Teaching Methods Related to Student Progress in Lower-level General Ed. Courses

FAIR Conference, Jan. 28, 2016
Session Overview

- Role of student ratings
- IDEA system
- Description of sample
- AAC&U’S LEAP learning outcomes
- Teaching styles used in gen. ed. classes
- Most effective teaching methods
Measuring Teaching Effectiveness:
Include Multiple forms of Assessment

- Instructional Delivery
  - Students

- Learning Outcomes
  - Students, Peers

- Instructional Design
  - Students, Peers

- Content Expertise
  - Peers

- Instructional Assessment
  - Students, Peers,

- Course Management
  - Administration

Balanced Plan For Summative Evaluation
Purpose of IDEA

Individual Development
Educational Assessment

> Teaching Improvement Faculty Evaluation
> Curriculum Review Program Assessment Accreditation
Teaching effectiveness is determined primarily by student progress on the types of learning the instructor targets.
### FIF: Learning Objectives

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>M</th>
<th>I</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaining factual knowledge (terminology, classifications, methods, trends)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning fundamental principles, generalizations, or theories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning to <em>apply</em> course material (to improve thinking, problem solving, and decisions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquiring skills in working with others as a member of a team</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing creative capacities (writing, inventing, designing, performing in art, music, drama, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing skill in expressing oneself orally or in writing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to find and use resources for answering questions or solving problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing a clearer understanding of, and commitment to, personal values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning to <em>analyze</em> and <em>critically evaluate</em> ideas, arguments, and points of view</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquiring an interest in learning more by asking questions and seeking answers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary Evaluation of Teaching Effectiveness

Overall Rating: 4.4

Progress on Relevant Objectives

**E**  Learning fundamental principles, generalizations, or theories
- Your Average: 4.8
- Percent of Students Rating:
  - 1 or 2: 0%
  - 3: 0%
  - 4 or 5: 100%

**I**  Learning to apply course material (to improve thinking, problem solving, and decisions)
- Your Average: 4.5
- Percent of Students Rating:
  - 1 or 2: 0%
  - 3: 20%
  - 4 or 5: 80%

**I**  Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course
- Your Average: 4.6
- Percent of Students Rating:
  - 1 or 2: 0%
  - 3: 20%
  - 4 or 5: 80%

**I**  Developing skill in expressing myself orally or in writing
- Your Average: 3.9
- Percent of Students Rating:
  - 1 or 2: 20%
  - 3: 20%
  - 4 or 5: 60%

**I**  Acquiring an Interest in learning more by asking my own questions and seeking answers
- Your Average: 4.1
- Percent of Students Rating:
  - 1 or 2: 20%
  - 3: 20%
  - 4 or 5: 60%
<table>
<thead>
<tr>
<th>Learning Objective Category</th>
<th>Item Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Cognitive Background</td>
<td>1, 2</td>
</tr>
<tr>
<td>Applications of Learning</td>
<td>3, 4</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>6, 8</td>
</tr>
<tr>
<td>Intellectual Development</td>
<td>7, 10, 11</td>
</tr>
<tr>
<td>Lifelong Learning</td>
<td>9, 12</td>
</tr>
<tr>
<td>Team Skills</td>
<td>5</td>
</tr>
<tr>
<td>Teaching Style Category</td>
<td>Item Number</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Stimulating Student Interest</td>
<td>4, 8, 13, 15</td>
</tr>
<tr>
<td>Fostering Student Collaboration</td>
<td>5, 16, 18</td>
</tr>
<tr>
<td>Establishing Rapport</td>
<td>1, 2, 7, 20</td>
</tr>
<tr>
<td>Encouraging Student Involvement</td>
<td>9, 11, 14, 19</td>
</tr>
<tr>
<td>Structuring Classroom Experiences</td>
<td>3, 6, 10, 12, 17</td>
</tr>
</tbody>
</table>
Description of Sample

- Academic Years: 2002-2011
- 123,801 Gen. ed. Classes
- Survey delivery:
  - Paper--111,133 (77% response rate)
  - Online--12,668 (62% response rate)
Regional Accreditations

- Middle States – 13.5%
- New England – 3.2%
- North Central – 45.4%
- Northwest – 4.3%
- Southern - 25.8%
- Western – 7.7%
Type of Institutions

- **Carnegie Classifications:**
  - Associate – 14.6%
  - Baccalaureate – 21.7%
  - Masters – 27.7%
  - Doctoral – 13.8%
  - Other – 22.2%

- **Institutional Control:**
  - Public – 36.3%
  - Private – 63.7%
Approaches to Instruction

- **Primary**
  - Lecture - 58.4%
  - Discussion - 14.8%
  - Skill/activity - 14.4%
  - Other - 9.8%
  - NR - 2.6%

