Assessing Teaching and Learning Practices in Classrooms that Foster Active, Collaborative Learning

Audriana Stark  
STEM Gateway, Graduate Assistant  
Organization, Information, & Learning Sciences

Gary Smith  
STEM Gateway, PI  
Director, Office of Medical Educator Development

Project for Inclusive Undergraduate STEM Success  
The University of New Mexico STEM Gateway program is funded through a U.S. Department of Education TITLE V grant, 2011-2016 (total anticipated funding $3.82 million).
Outline-
- Description of the Learning Studios
- Rationale for assessing activity in the Learning Studios
- Explanation of the survey instrument
- Breakout session to review some of the collected data and evaluate the survey
- Debrief

UNM Learning Studios

- Round tables seating 9.
  - Ideally 3 teams of 3 at each table
- 3 computers at each table. 1 computer per team of 3.
- Projection screen
- Flat screen display
- White boards
- Huddle boards
- Teacher station
- Round tables seating 9. Ideally 3 teams of 3 at each table
Purpose for Administering Survey

To determine the extent that the STEM Gateway supported courses taught in the Learning Studio achieve goals set by the Learning Environments Committee.

4 out of 5 goals set by Learning Environments Committee are measured:

- Maximize learner time-on-task
- Provide immediate learning-progress feedback
- Supporting peer collaborative learning
- Increase instructor access for students
- Improving the pass rate and grade achievement in courses

What the survey directly measures:

- Class Time Utilization
- Modes of Immediate Feedback
- Collaborative Teaching Techniques
- Use of Technology
- Student Engagement in the Learning Process
Survey Construction

1. Developed by graduate students Larissa Thill and Elmer Gonzalez in Educational Psychology 572 in consultation with Dr. Julie Sanchez and Dr. Gary Smith.

2. Selected questions from the Office of Information Technology, University of Minnesota Active Learning Classroom survey.

3. Revised with UNM learning studio instructor input.

Survey Implementation

<table>
<thead>
<tr>
<th></th>
<th>Total # Courses Survey was Administered in</th>
<th>Total n</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Semester</td>
<td>8</td>
<td>434</td>
<td>61%</td>
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<tr>
<td>End-of-Semester</td>
<td>6</td>
<td>464</td>
<td>62%</td>
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</table>

All Data Collected

<table>
<thead>
<tr>
<th></th>
<th>Total # Courses Data Pulled from</th>
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</thead>
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<tr>
<td>End-of-Semester</td>
<td>2</td>
<td>235</td>
<td>52%</td>
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</table>

Data Displayed Today
Answer the following questions with reference to the survey items above and the response data provided on the next page.

1. What is the key take-away point from the data regarding class time utilization?

2. Are there any problematic survey items? If so, list the item numbers and briefly state why they are problematic.

3. List suggestions for improving the survey items.
Class Time Utilization

**CHEM 121**

- Q1.1 Assignment completion
- Q1.2 Discussion with others
- Q1.3 Lectured more than one third of class time
- Q1.4 Lectured no more than one third of class time
- Q1.5 Time for professor accessible (questions/answers)
- Q1.6 Utilizing technology

**EPS 101**

- Q1.1 Assignment completion
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Number of students

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**Standard Deviation**

- Q1.1 Assignment completion
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**Question**

- Q1.1
- Q1.2
- Q1.3
- Q1.4
- Q1.5
- Q1.6
- Q3.1
- Q3.2
- Q3.3
- Q3.4
- Q3.5
- Q3.6
- Q5.1
- Q5.2
- Q5.3
- Q7.1
- Q7.2
- Q7.3
- Q7.4
- Q7.5
- Q7.6
- Q7.7
- Q7.8
- Q7.9
- Q9.1
- Q9.2
- Q9.3
- Q9.4
- Q9.5
- Q9.6
- Q9.7
- Q9.8
1. What is the key take away point from the data regarding modes of immediate feedback?

2. Are there any problematic survey items? If so list them and a brief sentence about why they are problematic.

3. List suggestions for improving the survey items.
Modes of Immediate Feedback

**CHEM 121**
- Q5.1: Electronic feedback (iClicker use)
- Q5.2: Verbal feedback from instructor/TA/PLF
- Q5.3: Verbal feedback from peers

**EPS 101**

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<tr>
<th>Question</th>
<th>CHEM 121</th>
<th>EPS 101</th>
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<td>Q9.8</td>
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</table>

*Standard Deviation*

- **Instructor 1-EPS101**
- **Instructor 2-Chem 121**
Answer the following questions using the questions above and the data provided on the next page:

1. **What is the key take away point from the data regarding collaborative teaching techniques?**

2. **Are there any problematic survey items? If so list them and a brief sentence about why they are problematic.**

3. **List suggestions for improving the survey items.**
Collaborative Teaching Techniques

Chem 121

Q3.1 In teams of 2-4 students
Q3.2 Table discussion
Q3.3 In-class interaction via software
Q3.4 Class discussion
Q3.5 White board activity
Q3.6 Student/teacher interaction

EPS 101

Number of students

Standard Deviation

Question
### Use of Technology

**Q7. How often was technology experienced in class?**

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>About once per month</th>
<th>Two or three times per month</th>
<th>About once per week</th>
<th>In every class</th>
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</thead>
<tbody>
<tr>
<td>Q7.1 Personal laptops/pads</td>
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<td>Q7.2 Classroom laptops</td>
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<tr>
<td>Q7.3 Blu-ray/DVD player</td>
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<td>Q7.4 Drawing on instructor’s monitor (Smart Podium)</td>
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<td>Q7.5 Sharing views of students’ work from classroom laptops (SmartSync)</td>
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<td>Q7.6 Wi-Fi access</td>
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<td>Q7.7 Document camera</td>
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<td>Q7.8 Projection screens/projector</td>
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<tr>
<td>Q7.9 White board</td>
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**Answer the following questions using the questions above and the data provided on the next page:**

1. **What is the key takeaway point from the data regarding the use of technology?**

2. **Are there any problematic survey items? If so list them and a brief sentence about why they are problematic.**

3. **List suggestions for improving the survey items.**
Student Engagement in the Learning Process

Questions selected from Office of Information Technology, University of Minnesota, Student Survey

Answer the following questions using the questions above and the data provided on the next page:

1. What is the key take away point from the data regarding students’ engagement in the learning process?

2. Are there any problematic survey items? If so list them and a brief sentence about why they are problematic.

3. List suggestions for improving the survey items.
Student Engagement in the Learning Process

Q9.1 Increases my excitement to learn
Q9.2 Helps develop professional skills that can be transferred to the real world
Q9.3 Enriches my learning experience
Q9.4 Encourages active participation
Q9.5 Makes me want to attend class regularly
Q9.6 Helps me develop connections with my classmates
Q9.7 Engages me in the learning process
Q9.8 Nurtures a variety of learning styles

Student Engagement in the Learning Process

Number of students

Standard Deviation

Question

Instructor 1-EPS101
Instructor 2-Chem 121