and implementation, and student assessment. The paper consists of three main sections: (1) An overview of OBE, (2) an outcome-based approach to QM in HE, and (3) challenges to OBE application.

INTRODUCTION

The ultimate goal of HE is to foster the graduate's workplace readiness and employability. OBE has, therefore, been acknowledged to be effective in this goal achievement. Concurring with Ball (2009), Caspersen, Lange, Prøitz, Solbrekke, and Stensaker (2011) emphasize that "[q]uality can be said to have been a key concept in higher education policies since the latter part of the 1980s, and it is often associated with a shift from an input-oriented focus in higher education, to more output and results-orientations among policy-makers" (Cited in Caspersen *et al*., 2011, p. 1). Kazin and Payne (2009, p. 31) conclude "[s]tudent outcomes are integral to institutional quality, and that quality is fundamental to fulfilling the missions of the institutions that governing boards oversee" and that "[w]ithout assessing student learning outcomes, there is no reliable way to measure and demonstrate an institution's educational quality". This highlights the significance of the application of an outcome-based approach to fostering HE students' knowledge and skills to meet societal needs. This paper focuses on the application of an outcome-based approach to QM in HE at the course[1] level.

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[1] A course as "a series of lessons or lectures on a particular subject" (Oxford Leaner's Dictionary)

An Overview of OBE

OBE has been applied to improving the quality of learning/ teaching as well as education QM (Biggs and Tang, 2007, p. 5). Jager and Nieuwenhuis (2005) summarize OBE literature as follows (p. 255):

Outcomes-based education is a learner-centred, results-oriented approach to education premised on the expectation that all learners can learn and succeed. It implies that learning institutions have the responsibility to optimise the conditions for success (Dreyer, 2001). Kudlas (1994) mentioned that OBE is a process with a focus on what is to be learned: the outcome that is a demonstration of learning. Spady (1994) defined outcomes as high quality culminating in demonstrations of significant learning in context.

In OBE, everything revolves around the concept "learning outcomes" (LOs), also known as "intended learning outcomes" (ILOs). There have been various perspectives on LOs (Ewell, p. 31). Caspersen *et al*. (2001) recognized LOs as "a result or product" and "a function of a prior learning process". DePaul University defined LOs as "concise statements, made in specific and measurable terms, of what students will know and/or be able to do as the result of having successfully completed a program of study"[2].

[2] Cited from http://condor.depaul.edu/tla/Learning/creating_outcomes.html

In the explanation by Lahiff (2006) and O'Farrell (2009, p. 5), a learning outcome is "a student-centred statement of what you want your students to know, understand or be able to do as a result of a completed process of learning".

Here is the definition of ILOs by Biggs and Tang (2007, p. 5): "The ILOs are statements, written from the students' perspective, indicating the level of understanding and performance they are expected to achieve as a result of engaging in the learning and teaching experience". These two authors also indicate three levels of LOs (p. 64):

* the institutional level referring to what the graduates of the university are supposed to be able to do,
* the degree program level addressing what the graduates from particular degree program should be able to do, and
* thecourse level stating what students should be able to do at the completion of a given course.

The definition by Biggs and Tang (2007) conveys various dimensions of ILOs. In this definition, ILOs are perceived and stated from "students' perspective"; ILOs should be measurable, which is conveyed by the phrase "level of understanding and performance"; ILOs are expected to achieved through students' active participation in the learning and teaching process, which is reflected by the term "engaging". Moreover, the clarification of the three levels of LOs by these two authors is significant to the perception and application of the concept of LOs.

ILOs are essential to the education process in that they orientate all stakeholders to quality assurance and development. Referring to the importance of ILOs, DePaul University[3] has stated on their website that ILOs:

* can assist departments and program to think about their curriculums since when outcomes are defined, departments can map the outcomes onto the courses that they teach to identify areas within the program where outcomes may overlap (or otherwise be redundant) or where gaps may exist;
* allow departments and programs to indicate what knowledge, skills and abilities students are expected to have mastered at the end of their course of study and allow them to communicate expectations to students;
* provide students with a way to articulate the knowledge and abilities that they have gained and to express what they know to others;
* assist faculty in determining appropriate assessment strategies; and
* informpotential employers of the abilities of a department's graduates.

An Outcome-Based Approach to QM in HE

Quality is defined by the British Standard Institution (BSI) as "the totality of features and characteristics of a product or service that bears on its ability to satisfy the stated or implied needs" (BSI, 1991; cited in Sudha, 2013, p. 123).

[3] Cited from http://condor.depaul.edu/tla/Learning/why.html

In education, quality has been realized as "a multi-dimensional concept in view of its varied stakeholders' needs and expectations" (AUN, 2011, p. 6). The International Network of Quality Assurance in Higher Education defined quality in education as (1) complying with required standards, and (2) achieving stated objectives. The commonality of the above definitions is that they all focus on meeting the identified needs. Therefore, it can be inferred that HE quality is determined by how much students' stated or/and implied needs and expectations are met.

