Collecting Data & Evidence of Student Learning

Presented by the Assessment Office
April 2009

Today’s Agenda

1) Introductions
2) Program Assessment Overview
3) Match the Method Activity
4) Recommend a Method Activity
5) 7-Question Decision-making Process
6) Wrap Up

Session Outcomes

At the end of today’s session you can:

1. Name and describe common “direct” data collection methods.
2. Select an appropriate method for a particular outcome/question.
3. Know the questions to ask when deciding on a method.
PROGRAM ASSESSMENT OVERVIEW

“The systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development.”

~Palomba & Banta (1999)

Program Assessment

- Assessment is iterative, systematic reflection and action
- It is NOT evaluation of individual faculty members, students, or courses
- Faculty led

GOAL = PROGRAM IMPROVEMENT

Assessment Cycle

Learning Outcomes

Action Plan for Improvement

Goals & Mission Statement

Learning Opportunities (curriculum map)

Assessment Results

Assessment Process

TODAY
Student Learning Outcomes (SLOs)
SLOs: an opportunity to make our expectations known.

Examples of good program SLOs
• Students can compare and contrast major theories in educational psychology.
• Students can explain and apply the principles of travel industry management.

Learning Opportunities
Curriculum map: an opportunity to consciously align instruction with SLOs

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Program SLO 1</th>
<th>Program SLO 2</th>
<th>Program SLO 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRS 101</td>
<td>Introduced</td>
<td></td>
<td>Introduced</td>
</tr>
<tr>
<td>CRS 151</td>
<td>Introduced</td>
<td>Introduced</td>
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<tr>
<td>CRS 301</td>
<td>Reinforced/Practiced</td>
<td>Reinforced/Practiced</td>
<td>Reinforced/Practiced</td>
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<tr>
<td>CRS 430</td>
<td>Reinforced/Practiced</td>
<td>Reinforced/Practiced</td>
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<tr>
<td>CRS 480</td>
<td>Mastered &amp; Assessed</td>
<td>Mastered</td>
<td>Reinforced/Practiced</td>
</tr>
<tr>
<td>CRS 490</td>
<td>Assessed</td>
<td>Mastered &amp; Assessed</td>
<td></td>
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<tr>
<td>Exit interview</td>
<td>Assessed</td>
<td>Assessed</td>
<td>Assessed</td>
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</tbody>
</table>

The Tale of Fox Paw University
Moral of Fox Paw University

• First craft a good assessment question based on program outcomes
• Choose a method that
  – Answers the question
  – Is credible to faculty
  – Yields actionable results
• Live in the real world

COLLECTING DATA AND EVIDENCE OF STUDENT LEARNING

“There is no more critical juncture in implementing a successful assessment of the major than the moment of methods selection.”

“Johnson, McCormick, Prus, & Rogers (1993)"

Methods—the sky’s the limit!
Your Turn: Match the Method

1. Match the method with the correct description
2. Circle the methods your department is already using for program assessment

(Ignore the Strengths and Limitations columns)

“Direct” and “Indirect”

• “Direct” evidence of student learning
  – Student products, behaviors
  – Reveals what students know and can do
• “Indirect” evidence of student learning
  – Student perceptions, self reports
  – Can reveal why and how students learned – or didn’t learn

Direct evidence is required.

Direct Methods

<table>
<thead>
<tr>
<th>Data-collection Method</th>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded assignments</td>
<td>High motivation</td>
<td>Fear of “Big Brother”</td>
</tr>
<tr>
<td>Embedded test/quiz</td>
<td>High motivation</td>
<td>Fear of “Big Brother”</td>
</tr>
<tr>
<td>Pre-post test</td>
<td>Demonstrate growth</td>
<td>Pre-test effects</td>
</tr>
<tr>
<td>Observation</td>
<td>Captures non-written evidence</td>
<td>Trained observer(s) recommended</td>
</tr>
<tr>
<td>Standardized Exam</td>
<td>National comparisons</td>
<td>Low motivation</td>
</tr>
</tbody>
</table>

