Brief #2: From Attributes to Outcomes: Program Review Processes 1

Karen Nicholson
Teaching and Learning Development Officer
Council of Ontario Universities Degree Level Expectations Project
McMaster University

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The following document, based on the *Ontario Universities Council on Quality Assurance. From Attributes to Outcomes*. *Program Review Processes 1* webinar (Holmes, 2010), provides a brief overview of strategies for developing program-level outcomes.

Program Level Outcomes and Quality Assurance

In order to comply with the *Quality Assurance Framework* (Quality Assurance Task Force, 2010), Ontario's publicly assisted universities will need to identify learning outcomes for each program offered. These will then be mapped to the undergraduate or graduate Degree Level Expectations, as appropriate. The identification of program-level outcomes is a key feature of outcome-based, learner-centered education that "places student learning at the center of assuring and advancing quality of higher education" (Abate, Stamakis, & Haggett, 2003, p. 2). According to Spady (1994), if outcome-based education is to be adopted successfully, the exit outcomes for the curriculum must first be specified.

Learning outcomes are statements that describe the knowledge, skills and values a student has achieved and is able to demonstrate as the result of learning. The term "graduate attributes" is also used to describe the knowledge, skills and values that a student should be able to demonstrate upon completion of a program. Outcomes can be written at the lesson, module, course or program levels, as shown in Figure 1. *Learning Outcomes at Lesson, Module, Course and Program Level.*

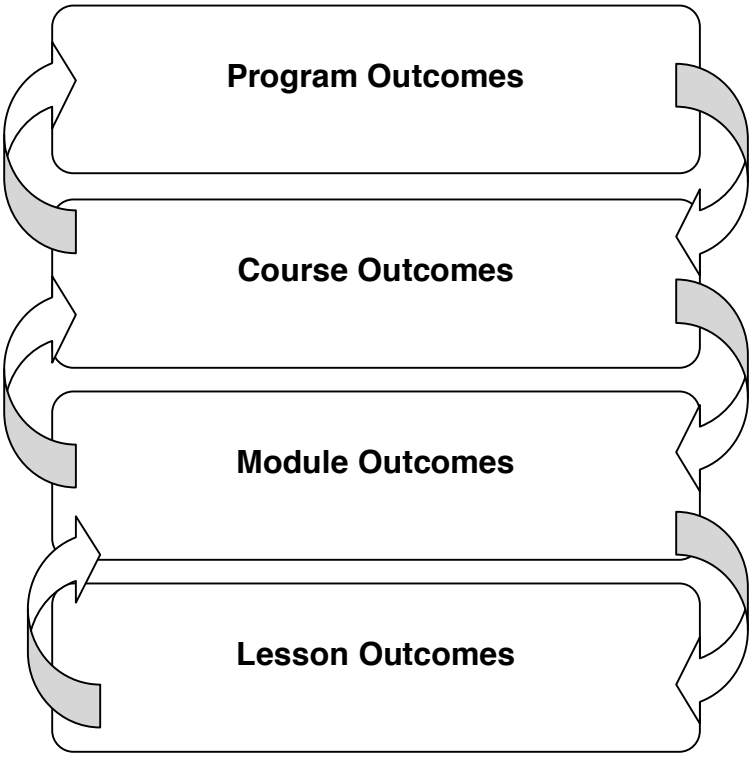

Figure 1. Learning Outcomes at Lesson, Module, Course and Program Level

Program-Level Learning Outcomes and Curriculum Development and Review

Identifying program-level learning outcomes is also an essential element of curriculum development and review. A curriculum consists of a structured program of learning outcomes, course content, learning opportunities and educational experiences, instructional strategies, and assessments.

