Assessing the minor programs

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Assessment

- **Assessment** is the systematic collection and analysis of information to improve student learning.
- **Effective** program assessment:
  - Systematic
  - Built upon the unit mission
  - Continuous and cumulative
  - Multi-faceted
  - Pragmatic
  - Faculty-designed and implemented
Outline

• Strategies* for assessment of minor programs:
  – (1) Assess no more than two SLOs (if practical);
  – (2) Quantitatively assess large student populations and qualitatively assess the minor subset;
  – (3) Create a “class content improvement feedback loop” using quantitative survey and qualitative capstone course assessments.

*DISCLAIMER: These are the strategies that have been adopted for the Plant Pathology Minor program -- one size doesn’t necessarily fit all. We’re still figuring it out, too.
## What can you assess?

<table>
<thead>
<tr>
<th><strong>Student Learning</strong></th>
<th><strong>Knowledge of the discipline.</strong></th>
<th><strong>Skills</strong></th>
<th><strong>Values</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Attitudes and Perceptions</strong></td>
<td>Advising</td>
<td>Curriculum Mentoring Teaching</td>
<td>Campus climate Co-curricular Student services</td>
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<td>Campus facilities</td>
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<td></td>
<td>Course schedules</td>
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<td>Grad school prep</td>
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<tr>
<td><strong>Unit/University Processes</strong></td>
<td>Advising</td>
<td>Counseling Ombudsmanship Financial aid Transcripts</td>
<td>Graduation checks Tutoring Health care</td>
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<td>Library services</td>
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<td>IT services</td>
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<td></td>
<td>Student orientations</td>
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</tbody>
</table>
Bloom’s Taxonomy

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Bloom, 1964
Assessment Practices

• **Direct methods**
  – Requires students to display their knowledge and skills as they respond to the assessment instrument.
  – Objective tests, essays, presentations, etc.

• **Indirect methods**
  – Requires students to reflect in their learning rather than demonstrate it.
  – Surveys, exit interviews, etc.

Palomba and Banta, 1999
(1) Limit SLOs for minor programs

• Two “degree program” SLOs:
  – **Quantitative** assessment (metric 1) = Direct method
  – **Qualitative** exit interview (metric 2) = Indirect method
  – Additional SLOs should be added if certification or other special requirements are associated with the minor or secondary degree program.

• **University SLOs:**
  – **Knowledge, Critical Thinking**, Communication, Diversity, Academic and Professional Integrity

  *Fit into the alignment matrix.*
**Alignment Matrix** – For each stated student learning outcome, where does the student have the opportunity to learn the outcome and where is student achievement of the outcome is assessed?

Place an “X” for courses or experiences in which students have the opportunity to learn the outcome. Place an “A” for courses or experiences in which student performance is used for program level assessment of the outcome.

<table>
<thead>
<tr>
<th>SLO/Required Courses/Experiences</th>
<th>PLPTH 500 Principles of Plant Pathology</th>
<th>PLPTH 585 Crop Diseases</th>
<th>PLPTH 590 Landscape/Turf Diseases</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree program SLOs</strong></td>
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<tr>
<td>SLO1: Students who earn the plant pathology minor will possess a basic understanding of plant diseases, their causes, effects, and controls.</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>Quantitative Survey</td>
</tr>
<tr>
<td>SLO2: Students who earn the plant pathology minor will integrate plant pathology principles into the understanding of their major discipline(s) through the study of agronomic diseases, horticultural diseases, turf diseases, entomology, applied microbiology, biotechnology and other relevant career fields.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Exit Interview</td>
</tr>
</tbody>
</table>

**University SLOs**

- Knowledge | X | X | X |
- Critical thinking | X | X | X |
- Communication
- Diversity
- Academic and professional integrity

