

CONCEPT PAPER ON EDUCATIONAL GOALS AND OBJECTIVES AND LEARNING OUTCOMES

Introduction

Developing a clear mission, program educational objectives that address the mission, and desired program learning outcomes provides an integrated framework that is essential for course and curriculum development in any department. This framework can help faculty members structure course syllabi and develop course objectives and learning outcomes aligned with the program mission and objectives. More importantly, it provides all stakeholders with a structure to assess the accomplishment of desired program outcomes.

The objective of this paper is to provide valid, convincing arguments for academic decision-makers on the values and benefits of developing program educational objectives, student learning outcomes, and implementing assessment plans to measure the students' attainment of learning outcomes for the purpose of continuous improvement.

This paper is divided into five sections. The first section presents definitions of the terms used in the paper along with a chart consisting of taxonomy of missions, educational goals and objectives, and learning outcomes at the institutional, faculty, program, and course levels. The second section illustrates the relationships between mission, objectives, and learning outcomes, followed by description and assessment of learning outcomes at the institutional level. The third section describes learning outcomes at the program and course levels. The fourth section addresses issues related to assessment of program educational objectives and learning outcomes. Finally, section five presents examples from AUB that illustrate the ideas presented in the first four sections.

Definitions and Taxonomy

Mission, Objectives, and Learning Outcomes

The mission of a university normally defines the strategic goals of the institution, at the core of which, are educational goals. Educational objectives and learning outcomes are terms that are used to describe expected outcomes of the teaching/learning process. We start by defining these terms and describing the interrelationships between and among the institutional mission, the educational objectives, and the learning outcomes at different levels of the academic structure of a university.

Educational Objectives. Educational objectives are expressed in broad statements that describe the academic and/or professional accomplishments that the course, the program, or the institution is preparing students to achieve.

Learning Outcomes. Learning outcomes are expressed in statements that describe significant and essential learning that learners are expected to have achieved and can demonstrate at the end of a course or program. In other words, learning outcomes identify what the learner will know and be able to do by the end of a course or program.¹

¹ Adapted from <http://dental.gbrownc.on.ca/programs/InsAdult/currlo.htm>

Educational objectives form a hierarchy. The educational objectives of a course, for example, should serve the objectives of the program(s) in which this course is included; similarly the educational objectives of a program should serve the institutional goals.

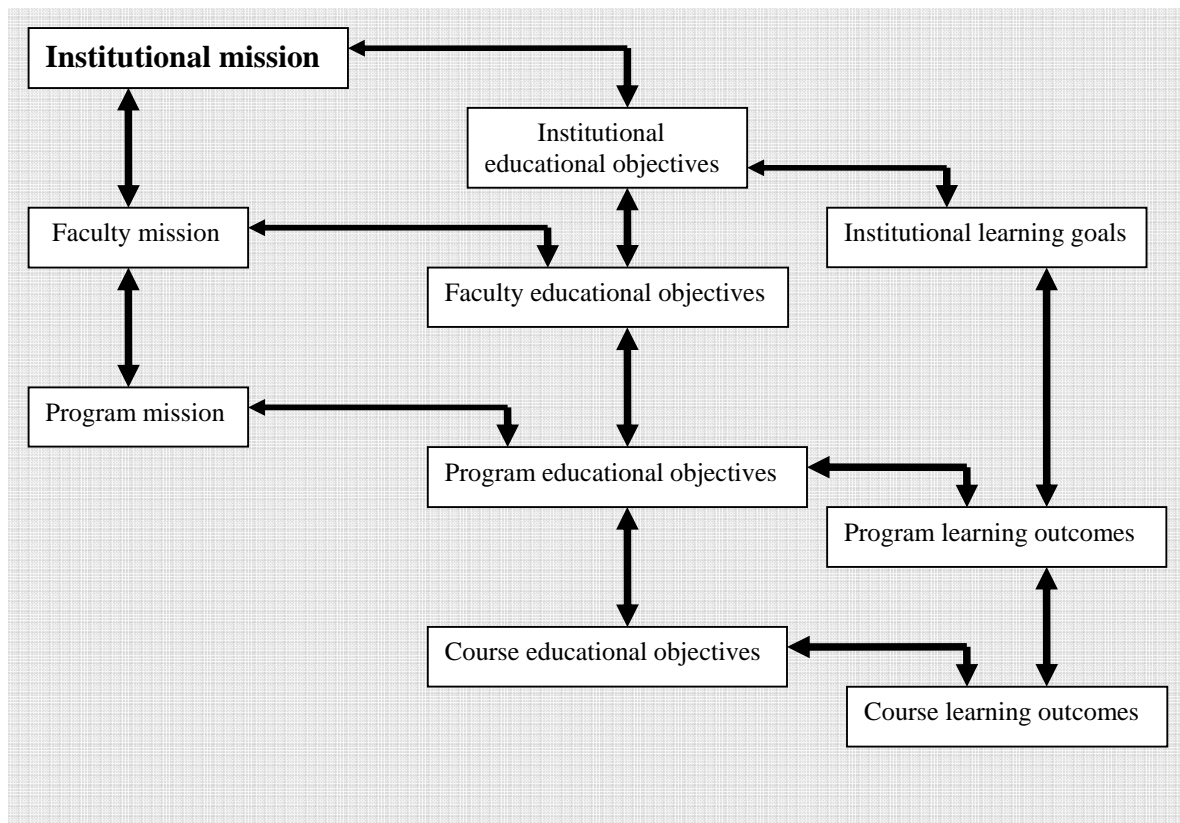
Learning outcomes are similarly related. The learning outcomes of a course are to contribute to the learning outcomes of the program which includes this course. In the same manner the learning outcomes at any level should be aligned with the educational objectives of that level.

