Curriculum Mapping: Lamenting the Logistics of Data Collection

J. Groen & P. Milot, R. Sawler. University of Ottawa

Program Review at the University of Ottawa

Each academic program at the University of Ottawa must follow the protocol for cyclical review every 7-8 years. Consisting of an initial self-evaluation of the program, internal recommendations by a Senate committee, external review and a final recommendation report, the timeline is structured as follows:

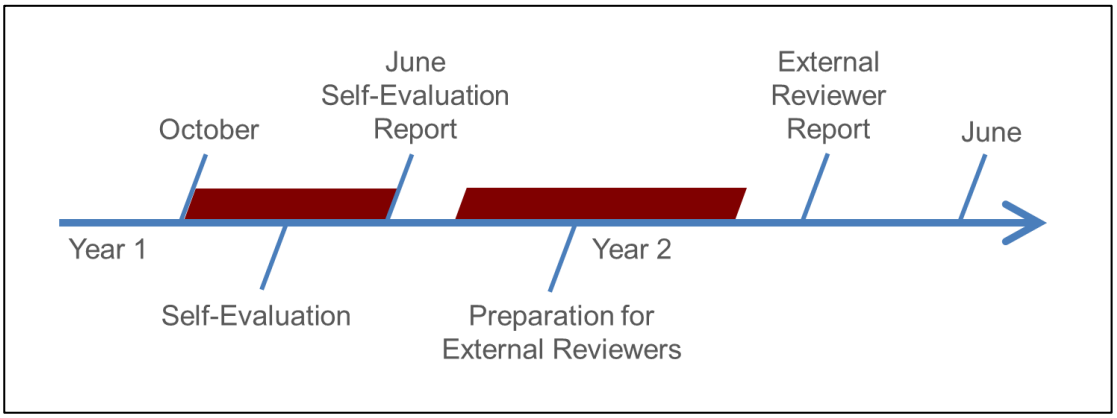

Figure 1: University of Ottawa timeline for the cyclical review of undergraduate programs

What is Curriculum Mapping?

Curriculum mapping is the visual representation of the underlying logic of curricular design for a given program (Maki, 2004). In higher education, it is most frequently used for two main purposes:

1) To ensure the alignment and sequencing of learning outcomes and assessments across courses when developing a new program; and

2) To evaluate the current alignment and look for any gaps, redundancies and inconsistencies in order to enhance an existing program (Uchiyama & Radin, 2009; Kopera-Frye, Mahaffy & Svare, 2008).

Curriculum mapping is “a deliberate process of curriculum deconstruction in order to understand better how the sum of the parts relates to the whole” (Jackson, 2000, p.144).

Curriculum Mapping in Five Stages

An evidence-based approach to collaborative curricular enhancement can commonly be characterised by five stages:

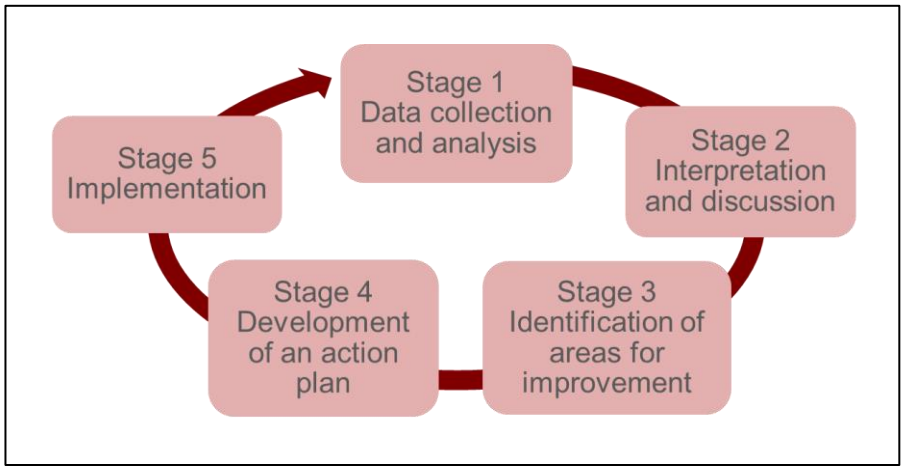

Figure 2: Five stages of curriculum enhancement

Stage 1 – Data Collection and Analysis

Using a Canadian based internet survey tool (Fluidsurvey), instructors identify which program learning outcomes are covered by their courses, at which level these outcomes are presented (introductory, intermediate, advanced), how the outcome is covered (taught, practiced, assessed), and if assessed, by what means.

Learning outcomes:
For each program learning outcome covered by your course, please indicate the level of inclusion, its development and the principal assessment used to measure its achievement. Refer to the guide sent by email for more information.

