



## An OBE-centered Development Procedure for a B. S. Architecture Curriculum: Insights on its Application

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**Abstract.** This paper provides a report on a curriculum design procedure developed by the authors from an understanding of the prescriptions of Outcome-Based Education, particularly as discussed by William Spady (1994). The procedure was applied to the revision of an undergraduate architecture program in the Philippines. The procedure is described and insights on the OBE procedure that arose from faculty discussions during its implementation were identified. The insights centered on the quality of appropriateness of OBE to an architecture curriculum and to the curricula of arts-based disciplines in general.

**Keywords:** Outcome-Based Education, architecture curriculum, curriculum design

### Introduction

Outcome-Based Education (OBE), as explained and espoused by Spady (1994), is an entire process of education requiring a paradigm shift from the historic American standards-based, factory production-like system to one more student-centered and focusing on holistic development, seeking to provide multiple means for a student to learn at his or her own pace. OBE involves the determination of broad behavioral evidences as exit or culminating outcomes that a student must be able to demonstrate to assess if the student has achieved the required learning. These wide-spanning exit or culminating outcomes must, however, be broken down into less broad enabling outcomes, then final specific discrete outcomes for each subject and class taken by the student to provide learning evidences which, theoretically, should provide overall indications of the exit outcomes in turn (Spady, 1994, pp. 18-20).

It may be seen that such a curriculum design process is largely based on the early twentieth-century behavioral curriculum approaches of Bobbit's means-end prescription (Lui, 2017), Charters's quantification of human activities (Rosenstock, 1983), and of course, Tyler's Rationale (Tyler, 1949). In these approaches the determination of behavioral objectives at the outset as statements of learning achievement and basis for learning assessment are of paramount importance. This focus on learning objectives however, while providing systematic precision to curriculum design and instruction, was not always met with enthusiasm by all educators. Among the difficulties found in practice in the United States, as summarized by MacDonald-Ross (Tumposky, 1984), were that strict adherence to learning objectives diminished possibilities of unstructured learning exploration and serendipitous unpredicted classroom events, and that the specification of behavioral objectives did not always reflect the knowledge content structure of the field of study (as cited in Ashrafi, 2013, p. 304). Not surprisingly, similar complaints by educators have been raised on this focus on behavioral objectives in OBE curricula not only in the United States but also in Australia and South Africa (Donnelly, 2007).

These issues were found to be particularly true for the domain of the arts where student artistic development expected to occur in the classroom did not often coincide with specified behavioral objectives and that the nature of arts education, largely involving affect unlike the more precisely-structured sciences, was found to be difficult to reduce to clear-cut behavioral objectives. McKernan (1993) particularly related Stenhouse's view that, "Teachers and theorists in the arts and humanities in particular have countered that in these fields the concern is not for students to reach goals or exit outcomes once and for all, but rather for them to

develop standards of judgment, criticism, and taste” (p. 345). The field of architecture, having a large area of its field involved in the artistic domain, would then be expected to encounter similar difficulties with an OBE-focused architecture curriculum design. These are reflected in this report in the insights gathered from an OBE-centered curriculum design procedure applied to an undergraduate architecture curriculum in the Philippines.

### **The Architecture Curriculum**

A beginning student engaged in the formal study of architecture in college with the intent of eventually practicing as a professional architect would, within the first semester of study, likely be dismayed by both the disparity between expectation and the curricular reality of the program as well as the accompanying confusion on how best to comprehend the field of study. It is not uncommon in the Philippines to hear these students reply, when queried on the reason for their decision to enrol in the architecture program, that they were often fond of, or “good at,” drawing, particularly buildings and houses. These students would naturally expect that the architecture curriculum in college would somehow enhance their drawing skills in what would expectedly be an arts-oriented program. Their dismay quickly arises as early, perhaps, as the initial orientation seminar where they discover that the curriculum involves a large number of technical courses as well.

The academic and professional field of study of architecture in the Philippines, and in many other countries as well, uniquely straddles the debated boundary between the domains of the arts and the sciences in that the design of any work claiming to be architecture is expected to both embody displayed artistic theory as well as an acceptable level of technical expertise in materials, structures, and engineering systems. It would therefore be expected that the curriculum of the undergraduate architecture program would contain a number of courses from both domains and that the architecture student would therefore be required to develop, somehow, a conscious balance of creative, pragmatic, and necessarily, critical thinking to successfully undertake the requirements of the program. Ibrahim and Utaberta (2012) thus observe that, in architectural design studio courses which comprise the core of the curriculum, students are expected to exercise personal skills in combining both intuitive and pragmatic thinking approaches to satisfactorily produce both poetic and technically proficient work.

