Embedded Assessment of General Education Outcomes

The University of Michigan-Flint’s Approach: Payoffs and Challenges

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Overview

General Education *Curriculum* and Its Reform

History of Assessing General Education *Outcomes* at UM-Flint

Rubric Development

Requisite Support and Faculty Development

Potential Payoffs
Polling Question

Which type of post-secondary institution level are you representing?

a. Undergraduate – 2 year
b. Undergraduate – 4 year
c. Graduate
d. Both Undergraduate & Graduate
e. Other*

*Submit explanation via question/chat feature
General Education Curriculum Pre-Reform:

- English Composition
- Distributional (Fine Arts, Humanities, Natural Science, Social Sciences)
- Additionally, Students needed to complete two of 5 potential “Area Options.”
  1. Analytic Reasoning
  2. Cultural Studies
  3. Foreign Language
  4. Values Inquiry
  5. Foundations of Western Civilization
The “Model” of Student Learning for this Curriculum could be characterized by the following:

1. Student Completes 50 credit hours of Required Distribution Credits
2. “Miracles” Occur
3. Student Learning
This “Model” highlights two flaws:

- There are no learning outcomes defined
- Consequently, it is difficult to determine if learning actually occurred
During the Fall and Winter of 2005 and 2006, we began a campus-wide effort to reform our General Education program.

The result was the following:

1. Mandatory First Year Experience for all students entering with less than 25 credits
2. A Capstone course designed on a program by program basis
3. An “Enhanced” distributional system with 4 additional areas (HW, T, FQ, and GS)
4. A call for the development of inter-disciplinary suites of classes
Our new curriculum represented a more intentional design and incorporated some best practices.

However, it still did not possess clearly articulated learning outcomes.

So, for the next two years, the faculty worked to specify learning outcomes and establish a governing structure.
Integration into the Learning Community of the University of Michigan-Flint

- Reflect on one's own learning processes
- Demonstrate facility with research methods
- Demonstrate the ability to think critically
- Demonstrate the ability to think creatively

Enhanced Communication Skills: Written, Verbal and Non-Verbal

- Produce competent written work
- Participate in dialogue that involves respectful and careful listening
- Use visual or non-verbal tools to enhance and decode messages

Enhanced Breadth and Interconnectedness of Knowledge

- Demonstrate knowledge of culture and the arts, social structure and process, and the physical and natural world
- Demonstrate knowledge of economics, finance, and quantitative literacy; health and well-being; and science and technology
- Use multiple perspectives and methodologies to analyze real or hypothetical problems

Engaged Citizenship: Local to Global

- Investigate the nature of citizenship
- Apply knowledge to complex issues such as social justice, globalization, economic growth and distribution, environmental sustainability, public health, etc., in increasingly broad spheres of influence
During this time, the University did assess its older Gen Ed curriculum.

### History of Assessing General Education Outcomes

Between 2002 and 2009, the university developed a series of direct assessments for:

<table>
<thead>
<tr>
<th>Mid-Career Writing</th>
<th>Critical Thinking</th>
<th>Diversity</th>
<th>Scientific and Quantitative Reasoning</th>
<th>Humanities and Fine Arts</th>
</tr>
</thead>
</table>

During this time, the University did assess its older Gen Ed curriculum.
The University also developed and administered indirect assessments on:

• self-assessment of student writing
• survey on critical thinking
• survey on scientific and quantitative reasoning
• survey on diversity
These assessments were administered mainly as summative assessments at the end of our undergraduates’ careers.

- hosting of assessment days on Saturday mornings
- on-line examinations and surveys
History of Assessing General Education Outcomes...

Despite an array of incentives (at the end, we were providing students with cash and iPods), our efforts yielded unimpressive rates of participation.

- Between 10 and 20 students per year
History of Assessing General Education Outcomes...

Not only were the rates of participation unacceptable, the assessment results were less than inspiring because:

• Students did not take the assessment exercises seriously

• The assessment of student learning often occurred many years after the student took the relevant course
These criticisms deeply influenced the development of our assessment plan that we currently use to assess our General Education Program.

In the end, we required *EVERY* course that applied for distributional credit to specify and describe how it would assess 5 of the 12 learning outcomes.
History of Assessing General Education Outcomes...

Given the magnitude of the anticipated assessment of student learning outcomes in our General Education courses, the assessment protocol had three KEY features:

- Embedded
- Incremental
- Focused
**Embedding** our assessments increases the likelihood that:
Students and faculty gain a shared understanding of the expectations regarding the learning outcomes.