The curriculum development model used at the University of Guelph provides the foundation for the program review process described in the webinar, *Ontario Universities Quality Council. From Attributes to Outcomes. Program Review Processes 1* (Holmes, 2010). The Guelph model, described as "faculty-driven, data-informed, and educational development-supported" (Wolf, 2007), includes three phases: (a) Curriculum visioning; (b) Curriculum development, and (c) Alignment, coordination and development. In the first phase, program goals and objectives are identified. This occurs by generating a list of the attributes of the ideal program graduate through a group brainstorming exercise, usually at a retreat attended by faculty, administrators and students. Mayne Devine, Daly, Lero and MacMartin (2007) describe how this process was used to design a new program at the University of Guelph:

> Once we had solidified this description of the new major, we began the process of articulating the attributes of the ideal graduate to help us develop our program objectives and a description of our core competencies. We set up a half-day workshop and divided faculty into three working groups. Faculty identified the ideal graduate attributes of a graduate of this new major along three dimensions: core values, skills and competencies, and knowledge domains. These were some of the most dynamic discussions we had throughout the entire process and resulted in the development of the attributes of the ideal graduate. (p. 51)

Table 1. *Skills and Value Learning Outcomes at the University of Guelph-Humber* provides examples of skills and values learning outcomes, or "objectives", developed for the six programs offered at the University of Guelph-Humber in 2002 (Evers & Wolstenholme, 2007, p. 85).

Table 1. Skills and Value Learning Outcomes at the University of Guelph-Humber	
Skills Learning Objectives	Values Learning Objectives
Personal Skills	*Citizenship*
1. Personal Responsibility and Time Management	1. Sense of historical development
2. Responsibility	2. Global understanding
3. Adaptability and learning	
4. Problem solving	
5. Resource management	
Communication Skills	*Moral and aesthetic maturity*
6. Reading	3. Moral maturity
7. Writing	4. Aesthetic maturity
8. Speaking	
9. Listening	
10. Communicating through evolving media	
Mathematical and Computing Skills	*Lifelong learning*
11. Mathematics	5. Understanding of forms of inquiry
12. Computer applications	6. Depth and breadth of understanding
Teamwork and Leadership Skills	7. Independence of thought
13. Teamwork and interpersonal	8. Love of learning
14. Leadership and assertiveness	
15. Conflict management	
16. Decision making	
Thinking Skills	
17. Research	
18. Critical thinking	

19. Responsible risk taking	
20. Creative thinking and visioning	

Once an initial list of ideal graduate attributes has been created, these can be mapped to the undergraduate or graduate Degree Level Expectations.

Finally, using the list of ideal graduate attributes, broad program-level learning outcomes are created. In order to do this, the essential knowledge, skills and values of the *average* program graduate need to be identified from the list of ideal attributes generated during the brainstorming activity. Program-level learning outcomes should reflect the disciplinary context of the program; this disciplinary focus distinguishes them from the generic Degree Level Expectations. Figure 2 provides one example of a program outcome generated from a list of graduate attributes.