Educational objectives and learning outcomes at the same level differ in at least three attributes:

1. *Degree of generality*: Educational objectives are broader statements than learning outcomes.
2. *Statement of outcome*: Whereas learning outcomes are stated in terms of expected student learning, educational objectives are stated in terms of what the institution, the program, or course intends to accomplish.
3. *Constituency*: The constituencies of the learning outcomes are internal to the teaching/learning process (students, teachers,...), whereas the constituencies of educational objectives are basically external to the teaching /learning process (parents, employers, public,...)

Figure 1 gives a taxonomy that identifies the relationships among the mission, educational objectives, and learning outcomes at the institutional, faculty, program, and course levels.

Figure 1: Taxonomy of missions, educational objectives, and learning outcomes at the institutional, faculty, program, and course levels.



Learning Outcomes: Their Assessment and Rationale at the Institutional Level

Learning Outcomes at the Institutional Level

In university education, learning outcomes manifest themselves at different levels of generality: from specific operational statements to guide teaching and assessment at the course level to statements of broad strategic learning goals to guide the mission of the university at the institutional level. One critical factor in the achievement of the mission is the degree to which learning outcomes are synchronized and aligned at course, program, and mission levels. This implies that the achievement of the mission of the university is contingent to a large extent on the achievement of the learning outcomes at the level of the programs and their courses.

AUB is not an exception in this regard. The learning goals that are implicit in the current mission statement were elaborated and articulated in two university documents published in 2000: “**Academic Planning for AUB for the Next Decade**” and “**AUB 2004.**” The first document defined and elaborated the five core strategic goals implied in the mission statement: excellence in education, high-quality research, leadership and integrity, commitment to service, and continual improvement. The two strategic goals, “excellence in education” and “leadership and integrity,” included a number of strategic learning goals. The

second document rationalized and defined a redesigned undergraduate curriculum in which liberal education was strengthened by instituting a course distribution requirement for all AUB undergraduate programs. The course distribution requirement was done according to a matrix consisting of *fields of knowledge* (English and Arabic, humanities, economics and social sciences, science, mathematics, and technology) and *modes of learning* (seminar, research project, and laboratory).

By reviewing and examining the mission statement and the above two documents, we identified three strategic student learning goals:

- ***Development of Higher-Order Thinking Skills:*** Develop students' ability to think about and analyze problems by enhancing their verbal and interactive skills (through the seminar as a mode of learning), their writing and analytic skills (through research project as a mode of learning), and their hands-on experimental skills (through laboratory work as a mode of learning).
 - ***Development of Discipline-Specific Knowledge and Skills:*** Foster knowledge and skills specific to the major field of study as well as broad understanding of the other *fields of knowledge*.
- Leadership and Integrity:*** Encourage students to develop an understanding and appreciation of the values of strong leadership, intellectual curiosity, ethical behavior, mutual cooperation, civic responsibility, diversity, and tolerance.

Rationale for Identifying and Assessing Learning Outcomes at the Institutional Level

Two things are self-evident: The identification of strategic learning goals in the mission statements is essential for itself and is a prerequisite for assessing the achievement of these strategic goals; second, the assessment of strategic learning goals is of little use if not utilized in improving the academic programs.

