The impact of a blended course format on student learning and attitudes in a Quantitative Literacy Course.

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Outline

- Background
  - Set up of the traditional and blended formats for a Problem Solving course

- Data
  - Self reported time spent on tasks
  - Attitudes towards the course
  - Desire to learn in blended format
  - Traditional vs. Blended formats progress on learning outcomes

- Future
  - Next steps
Traditional Format

- 100% face-to-face class meetings
- Collaborative work
- Common syllabus, textbook, assignments and projects
Blended Format

- 50% face-to-face class meetings, 50% online activities
  - One lab meeting per week (optional)
- Common assignments for all blended sections
- Same book, projects as traditional
Type of Student

- Math G.E. requirement - non science majors.
- Pre-requisites:
  - Elementary Algebra
  - Junior or Senior standing by completed units
    - (at least 57 out of ~120)
Self-Reported Time on Task

Mean Score by Question

- TotalHR: 3.36
- HWHR: 2.19
- OPracHR: 1.49
- OQuizHR: 1.98
- ReadHR: 1.17

- Modality:
  - Blended
  - Traditional
Self-Reported Time on Task

- Percent responding that they typically work in one long session as opposed to multiple short sessions:
  - Traditional format: 67%
  - Blended format: 77%
  - Not a significant difference

- Attitudes about what helped:
  - Significant differences between blended vs. traditional in the helpfulness of reading, homework and in-class
Significant increase in their desire to take courses in this format.
Attitudes Toward the Course

For statements 1, 2, 3 and 6, the differences are significant.
None of these differences were significant due to sample size (n=20 blended, n=27 traditional)
Learning Outcomes (Spring and Fall 2014)

n=60 blended  n=37 traditional
Future: What is Next?

- More data!!!
  - Compare actual time on task versus self-reported data
  - We need more longitudinal learning outcomes data
- Modifications to Blended Format
  - Help students “feel” like they can solve problems
Thank You

- Questions?
Attitudes Towards what was Helpful.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Traditional</th>
<th>Blended</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I found the reading helpful in learning course material.</td>
<td>42%</td>
<td>45%</td>
<td>58%</td>
</tr>
<tr>
<td>I found the online quizzes helpful in learning course material.</td>
<td>0%</td>
<td>28%</td>
<td>72%</td>
</tr>
<tr>
<td>I found the online practice problems helpful in learning course material.</td>
<td>0%</td>
<td>14%</td>
<td>86%</td>
</tr>
<tr>
<td>I found the written homework problems or labs helpful in learning course material.</td>
<td>8%</td>
<td>39%</td>
<td>92%</td>
</tr>
<tr>
<td>I found the in-class activities and lectures helpful in learning course material.</td>
<td>4%</td>
<td>25%</td>
<td>96%</td>
</tr>
</tbody>
</table>

Significant differences between blended vs. traditional in the helpfulness of reading, homework and in-class.