Learning-Centered Education

Bob Lingard

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Learning-Centered Education

Bob Lingard
Characteristics of Learning-Centered Education

(Kay M. McClennen)

- Student participation in a diverse array of engaging learning experiences that are aligned with expected outcomes and designed in accord with good educational practice
Characteristics of Learning-Centered Education

- Clearly-defined outcomes for student learning
- Systematic assessment and documentation of student learning
- Institutional and individual reflection and action typically prompted and supported by data about student learning and institutional performance
Characteristics of Learning-Centered Education

- Emphasis on student learning in processes for recruitment, hiring, orientation, deployment, evaluation, and development of personnel

- Focus on learning consistently reflected in key institutional documents and policies, collegial effort, and leadership behavior
Examples of Learning-Centered Practices
(Arizona University System)

- Collaborative group learning, both inside and outside the classroom
- Individual student research and discovery
- Research and discovery by students and faculty together
Examples of Learning-Centered Practices

- Problem-based inquiry learning
- Student-faculty studio and performance activities
- Asynchronous distance learning
- Synchronous interactive distance learning
- Service learning activities
Examples of Learning-Centered Practices

- Hands-on, experimental learning activities
- On-site field experiences
- Self-paced tutorials
An Example (Think-Pair-Share)

- Students are given a problem/question to answer (E.g., What are the risks facing your team’s project?)
- They share their answer with one other person
- Finally, they get together with their team and arrive at a consensus
Assessment of Active Learning with Upper Division Computer Science Students

Brenda Timmerman
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California State University, Northridge

33rd ASEE/IEEE Frontiers in Education Conference
November 8, 2003
Active Learning Techniques

- Activities other than passive listening
  - Short writing exercises
    - minute papers, entrance and exit summaries
  - Frequent class discussions
  - Cooperative Learning
    - Sharing information in groups or pairs
    - Group projects – simple and complex
Alumni Survey

■ Who were surveyed?
  • All Computer Science Graduates from the last five years, 416 students

■ What was asked?
  • Questions about the respondents, gender, country of origin, etc
  • Extent of their experience with active learning
  • Usefulness of classes on the job
  • Value of active learning techniques on the job
Course Usefulness

- Software Engineering
- Computer Security Courses
- Societal Issues

- Active Learning
- Non Active Learning

Usefulness
Ratings of Learning Styles

Preferred Learning Technique

<table>
<thead>
<tr>
<th>Preferred Learning Technique</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>3</td>
</tr>
<tr>
<td>Active Learning</td>
<td>4</td>
</tr>
<tr>
<td>Combination</td>
<td>5</td>
</tr>
</tbody>
</table>
Value of Active Learning Techniques

Technique/Result

- In-Class Writing
- Class Discussions
- Group Discussions
- Group Projects
- Presentations
- Improved Comm.

Value Rating
US Born vs. Non US Born Ratings

- Lectures + Active Learning
- Group Projects

Value Rating

- US Born
- Non US Born

November 8, 2003
Male vs. Female Ratings

<table>
<thead>
<tr>
<th>Technique/Result</th>
<th>Male</th>
<th>Female</th>
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<tr>
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<td>4</td>
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<tr>
<td>Improved Communications</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

- **Male**: Blue bars
- **Female**: Red bars
Non US Male vs. Non US Female Ratings

Value Rating

Small Group Discussions

Improved Communications

Technique/Result

Non US Male

Non US Female
Importance of Group Projects

<table>
<thead>
<tr>
<th></th>
<th>Male vs. Female</th>
<th>Native vs. Transfer</th>
<th>US Born vs. Non US Born</th>
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</thead>
<tbody>
<tr>
<td>Importance Score</td>
<td>5</td>
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Summary and Conclusions

■ Encouraging results
  • Student seem to feel that Active Learning is beneficial

■ Improved communication skills
  • Observed by instructors and claimed by students

■ Women and students not born in the US rated active learning most valuable