Assessed in Student’s Minor Program

Critical Knowledge Areas

Integration
(2) Use **Quantitative and qualitative assessments**

- **Metrics:**
  - **Quantitative surveys**
    - Pre-class surveys ("pre-test")
    - Post-class surveys ("post-test")
  - **Exit interviews**
    - Questions about the student’s learning process(es) and experience (not the critical knowledge areas, themselves).
    - We’re still working on this part. Won’t discuss today.
Quantitative Assessment
of Critical Knowledge Areas

Required Core Courses (5 credit hours):

**Principles** Course
- PLPTH 500 Principles of Plant Pathology (3 credit hours)
- **Capstone** Course(s)*
  - PLPTH 585 Crop Diseases (2 credit hours) *or*
  - PLPTH 590 Landscape Diseases (2 credit hours)

*May be a “capstone experience” or other activity that precedes student matriculation.
Levels of **quantitative assessment**

1. Whole class
   a. **Principles** course
   b. **Capstone** course

2. Cohort
   a. Minor enrollees.

3. Individual

4. Temporal
   1. “Pre-Post, Pre-Post”
Pre- and post-test scores for principles and capstone course series.

![Graph showing pre- and post-test scores for principles and capstone course series. The x-axis represents different courses (Pre PLPTH 500, Post PLPTH 500, Pre PLPTH 585, Post PLPTH 585) and the y-axis represents mean score (%). The graph includes two lines, one for Class and another for Minors.](image)
(3) “Class content improvement feedback loop”

Program improvement is **multidirectional**.
### Pre-/Post-test Items

(a.k.a. Critical Knowledge Areas)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Definition of plant disease</td>
</tr>
<tr>
<td>2</td>
<td>Plant disease triangle</td>
</tr>
<tr>
<td>3</td>
<td>Plant disease symptoms</td>
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<td>4</td>
<td>Plant disease signs</td>
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<td>5</td>
<td>Biotic versus abiotic</td>
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<td>6</td>
<td>Relative size of plant pathogens</td>
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<td>7</td>
<td>Fungal infection of plants</td>
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<tr>
<td>8</td>
<td>Definition of a haustorium</td>
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<td>9</td>
<td>Bacterial infection of plants</td>
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<td>10</td>
<td>Viral infection of plants</td>
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<td>11</td>
<td>Nematode infection of plants</td>
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<td>12</td>
<td>Dissemination of bacterial and fungal pathogens</td>
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<td>13</td>
<td>Primary inoculum</td>
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<td>14</td>
<td>Overseasoning of bacterial and fungal pathogens</td>
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<tr>
<td>15</td>
<td>Obligate biotrophs</td>
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<td>16</td>
<td>Polycyclic diseases</td>
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<td>17</td>
<td>Horizontal resistance</td>
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<td>18</td>
<td>Gene-for-gene concept</td>
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<td>19</td>
<td>Plant virus genomes</td>
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<tr>
<td>20</td>
<td>Plant disease management strategies</td>
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<tr>
<td>21</td>
<td>Causal agents of Kansas diseases</td>
</tr>
</tbody>
</table>

What are the CKAs for your discipline?
Same #5

Better, #20

Worse, #16
### Summary: How do you link assessment outcomes, methods, and results?

<table>
<thead>
<tr>
<th>Program Objective</th>
<th>Outcome Criteria</th>
<th>Assessment Measure</th>
<th>Population</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Knowledge (eg. CKAs)</td>
<td>Students demonstrate mastery of basic knowledge</td>
<td>Quantitative assessments (pre-/post-class surveys)</td>
<td>Students enrolled in courses (principles and capstone(s))</td>
<td>Assessment reports; “class content improvement feedback loop”</td>
</tr>
<tr>
<td>Student Perceptions (Integration)</td>
<td>Student understand the goals and objectives of their program; career goals</td>
<td>Qualitative assessments (exit interviews)</td>
<td>Minor enrollees</td>
<td>Assessment reports; unit review; “class content improvement feedback loop”</td>
</tr>
</tbody>
</table>

*UM-Amherst, OAPA PROGRAM-Based Review and Assessment (2001)*
For more information

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Thanks!