Student Motivation and Valuing of Active Learning Strategies in Large Lecture Agricultural Undergraduate Courses

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Introduction

• Teachers face daily challenges in motivation students in large lecture courses
  – Attendance
  – Lack of student engagement
  – Lack of motivation/valuing
  – Personal technology distractions

• Active learning activities are recommended to increase student engagement
Review of Literature

• Active learning has been found to increase student performance, promote comprehension, and combat lagging engagement (McCarthy & Anderson, 2000; Michel, Carter III, & Varela, 2009)

• However…
  – Active learning may decrease the perceived amount of information learned in large lecture courses (Lake, 2011)
  – Michel et al., (2009) found active learning strategies had no effect in broad student cognitive outcomes

• However…
  – Learner outcomes increase if students voluntarily participate in active learning opportunities (Carvalho & West, 2011)
Conceptual Framework

• Self-Determination Theory (Deci & Ryan, 2002)
  – Extrinsic and intrinsic motivational orientation

• Match Perspective (Sagiv & Schwartz, 2000)
  – If the individual’s motivational orientation aligns with the orientation of the environment the individual is more likely to value and engage in the activities within the environment
Purpose and Objectives

Purpose

• Explain how differences in student motivations could explain variation in the perceived value of active learning.

Research Objectives

– 1) Describe student motivation to participate within large lecture agriculture courses
– 2) Describe the perceived value of active learning within large lecture agriculture courses
– 3) Examine how differences in student motivation could explain variation in the perceived value of active learning.
Methodology

• Quantitative design

• Convenience sample
  – Two large agricultural leadership courses and one agricultural communications course (response rate of 46.5% ($n = 181$))

• Questionnaire
  – Student motivation constructs (Pintrich, Smith, Garcia, & McKeachie, 1991):
    • Intrinsic and Extrinsic Goal Orientation, Task Value, Expectations for Success
  – Perceived active learning valuing construct (Ryan, 1982)
  – Post-hoc reliability estimates--all constructs had a Cronbach’s Alpha above .60
Methodology

• Hierarchical Multivariate Regression
  – Potential covariates
    • GPA, Attendance, Percent off task technology behavior
  – 1st Block
    • Covariates entered simultaneously
  – 2nd Block
    • All motivational constructs entered simultaneously
Findings and Implications—Objective 1

Descriptive statistics for student motivation (n = 181)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Goal Orientation</td>
<td>5.45</td>
<td>0.80</td>
<td>3.33 – 7.00</td>
</tr>
<tr>
<td>Extrinsic Goal Orientation</td>
<td>5.87</td>
<td>0.85</td>
<td>2.75–7.00</td>
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<tr>
<td>Task Value</td>
<td>5.70</td>
<td>1.01</td>
<td>2.17 – 7.00</td>
</tr>
<tr>
<td>Expectations for success</td>
<td>5.99</td>
<td>0.72</td>
<td>2.63 – 7.00</td>
</tr>
</tbody>
</table>

Findings

- Students slightly agreed they held an intrinsic goal orientation
- Students agreed they held an extrinsic goal orientation, moderately valued the tasks within the course and had moderate expectations for success within the course
Findings and Implications—Objective 2

Descriptive statistics for active learning valuing (n = 181)

<table>
<thead>
<tr>
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<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Learning Valuing</td>
<td>5.45</td>
<td>1.09</td>
<td>2.00 – 7.00</td>
</tr>
</tbody>
</table>

Findings
- Students slightly agreed they valued the active learning activities within the course
Findings—Objective 3

- Covariate model was not significant $F = 0.57$ (3,160, $p > .05$)
- Full model was significant, $F = 13.45$ (7,156, $p < .05$) and explained 35% (adjusted $R^2 = .35$) of the variance
- Extrinsic goal orientation ($d = 0.36$) and task value ($d = 1.12$) explained significant ($p < .05$) proportions of variation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE B$</td>
<td>$d$</td>
<td>$B$</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.76*</td>
<td>1.07</td>
<td>0.70</td>
<td>0.59</td>
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<tr>
<td>Attendance</td>
<td>1.034</td>
<td>0.90</td>
<td>0.18</td>
<td>0.43</td>
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<tr>
<td>Engagement</td>
<td>-0.11</td>
<td>0.31</td>
<td>0.06</td>
<td>0.26</td>
</tr>
<tr>
<td>GPA</td>
<td>-0.08</td>
<td>0.18</td>
<td>0.07</td>
<td>0.08</td>
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<tr>
<td>Goal Orientation</td>
<td></td>
<td></td>
<td></td>
<td>0.07</td>
</tr>
<tr>
<td>Extrinsic Value</td>
<td></td>
<td></td>
<td></td>
<td>0.22*</td>
</tr>
<tr>
<td>Task Value</td>
<td></td>
<td></td>
<td></td>
<td>0.55*</td>
</tr>
<tr>
<td>Expectations for success</td>
<td></td>
<td></td>
<td></td>
<td>-0.03</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>-0.08</td>
<td></td>
<td></td>
<td>0.34*</td>
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<tr>
<td>$R^2$ change</td>
<td>0.01</td>
<td></td>
<td></td>
<td>0.37*</td>
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<tr>
<td>$F$</td>
<td>0.57(3,160)</td>
<td></td>
<td>13.45*(7,156)</td>
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</tbody>
</table>

Note. * = $p < 0.05$
Implications and Conclusions

• GPA, attendance, and time off task have limited power to predict valuing of active learning strategies

• Extrinsic goal orientation and task value predicted student valuing of active learning
  – Supports Match Perspective (Sagiv & Schwartz, 2000)
  – Extrinsically motivated students valued active learning
  – But…
  – Intrinsic motivation has numerous benefits over extrinsic motivation
Recommendations

• Instructors should consider the importance of external factors within their courses

• Underscore the extrinsic nature of the courses
  – Highlight the usefulness of the content beyond the classroom
  – Align course outcomes for intrinsically goal oriented students

• Further research needs to examine the utilization and valuing of active learning strategies in more courses within colleges of agriculture

• Further research also needs to examine the benefits students can experience from intrinsically aligned courses
Questions?