Did students learn X, Y, & Z?
Can they do X, Y, & Z?
How much do they “grow?”
## Direct Methods

<table>
<thead>
<tr>
<th>Data-collection Method</th>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio</td>
<td>Comprehensive; Reflective</td>
<td>Resources needed</td>
</tr>
<tr>
<td>Culminating project</td>
<td>Integrated perspective; comprehensive</td>
<td>Time constraints</td>
</tr>
<tr>
<td>(e.g., senior thesis, capstone project)</td>
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<td></td>
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</tbody>
</table>


## Indirect Methods

<table>
<thead>
<tr>
<th>Data-collection Method</th>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>Rich, in-depth info</td>
<td>Resource intense</td>
</tr>
<tr>
<td>Student survey</td>
<td>Easy to administer</td>
<td>Perception vs. reality</td>
</tr>
<tr>
<td>Alumni survey</td>
<td>Straightforward analysis</td>
<td>Low response rate</td>
</tr>
<tr>
<td>Transcript/course taking</td>
<td>Unobtrusive</td>
<td>Difficult to draw conclusions</td>
</tr>
</tbody>
</table>

*What are student/alumni opinions about X, Y, & Z? What curriculum/courses do our students experience?*

## Your Turn...

In groups of 3 or 4:
1. Read the assigned case
2. List appropriate data collection methods
3. List the pros/cons of each method
4. Recommend a method
5. Share

*Go Paws!*
Share: Recommend a Method

• Briefly state the department’s concern and question
• Recommend a method
  – What alternatives did you consider?
  – Why is this method most suitable for FPU?

7-Question Decision-making Process

1. What outcome is being assessed?
2. What is your assessment question?
3. What evidence is already available?
4. What method(s) will answer your question?

7-Question Decision-making Process

5. What method(s) will faculty members accept as credible?
6. What method(s) will lead to faculty action, if needed?
7. What method(s) is realistic in terms of resources and logistics?
Wrap-Up

• Assessment of workshop SLOs
  – Case study
• Resources
  – Us! You’re not alone
  – “Choose a Method” - Assessment Office website
  – Our lending library
• Survey from Center for Teaching Excellence
  – What should our next workshop cover? Tell us!
• Next workshop:
  Rubrics: An Assessment Tool to Save Grading Time
  Thursday, May 14, 3-5pm

Thank You!

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## Match the Method With the Correct Description
Collecting Data & Evidence of Student Learning Workshop

<table>
<thead>
<tr>
<th>Data Collection Method</th>
<th>Strengths</th>
<th>Limitations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded Assignments</td>
<td></td>
<td></td>
<td>A. A test that is administered, scored, and interpreted in a standard manner; often commercially developed and administered to many (e.g., students across the nation).</td>
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<tr>
<td>Embedded Test or Quiz</td>
<td></td>
<td></td>
<td>B. A collection of students’ work that is used to demonstrate student growth and/or showcases achievement; often includes students’ reflections on the collection.</td>
</tr>
<tr>
<td>Pre-test/Post-test Evaluation</td>
<td></td>
<td></td>
<td>C. A test administered at the beginning and again at the end of a program in order to determine change or growth.</td>
</tr>
<tr>
<td>Observations</td>
<td></td>
<td></td>
<td>D. In their senior year, students integrate the knowledge and skills they have acquired throughout the program to produce a piece of work that demonstrates achievement.</td>
</tr>
<tr>
<td>Standardized Test</td>
<td></td>
<td></td>
<td>E. Assignments completed as a regular part of a course are used for course grades and program assessment.</td>
</tr>
<tr>
<td>Portfolio</td>
<td></td>
<td></td>
<td>F. Student performance of a task or activity is rated by an unobtrusive observer, often using an “observation checklist.”</td>
</tr>
<tr>
<td>Culminating Project (e.g., capstone project, senior thesis or exhibit)</td>
<td></td>
<td></td>
<td>G. Questions intended to assess SLOs are incorporated into course tests or quizzes. Results are used for course grades and program assessment.</td>
</tr>
<tr>
<td>Interviews</td>
<td></td>
<td></td>
<td>H. Alumni report their perceptions of topics such as overall educational experience, program quality, and program relevance to career/personal life.</td>
</tr>
<tr>
<td>Student Survey (e.g., CAFÉ)</td>
<td></td>
<td></td>
<td>I. Data from student databases are used to discover what classes students took and in what order, and/or to identify patterns in student grades.</td>
</tr>
<tr>
<td>Alumni Survey</td>
<td></td>
<td></td>
<td>J. One-on-one dialog with a student to determine his/her perspective on topics such as academic experience, growth and change, and immediate as well as future plans.</td>
</tr>
<tr>
<td>Transcript Analysis or Course-Taking Patterns</td>
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<td></td>
<td>K. Students are asked for their opinions on topics such as course relevance, classroom environment, and beliefs about their knowledge and/or abilities.</td>
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Case Studies
Collecting Data & Evidence of Student Learning Workshop