The integration of content from both domains traditionally occurs in the architectural design classes, characterized as studio classes owing to its historical roots in the apprenticeship model of the crafts education in the European Middle Ages and Renaissance and formalized in the studios of the architectural academies of the 19th and early 20th centuries. This other unique feature of architectural education, the design studio, remains the staple feature of Philippine architectural education, one that is historically rooted in the American format of higher education. This tradition, however, has long been questioned because of the reported quality of learning experiences of architecture students, resulting from a master-apprentice model of instruction, described as confusing and frustrating (Lueth, 2008).

Such criticism may be compounded in the Philippine context of university education where administrative concerns often prevail over educational issues such that the learning difficulties in student integration of technical logical and artistic intuitive thinking in the design studio are often compounded by its siting in an imposed learning milieu of lecture rooms doubling as creative studio spaces and strict class hours that disregard personal creative rhythms. American universities have long overridden the latter issue by providing design studio spaces open to its students twenty-four hours daily, an idea yet to be implemented in the Philippines.

The above contextualizes the following description of the development of a curriculum design procedure based on the tenets of OBE for a Bachelor of Science in Architecture program of a Philippine university.

### **The OBE Curriculum Development Procedure**

When the faculty of a college of architecture of a state university in the Philippines requested the authors to assist them in revising their Bachelor of Science in Architecture curriculum the authors developed a design procedure derived from Outcome-Based Education as espoused by Spady. It was fortunate that the architecture faculty of the college agreed, at the outset, to develop a curriculum “from scratch” rather than undertake a revision process. This decision was key to the use of an OBE procedure as it allowed for an unhampered curriculum design process. It must be noted that, although no precise curriculum design procedure was outlined by Spady, the procedure was developed from an understanding of his conceptual prescription.

In line with the prescription, as well as the spirit, of Spady’s OBE principle of “designing down” (1994, pp. 18-20) which requires the identification of culminating outcomes, followed by their corresponding enabling outcomes, then finally their specific discrete outcomes, it was decided by the faculty, upon prompting by the authors, that the initial culminating outcomes should be

determined from an identification of the characteristics or attributes of the ideal architecture student who has just completed the program. To do so, it was further decided that these attributes, in turn, were to be determined from an examination of the college's established Vision and Mission. The architecture faculty also noted that input from the college's stakeholders (alumni, students, students' future employers) should ideally be considered following Spady's description of examples of the identification of culminating outcomes in the United States (1994, pp. 73-75) but, for expediency, this step was done away with considering that the members of the architecture faculty were also practising architects and alumni of the college and thus already thoroughly familiar with the needs of the stakeholders.

Overall, then, the architecture faculty undertook the general procedure, as suggested by the authors, of conducting an analysis of the Vision and Mission of the college, identifying the terminal characteristics of the student, identifying the culminating outcomes (recognized as program goals by the faculty) to demonstrate achievement of these characteristics, identifying the corresponding enabling outcomes or indicators of achievement of the program goals, and finally determining the final discrete outcomes (recognized as course goals).

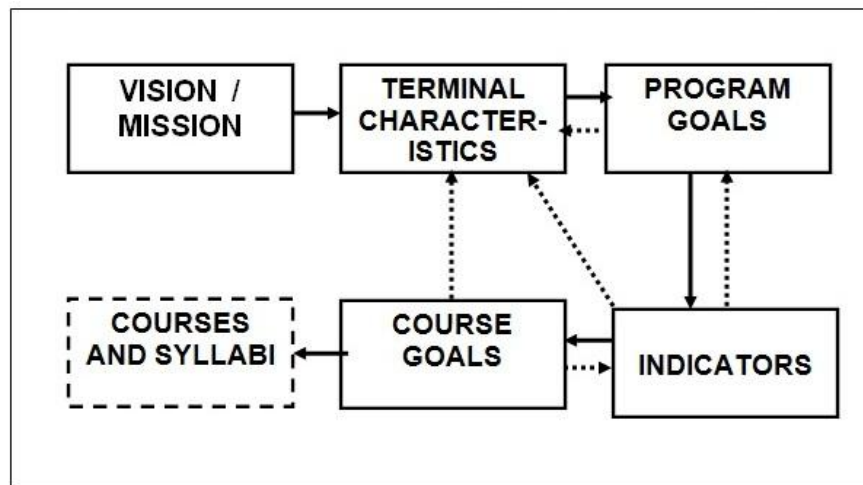


Figure 1. The general OBE curriculum development procedure used.

As indicated in Figure 1, in the determination of the various outcome levels the faculty took pains to check if each of these did, indeed, reflect the desired terminal characteristics as well as the previous level of outcomes. In sum, the analysis of the Vision and Mission of the college yielded an identification of thirteen clear terminal characteristics. These, in turn, were found to require 9 separate architecture program goals, or culminating outcomes, which, in turn, were found to require thirty-two indicators or enabling outcomes. Finally, an analytical breakdown of these indicators yielded two hundred and thirty two course goals or discrete outcomes.