- Students receive formative feedback
- Students and faculty gain a shared understanding of the expectations

Further, faculty and administrators do not have to assess student work twice.
History of Assessing General Education Outcomes...

The implementation of the assessment of student learning will be *incremental* and based upon the gradual development of these assessment instruments. As of date:

1. competent writing
2. reflection on one’s own learning, and
3. facility with research methods.

This academic year we will assess:

4. critical thinking, and
5. the use of multiple perspectives.
Finally, the assessment of student learning at the University of Michigan-Flint is focused.

It is impossible to assess every outcome, for every student, in every course.

However, we felt that our commitment to foster the development of specific learning outcomes must be honored.

Therefore, the assessment of the twelve outcomes will rotate with one or two serving as the outcome “du jour.”
Now that we had an assessment plan for General Education, the next challenge was to implement our assessment system.

A system that had to accommodate a vast array of disciplines, within the College of Arts and Sciences, and three professional schools, at various stages in our students’ careers.
Rubric Development...

In short, we needed to develop rubrics, criteria and narratives that would:

- Be applicable to a diverse set of courses and student work products
- Span levels of student learning across an undergraduate career
- Provide clear direction to the many faculty assessing their students
As a start, the university adopted the following framework:

<table>
<thead>
<tr>
<th>LINE ITEM define</th>
<th>MASTERY 5</th>
<th>DEVELOPING 4</th>
<th>DEVELOPING 3</th>
<th>EMERGING 2</th>
<th>EMERGING 1</th>
<th>0</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box text</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Rubric Development...

But *HOW* to generate such rubrics?

The *key* to solving this assessment challenge was to mine the faculty narratives on student learning and assessment used to apply for “admission” into the General Education Curriculum.
The form that faculty completed as far back as 2009 looked something like the following.

<table>
<thead>
<tr>
<th>Course Title:</th>
<th>Department:</th>
<th>Course Prefix:</th>
<th>Course Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Narrative:**

**Assessment tools:**

<table>
<thead>
<tr>
<th>No.</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This form would come to be known as the GELO (Jell-O) form.
From these hundreds of narratives, a group of faculty were able to identify essential features of our General Education outcomes.

<table>
<thead>
<tr>
<th>Most Frequent Descriptors of “Competent Written Work”</th>
<th>N of Forms Out of 266</th>
<th>Areas Using This Key Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized/coherent/logical/clear structure/well constructed</td>
<td>202 (76%)</td>
<td>AFA, ARH, AST, BUS, CPL, CSC, CIS, CSC, EHS, ENG, EGR, HIS, FOR, PHL, PSY, HIS, SWK, CSEP, MTH, MUS, NUR, GEO, ENV</td>
</tr>
<tr>
<td>Use of relevant evidence/support/examples/corroborating</td>
<td>201 (76%)</td>
<td>AFA, AGE, ARH, ANT, AST, BUS, CPL, CSC, CHM, EGR, ENG, FOR, SWK, PSY, GEO, ENV, SOC, BIO, HAS, CSEP, NUR</td>
</tr>
<tr>
<td>Surface skills/spelling/grammar/mechanics/correctness/basic clarity/accuracy</td>
<td>155 (58%)</td>
<td>AGE, AFA, ANT, BIO, CPL, CSC, EHS, EDE, ENG, ENV, GEO, FOR, PHL, POL, PSY, MTH, HIS, MUS, HAS, NUR, HAS</td>
</tr>
<tr>
<td>Clear/effective thesis/development of thesis/conclusion/significance of findings</td>
<td>99 (37%)</td>
<td>AFA, ANT, ARH, AST, CIS, CSC, CPL, ENG, EGR, POL, PSY, SWK, HAS, CHM, EHS, MTH</td>
</tr>
</tbody>
</table>
Similarly, from facility planning to assess research methodology, the working group derived the following three criteria.

<table>
<thead>
<tr>
<th>Key Terms Used To Describe “Facility With Research Methods”</th>
<th>N of Forms Out of 117</th>
<th>Areas Using This Key Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporate multiple sources/Use a range of sources</td>
<td>64 or 55%</td>
<td>AFA, ARH, CIS, CSC, DAN, EDE, ENG, HIS PHY, SPN, THE, UNV</td>
</tr>
<tr>
<td>Analyze sources/Interpret data</td>
<td>56 or 48%</td>
<td>AFA, ANT, BIO, BUS, CSC, CIS, CHM, EDE, EGR, ENG, GEO, HCR, HIS, MTH, MUS, NUR, PHY, PHS, PSY, SCI, SOC, SWR, UNV</td>
</tr>
<tr>
<td>Identify/differentiate/use appropriate (multi)disciplinary/scientific methods</td>
<td>46 or 39%</td>
<td>AFA, ANT, ARH, BUS, EHS, ENG, HCR, HIS, LIN, PSY, SCI, SOC, SWR</td>
</tr>
</tbody>
</table>
Rubric Development...