Case #1: Ready for Graduate School?

One of the goals of Fox Paw University’s Psychology Department is to prepare their undergraduate majors for graduate school. Their related SLO states:

Students have the research skills necessary to apply and be accepted into advanced degree programs.

To achieve the SLO, the department has integrated independent student research into the curriculum and encouraged research faculty members to mentor students. The department would like to back up the claim that when students graduate, they are prepared to enter graduate school with sufficient research skills to be successful.

The assessment committee asks, “Do our graduates possess the research skills that graduate schools expect of incoming students?”

What data collection method(s) would you recommend? Why?

Case #2: Smarter Not Harder Assessment

Fox Paw University’s Botany Department wants to assess its Communication Skills SLO:

Students can identify and analyze scientific problems and environmental issues using oral and written communication skills.

The assessment committee asks, “How well can students use oral and written communication skills to identify and analyze scientific problems and environmental issues?” The faculty members believe this is an important learning outcome; however, they worry that assessment will be an added burden. In addition, they do not want students to see assessment as something “extra.”

What data collection method(s) would you recommend? Why?

Case #3: Unprepared for Math 321

The professors who teach Math 321 (Introduction to Advanced Mathematics) at Fox Paw University believe that students enter their course unprepared. The faculty members examined the Math curriculum map and confirmed that the course progression provides the necessary foundation for success in Math 321. They ask, “Are students entering unprepared? If yes, why?”

What data collection method(s) might the Math Department use to understand if students are unprepared for Math 321 and how might the department determine why that is occurring?
Case #4: Multi-Purpose Assessment

Fox Paw University’s Advertising Department wants to assess the following SLO:

Students can create effective advertisements across various media for targeted audiences.

The department wants to develop a sustainable assessment plan that engages both students and faculty. The assessment committee wants a data collection method that will a) be useful to students after they graduate and apply for a job or graduate school and b) answers the question, “Can students create effective ads across various media for particular target audiences?”

What data collection method(s) would you recommend?

Case #5: Meeting Accrediting Agency Standards

The Fox Paw University School of Engineering has an external accrediting agency (ABET). Criterion #3 of ABET’s Engineering Criteria includes the following:

“Engineering programs must demonstrate that their graduates have:
(a) an ability to design and conduct experiments, as well as to analyze and interpret data
(b) an ability to design a system, component, or process to meet desired needs
(c) an ability to function on a multi-disciplinary team”

The assessment committee turns the statements into questions:
- Can our students design and conduct experiments?
- Can they analyze and interpret data?
- Do their designs meet the desired needs?
- Can our students work effectively as members of a multi-disciplinary team?

Because ABET requires multiple data collection methods, the committee discusses a variety of methods.

What data collection methods would you recommend?