Wicklund*et al*. (2003) explain the concept of QM as "a management approach of an organization, catered on quality, based on the participation of all its members and aiming at long run resources through customer satisfaction and benefits to all members of the organization and to society" (Wicklund*et al*., 2003; cited in Zabadi, 2012, p. 49).The strength of this definition is it conveys 4 key aspects in QM: quality, all members' engagement, long-run resources, and customer satisfaction. Quality here means meeting customer satisfaction. It is the responsibility of all of an organization's members to assure and improve quality. Both human and nonhuman resources need to be well managed to achieve identified objectives. To satisfy customers, attempts need to be taken to meet or exceed their stated and unstated needs.

Dwyer (1991) identifies the alignment of teaching objectives, instruction and studentassessment as the crucial principle in assuring the quality of teaching/learning, which is illustrated by Figure 1. As described, when teaching objectives are set at the problem-solving level, the correspondent instruction and assessment should also be at this level. It is implied that any mismatch among these three aspects will adversely affect education quality. Dwyer's model reflects the concept of education quality from the instructor's perspective, focusing on the instructor's role in the education process, reflected by the terms "objectives" and "instruction". To establish a learner-centered view on education quality management, Dwyer's model can be adjusted in Figure 2, which states that quality depends on the level of the alignment of ILOs, achieving ILOs (curriculum design, and teaching/learning planning and implementing), and measuring achieved LOs.
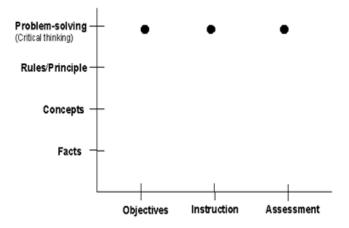

Figure 1. Alignment of teaching objectives, instruction and assessment (Cited from Penn State Learning Design Community Hub, 2007)
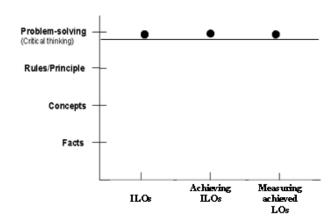
Figure 2. Alignment of ILOs, achieving ILOs, and measuring achieved LOs

Identifying ILOs

As emphasized by Figure 2, identifying ILOs is critical to education quality management since this phase provides the foundation and orientation for the strategic planning to enhance HE students' relevant qualities to meet societal needs. Effective ILOs generation approaches can be seen in the related literature. Bloxham and Boyd (2007) suggest a 7-step process in identifying appropriate ILOs. Lahiff (2006) and O'Farrell (2009) provide comprehensive guidelines for ILOs generation. UNC Charlotte (n.d.) recommends specific steps to write ILOs using Bloom's Taxonomy[4]. To assure the appropriateness of ILOs generation, the following indicators of effective ILOs should be taken into consideration. As stated by John Scattergood (2008), ILOs should be:

- summaries of essential areas of learning that result from a course of study,
- written in the future tense, often expressed as 'you will be able to',
- explicit and clearly expressed,
- limited in number,
- expressed with a verb indicating the relation to of the outcome to 'domains (or types) of learning', and written with a level of learning/ learner in mind (Cited in Lahiff, 2006, and O'Farrell, 2009, p. 17).

In addition, student-centeredness is a notable feature of well-written ILOs, as denoted by Lahiff (2006), O'Farrell (2009), and Biggs and Tang (2007). Equally important is that ILOs should be measurable as stated by DePaul University and implied by Biggs and Tang (2007). Concerning the number of LOs at the program level, DePaul University suggests that it should be between 5 and 7, emphasizing that the "focus should be on creating manageable number of significant learning outcomes"[5]

Achieving ILOs

Once identified, the ILOs should be circulated among related stakeholders (policymakers, curriculum designers, instructors, students, parents and job recruiters). The next step is to assure

[4] Available at http://teaching.uncc.edu/learning-resources/articles-books/best-practice/goals-objectives/writing-objectives
[5] Available at http://condor.depaul.edu/tla/Learning/what.html

the alignment between (1) ILOs and curriculum design, (2) ILOs and instructional planning and implementation, and (3) ILOs and assessment.

Alignment of ILOs and curriculum design

Fry *et al.* (2009, p. 51) suggest the following outcome-based approach to curriculum design:
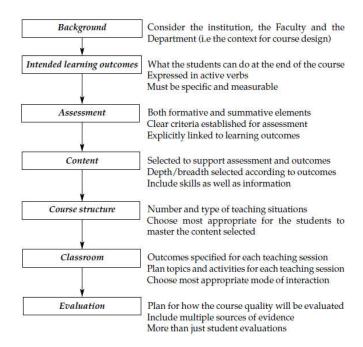

Figure 3. An outcome-based approach to curriculum design (Fry *et al*., 2009, p. 51)

In this procedure, assessment policy is considered right after ILOs have been stated. This helps identify whether the stated ILOs are achievable and measurable. Then, the identified ILOs serve as determinants in the course content choice, course structure, and teaching/learning planning.