The next step was to fill-in the narratives for the criteria across the levels of 0-5 with the following Guiding principles in mind.

- Keep It Simple
- Don’t Try To Include Everything
- Stay Within The Lines
- Try To Avoid The Pitfall Of Incremental Adjectives
Rubric Development...

The point of sharing this story on how we developed our rubrics is to underscore the importance of rubric development.

- We did not “import” other rubrics wholesale; rather:
  - The rubrics developed came from our faculty and their descriptions of student learning and assessment.
  - Consequently, the majority of faculty members could “hear” themselves in the rubrics.
  - This made adoption and use more natural.
Polling Question

Does your institution assess Gen Ed Outcomes with direct measures of student learning?

a. No (we use indirect methods such as NSSE)

b. Yes, but at the course level (for example, 43% of students in SOC 100 scored at or above “acceptable”)

c. Yes, at the individual student level in each course
By the fall semester of 2011, the university was ready to launch its assessment of our first General Education outcome, competent writing.

- The university had developed the rubric that would be used to assess writing.
- Acquired the software (Tk20) to enter the data.
- Linked the course schedule/registration data with Tk20 so that we could identify which courses contributed to this specific learning outcome.
As Coordinator of General Education, I began by creating *individual* email messages.

While time consuming, it sent a personal message and allowed me to become more familiar with the faculty involved in this assessment process.
In these initial emails, I included:

• A brief explanation as to why they received this message
• General instructions that this assessment should be applied to the most appropriate work sample
• While you may apply the assessment multiple times, I am only asking for the data on one assessment
• A copy of the rubric loaded into Tk20
Requisite Support and Faculty Development...

In the first year, the university used the course-based observations form which allowed us to reproduce the rubric on a student by student basis and faculty could simply radio-button in their data.

• Allowed faculty to record assessment data with an interface that looked exactly like the rubric.
The tricky thing was to walk faculty through checking out the assessment rubric, attaching the rubric to their course(s), and then entering the data.

- I first created a detailed handout with step-by-step instructions
- The handout had many screen-shots and lots of arrows to point out the appropriate button or where to look on the screen.
- The following examples illustrate my approach – in this presentation, we are not as concerned with the actual tasks.
Requisite Support and Faculty Development...

Go to the Courses Tab
Scroll down until you see the GenED Writing Rubric, and check the box to the left of the assessment tool’s name. Once you have checked the box, then click on the “Make Available to me” button.
Requisite Support and Faculty Development...

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**University of Michigan-Flint Rubric for the Embedded Assessment of COMPETENT WRITTEN WORK**

COMPETENT WRITTEN WORK is structured (organized/logical), substantiated (supported), and correct on the surface (clear expression grammatically/mechanically), as defined by the disciplinary conventions appropriate to the field.

<table>
<thead>
<tr>
<th>Rubric</th>
<th>Performance Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRITERION</strong></td>
<td><strong>Mastery</strong></td>
</tr>
<tr>
<td>STRUCTURE</td>
<td>5</td>
</tr>
<tr>
<td>Substantiation</td>
<td>5</td>
</tr>
<tr>
<td>Language</td>
<td>5</td>
</tr>
</tbody>
</table>

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*Note: The rubric details the criteria and performance levels for assessing written work based on structure, substantiation, and language.*
Around the middle of the semester, I hosted several drop-in trainings for faculty

- We worked through the process.
- In addition, the sessions served as a forum to talk more generally about the assessment plan for courses carrying General Education distribution designations.
- While participation is now limited, it is important to remember that this process will always be new to some faculty.
After our initial year using the observations method of entering data, faculty wanted a more efficient method, as entering data into rubrics on a student-by-student basis was time consuming (and annoying).

So, the following year we switched to course-based assessments where faculty are presented with a list of students and columns to enter their data.
Requisite Support and Faculty Development...

Summer 2012 COM 210 Intro to Public Speaking 01 Please Complete GenEd Reflection Rubric

**Outcome/Goal:** 1. Reflect on one's own learning processes

**Measure:** Course Based Assessment for Reflection on One's Own Learning

**Assessment Period:** 2011 - 2012 Academic Year

Please enter your assessment data for the reflection on one's own learning for your class. The structure of the data entry form has your students down the left column and the three criteria and the overall assessment in four columns to the right.