	Level of Inclusion (I, R or A)	Development of the learning outcome	(If Evaluated) Main Assessment Used
1. Describe, analyse and apply key concepts of second language education	---	---	---
2. Identify, analyse, and compare the principal theoretical and methodological frameworks connected to second language education	---	---	---
3. Analyse, explain, and promote interdisciplinary (education, psychology, sociology, linguistics or public policy) with regard to the study of questions and issues associated with second language education	---	---	---
4. Analyse and apply major research trends associated with second language education	---	---	---

Figure 3: Screen capture of the learning outcome section of the survey

Prefered evaluation methods:
Make a list of your course assessments as outlined in your syllabus and specify the percentage associated with each and the week it is administered.

	Assessment	Percentage (%)	Week of occurence
Evaluation 1	---	---	---
Evaluation 2	---	---	---
Evaluation 3	---	---	---
Evaluation 4	---	---	---
Evaluation 5	---	---	---
Evaluation 6	---	---	---

Figure 4: Screen capture of the evaluation methods section of the survey

Stage 2 – Interpretation and Discussion

Once the course information is collected, tables can be generated within a spreadsheet to better visualize the program's underlying framework. Current tables include the integration of learning outcomes across program courses, assessment methods used throughout the program, grade weight and distribution of assessments across the program, favoured instructional approaches, etc.

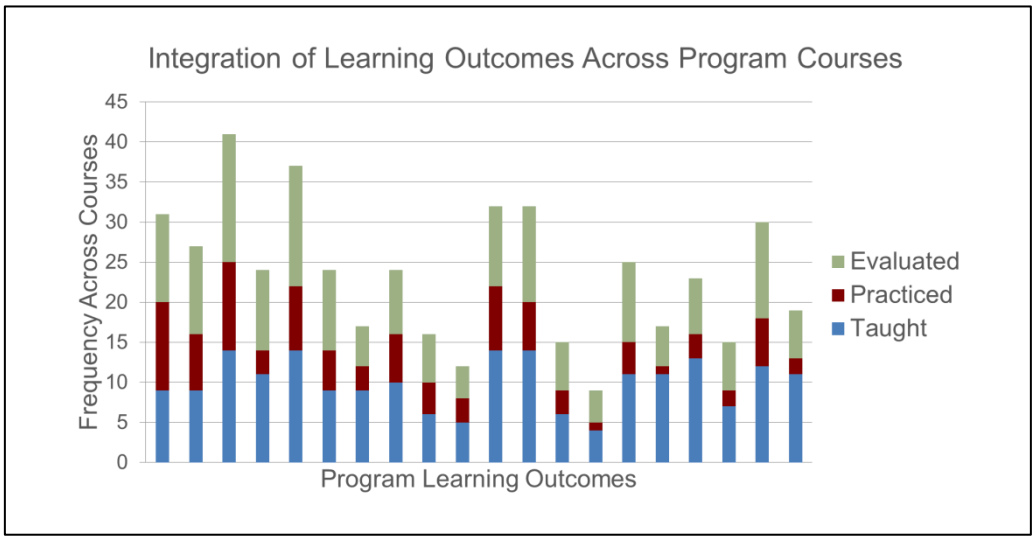

Figure 5: Sample learning outcome distribution table

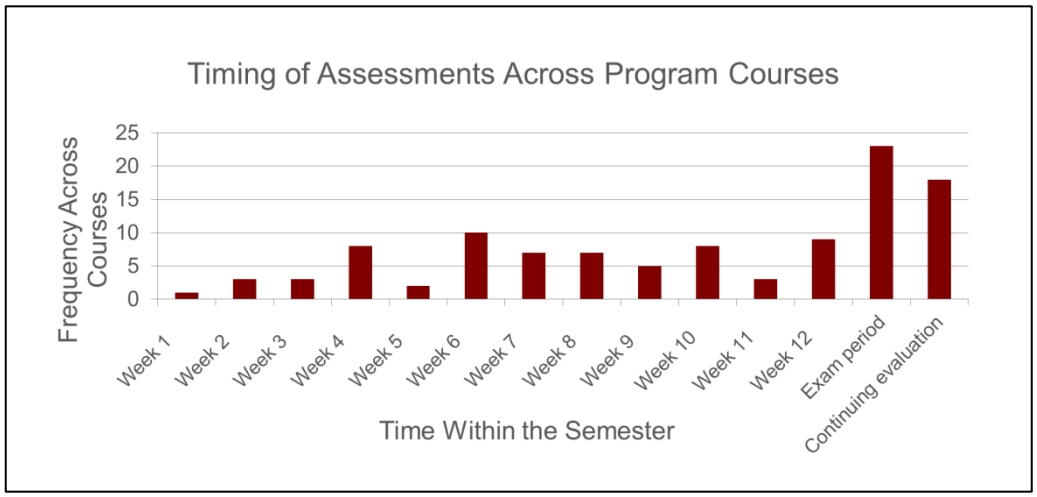

Figure 6: Sample assessment distribution table

Stage 3 – Identification of Areas for Improvement

As a catalyst for reflection and interdepartmental discussion, a series of questions are provided. These include:

- What learning outcomes are most/least emphasized?
- Where are the strengths and gaps in teaching and assessment across the program?
- Do the instructional and assessment methods used best align with the intended learning outcomes?
- What instructional/assessment strategies are most/least used?
- Are the instructional and assessment methods used in the courses congruent with the discipline and the program's/Institution's mission/vision?
- In terms of supporting student learning, how well are the selected/utilized instructional and assessment methods actually working?