Alignment of ILOs and instructional planning and implementation

Figure 4 by Fry and Marshall (2003) illustrates an outcome-based approach to the design and implementation of teaching/learning, in which ILOs appear at the beginning and at the end of the education process.
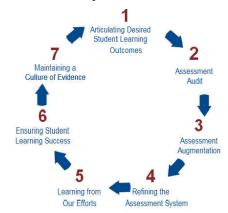

Figure 5. Evidence of Student Learning Outcomes Model (Millett *et al*., 2008, p. 10)

In this process, the results of the LOs assessment will supply inputs for the adjustment of the design of teaching/learning strategies, which in turn orients the implementation of teaching/learning.

Alignment of ILOs and assessment

In the outcome-based approach, assessment policy is based on the ILOs. Millett, Payne, Dwyer, Stickler, and Alexiou (2008) recommend a 7-step process for the assurance of the alignment between ILOs and assessment, which is illustrated in Figure 5. These authors provide a set of questions and guidelines for the application of this process to the QM of a language program (p. 11-17):

- Articulating desired student learning outcomes: what are our aspirations for our students to achieve and for what purposes do we wish to document the results?
- Assessment audit: what existing evidence can address these student learning goals?

- Assessment augmentation: what additional evidence is needed?
- Refining the assessment system: what new assessments should be introduced and what valuable existing measures should be retained?
- Learning from our efforts: what do the results from our assessment system tell us regarding our aspirations for student learning?
- Ensuring student learning success: what institutional changes need to be made to address learning shortfalls and ensure continued success?
- Maintaining a culture of evidence: Ensuring that a culture of evidence is created within the institution: continuing the effort over time and expanding to new areas of interest

It is clear so far that the alignment mentioned earlier requires an on-going effort by related stakeholders.
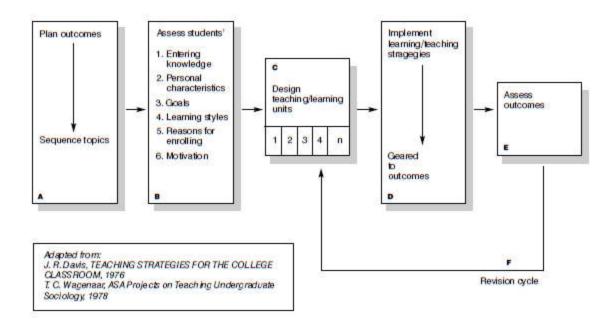

Figure 4.Systematic approach to course/module planning(Fry, Ketteridge& Marshall, 2003, p. 31)

Content-based education	Outcomes-based education
Passive learners	Active learners
Examination driven	Assessment on an ongoing basis
Content-based syllabus	An integration of knowledge
Textbook and lecturer centered	Learner centered
Syllabus is rigid. Lecturers responsible for learning	Lecturers can be innovative and creative. Learners responsible for their own learning
Emphasis on what lecturer hopes to achieve	Emphasis on outcomes
Content placed into rigid time frames	Flexible time frames; learner determines pace
Rote learning	Critical thinking, reasoning and action

Figure 6. Comparison between a traditional content-based education system and an outcomes-based education system

Challenges to OBE Application

In Figure 6, Jager and Nieuwenhuis (2005, p. 256) demonstrate the challenges in shifting from the traditional content-based education (CBE) into OBE:As shown in the comparison, OBE surpasses CBE in that everything in the OBE process centers on the learner and aims at what he or she needs, not what the instructor wants. The comparison reveals the gaps between CBE and OBE, which are known as the challenges facing educational policymakers, administrators, instructors as well as students at the HE level while implementing OBE. Biggs and Tang (2007, p. 251) indicate these conditions to make the above-mentioned shift feasible:

- A felt need for change by all major participants.
- A clear conception of what an aligned teaching system is.
- The operational decisions made concerning ILOs, TLAs, and ATs and how to grade students' performances.
- A 'willing' climate, in which all participants, and those whose cooperation is necessary for the project to go ahead, will be on side and institutional policies and procedures that support constructive alignment.
- Sufficient resources: resources such as financial, time for development of constructive alignment, space, educational technology and the like.
- Formative evaluation of progress, including evidence that the new system is working properly; and, if not, the means of finding out what to do to correct matters.

Michael Fullan (1993) concludes "theories of education and theories of change need each other" (cited in Biggs and Tang, 2007, p. 247), meaning the application of OBE entails a big challenge. For Biggs (2013), the greatest challenge in the application of OBE is the change in mentality.

Conclusion

Societal fast-changing pace requires equivalent approaches to HE QM, and OBE is an effective solution. The approach mentioned in this paper emphasizes the roles of ILOs as the orientation and criteria for curriculum design, strategic planning for teaching/learning, and student assessment. The implication of the approach is that the effectiveness of the QM in HE is determined by how appropriately ILOs are generated, and that education quality depends on the alignment of the generation, implementation, and measurement of ILOs. This approach can be summarized in the following procedure presented by Fry *et al*. (2009, p. 50):

- Consider your general aims for the course.
- Write specific ILOs.
- Plan the assessment framework to match the identified ILOs.
- Plan the content, i.e. sequence of topics/readings.
- Plan the teaching/learning design.
- Compile a list of resources.
- Write the course outline.
- Consider evaluation of the course (formative and summative) and how best evaluation can be carried out.

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