The assessment of the strategic learning goals has three broad purposes:

- ***Monitoring of the university's strategic goals.*** The assessment data of strategic learning goals at the institutional level is essential to monitor university strategic goals in order to inform resource allocation. One example from AUB may illustrate this function of assessment. Based on data from different sources, the University judged the level of the students' writing in English at AUB to be inadequate and consequently allocated the necessary resources to establish the Writing Center to improve writing in English.
- ***Accountability in terms of fulfilling the mission of the University.*** As a university, AUB is accountable to different stakeholders (students, parents, the Board of Trustees, etc. . . .) and assessment data at the institutional level provide evidence to such groups of stakeholders concerning the extent to which the institution is fulfilling its mission. An example of providing that accountability is the self-study that AUB undertook for accreditation.
- ***Providing information for decision-making and/or promotion of the University.*** Assessment data at the institutional level will help administrators make informed decisions regarding academic programs and at the same time use the data for fundraising. The Mellon grant obtained to strengthen the use of information technology (IT) in teaching is an example of using assessment data (on the use and potential of IT in teaching) as the basis for the decision and to apply for such a grant.

Assessment of Learning Outcomes at the Institutional Level

Assessment of learning outcomes (goals) at the institutional level involves a systematic ongoing process of collecting data to provide evidence of achieving the strategic learning goals implied in the mission statement.

Assessment of learning outcomes at the institutional level could be conducted by means of various approaches and tools, most of which are indirect in the sense that they rely on data from other sources such as assessment of learning outcomes at program and course levels. Other indirect methods include exit (from the university) surveys, follow-up surveys of employers, and surveys of alumni.

At AUB, though we now have at our disposal a large amount of data that may be used in the assessment of learning outcomes at the institutional level, we have yet to develop a system for using this available data in the assessment of these learning outcomes at the institutional level.

Learning Outcomes at Program and Course Levels: Their Characteristics and Rationale

Learning Outcomes at the Program Level

Program learning outcomes are expressed in statements that describe significant and essential learning that learners have achieved, and can reliably demonstrate at the end of a program. In other words, learning outcomes identify what the learner will know and be able to do by the end of a program.²

Characteristics of Program Learning Outcomes. Learning outcomes should be stated in clear, specific and measurable terms, describe what the learner can accomplish as a result of completing a program or a course, describe what the learner can draw from the knowledge, skills, and experiences acquired in multiple courses, and combine or apply them in ways that exceed what they learned in the individual courses. In addition, they should be aligned with the institutional and program missions and expectations of the profession, focused on broad conceptual knowledge and higher order skills, and represent the minimum requirements to complete a program.

Rationale for Setting Program Learning Outcomes. Program learning outcomes provide the opportunity to establish consistency, accountability, and accessibility in an educational program. Making learning outcomes explicit facilitates comparison with requirements of similar programs in other institutions locally, regionally, and internationally, and with professional organizations and accreditation agencies such as the Accreditation Board for Engineering and Technology (Faculty of Engineering and Architecture), the American Association of Clinical Pathologists (Department of Medical Lab Technology), the National League of Nurses and the International Council of Nurses (School of Nursing), and the Association to Advance the Collegiate Schools of Business (Olayan School of Business). This comparison could help in identifying gaps that can be filled, leading ultimately to

² Adapted from <http://dental.gbrownc.on.ca/programs/InsAdult/currlo.htm>

improving the quality of a program. Additionally, developing program learning outcomes allows for identifying areas in which programs are aligned with the University and faculty missions; thus providing opportunities to establish consistency between mission statements and learning outcomes and the possibility of adapting both to the needs of all stakeholders. Moreover, program learning outcomes might help in identifying extra and cocurricular areas that may be needed to support the program. Similar to other areas discussed above, outcomes will help identify strengths and weaknesses providing an opportunity for improvement.

Program learning outcomes can also be used to ensure program coherence because they act as the guides for developing courses and as standards to determine whether or not existing courses accomplish program requirements. Thus, detailed program learning outcomes can be used to develop course learning outcomes that are more precise and accurate, leading to more coherent programs which can help in assessing existing course learning outcomes to identify areas that need improvement and updating. Finally, they provide the necessary information for an accurate assessment and consequently the possibility of identifying strengths and weaknesses with the potential to use the information for quality assurance and improvement.