The next ideal set of curriculum design tasks required the grouping of these course goals into identifiable courses prior to the development of their respective syllabi. To begin this the authors prompted the faculty to identify which of the course goals would be considered Introductory (I), for Emphasis (E), or for Review (R). This step was in anticipation of later tasks which would require the mapping of identified courses onto year levels with those in the early years having courses with Introductory course goals, those in the middle years with Emphasis goals, and those in the terminal years embodying Review course goals.

Although an ideal procedure would include the creation of totally new courses from identifiable groupings of course goals, it was immediately recognized by the authors and the faculty that this step would, in fact, entail a re-conception of the academic field of architecture itself. As an academic field it is traditionally recognized that architecture embodies clearly identified foundational areas as well as a number of component areas, all of which comprise a basic body of knowledge. The development of new courses not in line with this would require a rethinking of the structure of this body leading to a possible philosophical paradigm shift of the nature of architecture itself, a major undertaking which would, in turn, relate to the question of the eventual preparedness of graduates of the program for the professional licensure examination.

To avoid this major issue the authors suggested that the faculty identify which of the course goals would relate to existing courses of the program, rather than develop a new structure of courses. The faculty members thus selected the goals applicable to the courses that they personally taught to refresh these courses with the new goals. It was clear to all, however, that this did not exclude the possibility of still identifying new courses from the course goals. In this step, the ideal was to approximate what Spady labels as a Transformational approach to OBE, described as education that stems from the actual conditions of human life and necessitating a restructuring of traditional educational processes, while the process decided upon and employed would be identifiable as Spady's Transitional approach, with its emphasis on content-focused learning areas (1994, p. 193). With this shift to a Transitional procedure, then, the faculty thus encountered the same difficulty described earlier by Ashrafi (2013) where outcomes did not, in fact, reflect the structure of learning content as mentioned earlier. The procedural shift from Transformational to Transitional is illustrated in Figure 2. As of this writing the architecture faculty are in the process of identifying courses and mapping these.

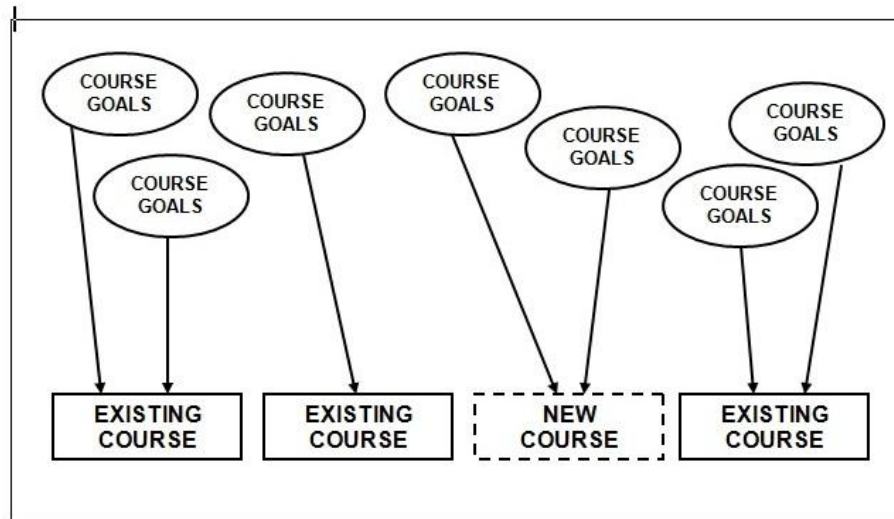


Figure 2. The Transitional procedure adopted.

### Faculty Discussions on the Procedure

Ensuing discussions from the undertaking of the OBE curriculum design procedure by the architecture faculty appeared to focus on critical topics, largely taken for granted in the past but now brought to the fore. An expected initial topic centered on whether the college's Vision and Mission did, in fact, express the current aspirations of the faculty body, considering that these were established a number of years earlier and have never been questioned. This was considered a valuable issue in that it centered on the educational philosophical foundations of the college itself, arising from the recognized need to ensure its congruence with the culminating outcomes.

Another reflection that emerged from discussions was on the ideal attributes of a terminal student of the program. As this ensued from the Vision and Mission, debates on the ideal attributes repeatedly returned to the currency of the former and the nature of the professional context for which the student should be prepared for in the future. This debate proved likewise valuable to the faculty in that the learners' within the larger context of the professional practice of architecture, and thus the role of the college in this, was considered for the first time by the faculty. Such discussion brought about a realization of the larger nature of the impact of faculty teaching beyond the classroom confines as gathered from the discussions on the various levels of outcomes.