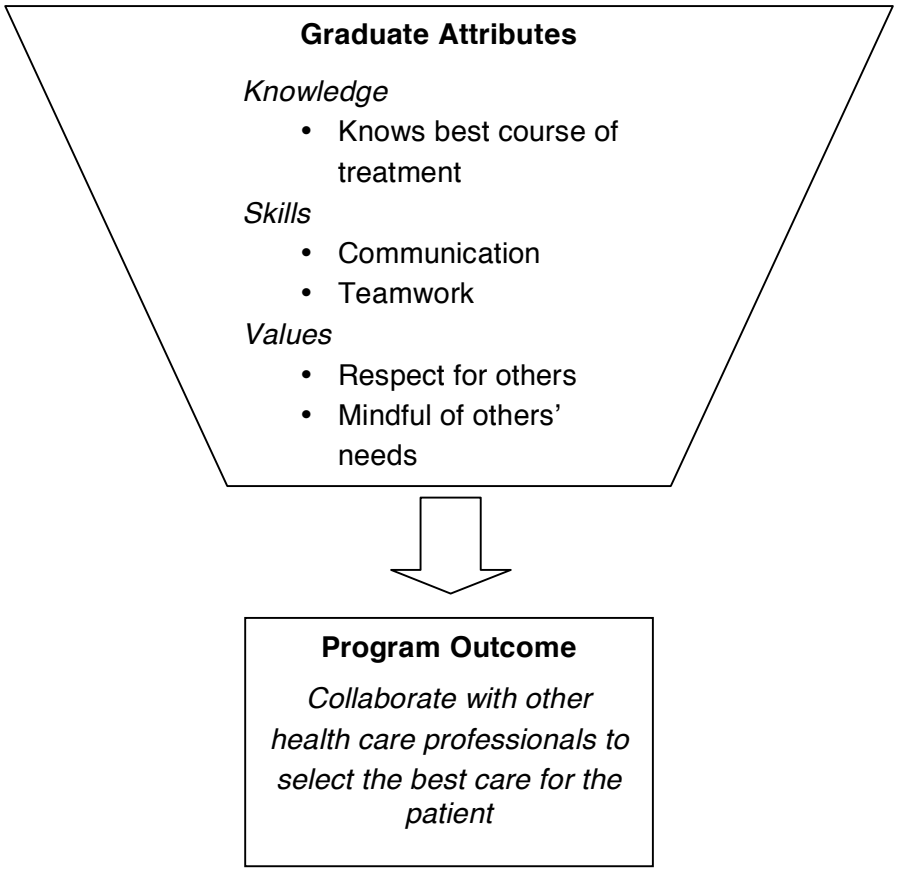

Figure 2. From Graduate Attributes to Program Outcomes (Holmes, 2010)

It should be noted that these steps are rarely accomplished in one day, and some of them may be assigned to designated individuals or groups, such as curriculum committees. More detail about the brainstorming and mapping processes described

above are provided in our online web tutorial, *From Attributes to Outcomes* (Holmes, 2010a).

Tools for generating program-level outcomes include existing program evaluations, faculty and university learning outcomes, as well as professional accreditation standards and the learning outcomes developed for similar programs. Bloom's *Taxonomy of Educational Objectives* (Bloom et al, 1956) and the revision of the *Taxonomy* by Anderson et al. (2001), which divides the cognitive knowledge domain into factual, conceptual, procedural and metacognitive knowledge, are also useful resources. For more information on how to write learning outcomes, consult the *Writing Learning Outcomes* webinar (Goff, 2010) in this series.

Program Outcomes, Course Outcomes and Lesson Outcomes

As mentioned above, outcomes can, and should be written at a number of levels, including program, course, unit and lesson. In outcome-based education, a "design down" process is employed which moves from "exit outcomes" to course outcomes and outcomes for individual learning experiences. Outcomes at each successive level need to be aligned with, and contribute to, the program outcomes (Harden, 1999). Mapping exit outcomes using frameworks such as the Degree Level Expectations can help with this process: "The mapping of opportunities for development of graduate attributes in the planned curriculum plays an important role in relation to quality assurance and reporting processes, and embedding these opportunities in curricula may ensure alignment between the espoused curriculum and the taught curriculum" (Bath, Smith, Stein & Swann, 2003, p. 313).

Aligning Outcomes and Assessments

When creating program-level outcomes, it is important to consider the types of teaching and learning activities and assessment within the program and whether or not these are aligned with the outcomes. The "backwards design" approach formulated by Wiggins and McTighe (2005) may be of interest here. In this approach to curriculum design, learning outcomes are identified first. Next, assessments that provide evidence that learning outcomes have been met are chosen. Finally, learning and teaching strategies and activities that will enable students to attain these outcomes are chosen.

Conclusion

In this paper and the accompanying webinar, *From Attributes to Outcomes: Program Review Processes 1* (Holmes, 2010), we have presented one method for developing program-level learning outcomes. Several additional frameworks for curriculum development and review used in Canadian universities, as well as implications for the faculty role and institutional support, are discussed in Wolf and Christensen Hughes (2007).

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