- **Secondary**
  - Lecture - 17.7%
  - Discussion - 33.6%
  - Skill/activity - 15.9%
  - Other - 14%
  - NR - 18.8%
Which IDEA learning outcomes do faculty emphasize in lower-level gen. ed. courses?
**LEAP-related Outcomes Emphasized in General Education Courses**

<table>
<thead>
<tr>
<th>LEAP Learning Outcomes</th>
<th>Percent of Classes Emphasizing Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative thinking (6)</td>
<td>21.7</td>
</tr>
<tr>
<td>Critical thinking (11)</td>
<td>55.8</td>
</tr>
<tr>
<td>Information literacy (9)</td>
<td>38.9</td>
</tr>
<tr>
<td>Lifelong learning (12)</td>
<td>39.5</td>
</tr>
<tr>
<td>Oral/written communication (8)</td>
<td>52.5</td>
</tr>
<tr>
<td>Problem solving (3)</td>
<td>67.4</td>
</tr>
<tr>
<td>Teamwork (5)</td>
<td>24.7</td>
</tr>
</tbody>
</table>
On which IDEA learning outcomes do students in lower-level gen. ed. courses report the most progress?
Student Self-Reported Progress on LEAP-related Outcomes

<table>
<thead>
<tr>
<th>LEAP-related Outcome</th>
<th>Mean Progress (Raw)</th>
<th>Mean Progress (T-score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative thinking (6)</td>
<td>3.93</td>
<td>50.96</td>
</tr>
<tr>
<td>Critical thinking (11)</td>
<td>3.93</td>
<td>51.43</td>
</tr>
<tr>
<td>Information literacy (9)</td>
<td>3.85</td>
<td>52.00</td>
</tr>
<tr>
<td>Lifelong learning (12)</td>
<td>3.85</td>
<td>50.99</td>
</tr>
<tr>
<td>Communication (8)</td>
<td>3.91</td>
<td>51.81</td>
</tr>
<tr>
<td>Problem solving (3)</td>
<td>4.01</td>
<td>50.38</td>
</tr>
<tr>
<td>Teamwork (5)</td>
<td>3.88</td>
<td>49.27</td>
</tr>
</tbody>
</table>

Includes only classes where instructor emphasized outcome.
1=No progress; 2=Slight progress; 3=Moderate progress; 4=Substantial progress; 5=Exceptional progress

T-score has mean = 50, standard deviation = 10
Teaching Styles Observed Most Frequently in General Education

- Which individual teaching methods are observed most frequently in lower-level gen. ed. courses?
### Frequency of Teaching Styles

<table>
<thead>
<tr>
<th>IDEA Teaching Style</th>
<th>Mean Rating (Raw)</th>
<th>Mean Rating (T-score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stimulating Student Interest</td>
<td>4.06</td>
<td>47.97</td>
</tr>
<tr>
<td>Fostering Student Collaboration</td>
<td>3.78</td>
<td>48.66</td>
</tr>
<tr>
<td>Establishing Rapport</td>
<td>4.12</td>
<td>48.53</td>
</tr>
<tr>
<td>Encouraging Student Involvement</td>
<td>3.95</td>
<td>47.61</td>
</tr>
<tr>
<td>Structuring Classroom Experiences</td>
<td>4.27</td>
<td>49.34</td>
</tr>
</tbody>
</table>

1=Hardly Ever; 2=Occasionally; 3=Sometimes; 4=Frequently; 5=Almost Always

T-score has mean = 50, standard deviation = 10
Which Teaching Methods are Most Strongly Related to LEAP Outcomes?

- Used BMA to test multiple models
- Only included classes where instructor rated objective as relevant
- Compared models in first-year/sophomore gen. ed. versus first-year/sophomores in major
General education students uniquely report greater progress when instructors:

- Ask students to share ideas with students of different backgrounds
- Explain material clearly and concisely
- Involve students in real-life activities
General education students uniquely report greater progress when instructors:

- Introduce stimulating ideas
Lifelong Learning

- General education students uniquely report greater progress when instructors:
  - Introduce stimulating ideas
General education students uniquely report greater progress when instructors:

- Relate subject to real life
- Ask students to help each other
- Stimulate intellectual effort
IDEA 2

Update learning objectives and teaching methods in the Student Ratings of Instruction instruments to better reflect current trends in higher education.
Newly created items related to:

- Diverse perspectives and global awareness
- Ethical reasoning and decision making
- Civic engagement
- Quantitative literacy
Learning Outcomes Assessment

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving
- Civic knowledge and engagement
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning
Teaching Methods

- Newly created items related to:
  1. Diversity
  2. Self-reflection
  3. Service-learning
Questions?

Steve Benton, Ph.D.
Senior Research Officer
IDEA
steve@IDEAedu.org

Pat Sullivan, Ph.D.
Director of Product Development
IDEA
pat@IDEAedu.org