Kenny (2014)

Stages 4 and 5 - Development of an Action Plan and Implementation

An action plan is most effective when it is faculty driven, data informed and supported by curriculum design specialists, and includes specific responsibilities and timelines as well as mechanisms to sustain the curriculum review and enhancement process by systematically revisiting the five stage cycle (Wolf, 2007).

Seamless Data Collection: uoSyllabus

As these practices evolve at the Centre for University Teaching, the questionnaire continues to grow and become more robust. Of particular interest is how to collect information regarding student achievement of program learning outcomes and track progress on a continuous basis.

A tool called *uoSyllabus* being tested in a pilot phase may help standardise the collection of this information. *uoSyllabus* is an online module allowing instructors to produce syllabi that conform with the rules outlined by Senate and offer the possibility of adding content which aligns with best practices. Once the information is entered, the module produces a syllabus in a PDF format.

The module offers the possibility to specify which learning outcomes, accreditation standards or attributes are covered by each course within a program, thus facilitating data collection for various accreditation reports which many programs (including programs in professional schools) are subject to. The module equally enables curriculum design specialists to continuously collect information, thus facilitating the analysis of curricular alignment for the purpose of program evaluation.

uoSyllabus is now being tested by four professional Masters programs from the School of Rehabilitation Sciences: Audiology, Speech-Language Pathology, Occupational Therapy and Physiotherapy. All programs have accreditation standards that are specified in uoSyllabus, thus making it possible to identify how these standards are met by program courses.

List of uoSyllabus Advantages

Student	Faculty members	Institution
Course syllabi are accessible (WCAG 2.0, level 2A)	Course syllabi are accessible (WCAG 2.0, level 2A)	Course syllabi are accessible (Accessibility for Ontarians with Disabilities Act, 2005)
Information is easily identifiable	uoSyllabus online module is accessible (WCAG 2.0, level 2A)	Centralised database of PLOs
Automatically sent to students via uoZone (online student portal)	Online management of past, present and future syllabi	Control panel for Program Chairs with pre-formatted statistic tables of PLOs
Public syllabi are searchable	User-friendly navigation	Responds to Senate requirements (uOttawa academic regulation 8.5)
	Public syllabi are searchable	Accurate image of how PLOs are covered by programs
	Multiple professors can contribute to a course syllabus	Longitudinal data (instead of a snapshot taken every 7-8 years)
		Moving discussions away from the mechanics of data collection to a culture of continuous program enhancement

List of Pre-Formatted Data Accessible Through the Control Panel

<table>
<tr><td colspan="2">All data and crosstabs below are by course code letters (e.g. PHT)
OR
By course code letters AND 1st number of course code numbers (1, 2, 3, 4 and so on)</td></tr>
<tr><td>Descriptive (1 variable)
Count/Frequencies:</td><td>Crosstabs (2 variables):
Count/Frequencies:</td></tr>
<tr><td>List of courses in uoSyllabus (Letters, numbers, section) by semester (e.g. 20149)
Number of times each PLO is covered by courses
Teaching strategies
Methods of assessment
Value of assessments
Week of assessment</td><td>Course learning outcomes x PLO
For each PLO, crosstab with:
Teaching strategies
Type of assessment
Level of inclusion (Principal or Secondary) OR (Introduction, Reinforcement or Advanced)
Development (7 combinations of taught practiced and assessed= NT-NP-A, NT-P-A, NT-P-NA, T-NP-NA, T-NP-A, T-P-NA, T-P-A)
PLOs (count) x Level of inclusion
PLOs (count) x Development
Value of assessment x Type of assessments
Value of assessment x Week of assessments</td></tr>
<tr><td>Crosstabs (3 variables):</td><td></td></tr>
<tr><td>PLOs (count) x type of assessment x week
PLOs (count) x type of assessment x percentage
PLOs (count) x week x percentage
PLOs (count) x Level of inclusion x Development</td><td></td></tr>
</table>

Upcoming Development of uoSyllabus

- All information regarding PLOs will be centralised under one tab (Curriculum Tab) allowing for the collection of more refined data about how they are taught and evaluated.
- Faculty members will be able to enter the average result obtained for each evaluation (giving us a first look at which PLOs are most or least achieved by students).
- Through a central system, we will be able to link the mean course grade to PLOs
- Manager access for administrative staff in departments will allow one to:
    - Add user / prof
    - Ability to see and edit all course syllabi for their programs
    - Add program learning outcomes
    - Add instructional approaches
    - Add assessment methods
- Two types of access to uoSyllabus: Regular mode and Course Design mode.

Contact

Jovan Groen – jgroen@uottawa.ca
Patrick Milot – pmilot@uottawa.ca

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