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### University of Michigan-Flint Rubric for the Embedded Assessment of Reflecting on One's Own Learning Processes

To assess reflection on "One's Own" learning, the language for the rubric articulates what we expect to see in a student's reflection on their own learning process. There are three key criteria for the rubric to assess General Education Outcome #1: ability to articulate one's own learning process, attitude towards one's own learning process, and whether the learner can apply their reflections of one's own learning processes to other contexts. This Learning Outcome is considered particularly important for First Year Experience course, while the Mastery level of all 3 criteria would be applicable for Capstones.

<table>
<thead>
<tr>
<th>Learner can articulate his/her learning experiences</th>
<th>Learner's attitude toward intellectual challenge</th>
<th>Application of one's own learning processes</th>
<th>Overall, has this student exhibited adequate reflections on learning for the level of this course in this discipline?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 2</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 3</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 4</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 5</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 6</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 8</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
<tr>
<td>Student 9</td>
<td>Select One</td>
<td>Select One</td>
<td>Select One</td>
</tr>
</tbody>
</table>
Potential Payoffs

Payoffs for implementing course embedded assessment of General Education Learning Outcomes

• It increases the participation of faculty in the assessment of General Education.
• It makes the goals and assessments within General Education more transparent.
• It generates a more comprehensive database for analysis.
Potential Payoffs...

Increased faculty participation

- For Writing, 166 Faculty entered a combined 10,166 assessments between Fall 2011 and Summer 2012
- For Reflection, 74 Faculty entered a combined 2,697 assessments between Winter 2012 and Summer 2012
- For Research, 97 Faculty entered a combined 5,219 assessments between Fall 2012 and Summer 2013

But we can do better!
Potential Payoffs...

By making the learning outcomes (and their assessment) more transparent,

• We are developing a shared “language”.
• We can succinctly say that good writing should have structure, substantiation, and control over language.
• Reflection on one’s own learning involves the ability to articulate one's own learning process, their attitude towards their learning, and whether the learner can apply their reflections.
• Further, “competent researchers” skillfully and ethically: employ appropriate field-specific methodologies, analyze objects of study, and engage with relevant existing research.
Course embedded assessment opens the possibility of fine grain analyses of assessment data – Example 1

**Competent Writing: Structure by Level**

- 100 level, N=5534
- 200 level, N=1828
- 300 level, N=1925
- 400 level, N=433
Potential Payoffs...

We can even restructure the data to capture the change in writing for the same students over time.

**Paired T-Test for Writing: Fall '11-Summer '12**

- **Structure:**
  - Mean Difference=0.163
  - t-value=5.140***
  - N=1890

- **Substantiation:**
  - Mean Diff.=0.102
  - t-value=3.057**
  - N=1815

- **Language:**
  - Mean Difference=0.152
  - t-value=4.957***
  - N=1887

* Sig < 0.05
** Sig. < 0.01
*** Sig. < 0.001
Potential Payoffs...

Or Reflection on One’s Own Learning

Paired T-Test for Reflection: Winter '12-Summer '12

- **Articulate:** Mean Difference=0.456, t-value=4.287***, N=132

- **Challenge:** Mean Difference=0.381, t-value=3.649***, N=132

- **Application:** Mean Difference=0.251, t-value=2.299*, N=131

* Sig. < 0.05
** Sig. < 0.01
*** Sig. < 0.001
Potential Payoffs...

Or Research Methods

Paired T-Test for Research: Fall '12-Spring '13

- **Methodology**: Mean Difference=-0.094, t-value=-1.468, N=548
- **Analysis**: Mean Difference=0.162, t-value=2.555*, N=559
- **Engagement**: Mean Difference=0.233, t-value=3.326**, N=420

* Sig < 0.05
** Sig < 0.01
*** Sig < 0.001
In other words, the very process of assessing student learning can itself be viewed as a High Impact Practice by

- Developing a shared understanding of student learning within the General Education program, and

- Providing our students with clear expectations as to their learning
Concluding Remarks

- Through a concerted effort to reform our General Education *Curriculum* by embedding GE outcomes in our classes
- And by taking on the challenge of assessing individual student work products
- We were able to develop an assessment protocol that appears to be working.
- This success however is dependent on developing rubrics that faculty from a wide array of courses find easy to apply
- And that the institution is prepared to continually provide the requisite level of support.
Questions?

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For more information about Tk20’s Comprehensive Assessment Solutions, contact us at info@tk20.com.