A significant discussion that ensued from the procedure, arising from the possibility of the creation of new courses amid the revision of existing ones, concerned the philosophical orientation of the architecture program. As the field of architecture straddles both the arts and the sciences the question arose as to the direction of orientation of the program. In many Asian and developing countries, architecture as an academic discipline historically emerged from engineering programs. This is likewise the case in the Philippines, particularly resulting from the history of architectural education in the country where the early instructors during the American colonial period were steeped in the prevalent Modernist movement of architecture in which the material and structural aspects of architecture were considered the primary artistic medium of architecture, rather than spatial and aesthetic theory.

Engineering science was thus emphasized in early architecture programs, continuing to the where Philippine undergraduate architecture curricula have a large number of technical courses and few ones in the arts and artistic theory (Ozaeta, 2014). The possibility of re-orientation towards more architectural aesthetics was prompted by suggestions from faculty members who earned architecture graduate degrees from Western universities where the prevailing orientation was towards the arts and artistic theory. This possibility was further considered in cognizance of past and current instructional difficulties in the architectural design studio classes which, as discussed earlier, are historically oriented towards the arts but which are currently being used as integrative courses for the technical aspects of architecture. The faculty members thus collectively realized that the development of outcomes was not simply a matter of restating previously existing learning objectives as learner-centered but also required a close consideration of the fundamental nature of the discipline itself to develop the ideal outcomes.

Corollary to the foregoing, a considerable set of discussions centered on the existing curriculum structure composed of the architectural design studio courses, one for each semester forming a “spine” throughout the curriculum, and the other courses the learning contents of which are supposedly integrated into the design courses for application as architectural design projects. This curriculum structure is a traditional one found in many schools of architecture worldwide and which has recently been examined for issues arising from its implementations. These same issues likewise formed the focus of the discussions of the architecture faculty as the nature of the relationship between the design studio courses and the lecture courses were placed under scrutiny. As the discrete outcomes were identified and their placement within existing courses established, questions thus arose. These were: 1. The amount of learning content to be integrated from the lecture courses into the design courses, 2. The necessity of including content in the lecture courses that need not be integrated into the design courses, and, 3. Identifying clear and specific behavioral discrete outcomes for the design classes where architecturally artistic learning achievement is not easily defined as distinct learning behaviors.

The first two issues were identified by Ghaziani, Montazami, and Bufton (2013) also as issues in architecture curricula in the United Kingdom, lending credence to the worldwide similarity of the situation as stemming from the Western origin of architectural education itself. The third issue above reflects the same issues discussed earlier by McKernan (1993), Ashrafi (2013), and Donnely (2007) where it was stated that art-based disciplines such as architecture found it more difficult to identify and state learning outcomes as these were not as easily identifiable as specific learning behaviors. The OBE curriculum design procedure being implemented thus brought out issues that were found not only to be specific to this Philippine architecture school but to many schools across the globe.

### **Insights from the OBE Curriculum Development Procedure**

From the above faculty discussions during the implementation of the procedure it may be gleaned that the OBE procedure developed in itself was a valuable instrument in prompting the faculty members to reflect on and consider the “givens” of the program that were previously taken for granted. Foundations, structures, and procedures were examined for the first time in a number of years such that it refreshed the thinking and consciousness of the faculty, a significant occurrence for any academic organization.

The issues that ensued from the faculty discussions, while being common to many architecture schools worldwide, reflexively highlighted issues in OBE itself in that, while OBE ideally espouses a learner-centered approach to education with specified behavioral outcomes oriented towards the learner, its implementation in architectural education may not be entirely appropriate using an ideal Transformational approach as Spady espouses. The implementation of educational procedures particular to the discipline such as mentoring using the traditional master-apprentice model, rather than traditional teaching, in the design studio courses made difficult the undertaking of the OBE prescription of stating behavioral outcomes as artistic activities which are not readily stated as specific behaviors.

It is not coincidental that the Commission on Higher Education (CHED) in the Philippines, in its issued mandate to implement the OBE curriculum format for all tertiary programs nationwide (2012), also wisely recognized the discipline-centered nature of the programs thus espousing a Transitional approach (2014) since a true Transformational approach would imply a reconsideration and restructuring of many disciplines. This would understandably not be acceptable to university instructors in general.

In sum, it may be seen that the above OBE curriculum design procedure, as developed from Spady’s directives, is viable in a Transitional, rather a Transformational, manner for an undergraduate architecture program and perhaps for other tertiary programs as well. Its apparent value lies not only in its focus on the learner through the statement of outcomes, as Spady envisioned, but more so in the accompanying forced consideration and assessment of tertiary curricular situations that have been long-entrenched

but in need of re-examination, a refreshing act that may breathe air into many other aspects of the program and the academic institution itself.

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