Explicit program learning outcomes provide the tools to ascertain accountability for all stakeholders. Because learning outcomes make explicit the characteristics of graduates of programs, students can use them to decide whether or not they elect to join a program, while employers, in their turn, can use them to select potential employees from the graduates of the program. In addition, by comparing learning outcomes to what potential employers need and what professional organizations require, the program's areas of strengths and weaknesses can be determined by providing opportunities for continuous improvement. Furthermore, programs can be improved by using learning outcomes to determine the quality of prospective students by developing a profile of students to be admitted to a program. Furthermore, accurate learning outcomes assist in identifying needs more precisely and provide an opportunity for more equitable human and material resource allocation and more alignment with actual rather than perceived needs.³

It is noteworthy that learning outcomes are important not only because they are tools for determining consistency, accountability, and accessibility. They are also essential in an academic institution because they can be used as tools for self-study and reflection activities; two processes that should be ongoing in an institution that aims to continue to meet the needs of all its stakeholders. Periodic self-study exercises are necessary to identify emerging strengths, weaknesses, and opportunities and threats as part of an ongoing process that is used to assure that programs are up-to-date and responsive to stakeholders' needs.

Learning Outcomes at the Course Level

Course learning outcomes are statements that describe significant and essential learning that learners have achieved, and can reliably demonstrate at the end of a course. In other words, learning outcomes identify what the learner will know and be able to do by the end of a course.³

Characteristics of Course Learning Outcomes. Course learning outcomes should be stated in clear, specific, and measurable terms, describe what the learner can accomplish as a

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result of completing a course, focus on what the learner will be able to do as a result of taking the course, describe what the learner can draw from the knowledge, skills, and experiences acquired in a course. In addition, they should be aligned with the program learning outcomes and represent the minimum requirements to complete a course

Rationale for Setting Course Learning Outcomes. As is the case with program learning outcomes, course learning outcomes provide the opportunity to establish consistency, accountability, and accessibility in an educational program. Many of the benefits of using course learning outcomes are similar to those of program learning outcomes. However, being more specific, they provide more detailed information about the outcomes of the course and consequently more opportunities to conduct more in-depth analysis of the strengths and weaknesses of a course and ultimately of a program. Course learning outcomes provide the opportunity to establish the consistency of courses with the program learning outcomes as well as with similar courses offered at other institutions. Moreover, course learning outcomes are useful for accountability purposes. First, they can be used as the basis for assessing students' learning and their accomplishment of course outcomes. Second, assessing learning outcomes of all courses in a program can help determine whether or not a program has achieved what it promised to achieve. Finally, course learning outcomes provide students and other stakeholders with access to detailed information about what the course aims to accomplish and consequently help them take informed decisions regarding the course. In summary,⁴ course learning outcomes help students learn more effectively and determine where they stand in relation to course requirements, make clear what students are expected to gain from taking the course, and help instructors design their materials more effectively, select appropriate teaching strategies, and prepare examinations or assessments based on the learning outcomes. Finally, course learning outcomes permit students to take more responsibility for their own learning when they know what they are expected to do and what standard they are expected to achieve.

Assessment at the Program and Course Levels

Assessment of educational objectives and learning outcomes involves the systematic and ongoing gathering and use of information about student learning for the purpose of improvement. The result of assessment would be a coherent curriculum in which all courses have well-defined and interconnected roles in achieving the program mission. Writing course learning outcomes enables the program to demonstrate exactly how certain outcomes are addressed in the curriculum. If the outcomes are continually assessed and the results are used to improve instruction in the courses that address them, then the degree to which the program meets its objectives may improve.

Assessment at the course level involves a systematic process for collecting data on students' mastery of course material using appropriate methods for certifying student performance. However, assessment measures used to demonstrate that students have achieved the stated learning outcomes at the *course* level will not be complete or meaningful if not backed by an overall documented assessment plan at the *program* level.

At the program level, assessment comprises one or more processes used to identify, collect, and prepare data to evaluate the achievement of program learning outcomes and

⁴ Adapted from http://jupiter.ln.edu.hk/tlc/learning_matters/05-2005-622005.pdf

educational objectives. This is followed by interpreting data and other evidence accumulated through assessment practices. Assessment determines the extent to which program learning outcomes or educational objectives are being achieved and results in decisions and actions to improve the program. The program assessment processes define a Continuous Improvement Plan (CIP) for a program.