CASE STUDY LEARNING: A TOOL FOR TEACHING CRITICAL THINKING

Lauren N. Duffy, Ph.D. & Garrett A. Stone, M.S.

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INTRODUCTION

Presenters

Dr. Lauren Duffy

Mr. Garrett Stone

Presentation Outline

➢ Course Background
➢ Case Study Learning
➢ Harvard Business Cases and Method
➢ Research Methods
➢ Discussion of Results
➢ Q & A
BACKGROUND: DEVELOPMENT OF THE COURSE

Syllabus & Assessment

CT Module

5 Case Studies
CASE STUDY LEARNING

A description of an actual administrative situation involving a decision that needs to be made, and is written in such a way that the reader takes the role of the manager, or key decision maker, whose responsibility it is to make that decision to help solve the problem.

Fit for teaching CT?

- Multidimensional situations (Boyce, 1995; Scott, 2007; Vaugeois, 2005)
- Real-world scenarios in safe environments (Boyce, 1995)
- Unstructured problem-based learning (Scott, 2007)
- Synthesis of information (Boyce, 1995)
- Must think analytically and demonstrate reasoned evidence (Leonard & Cook, 2010)
- Application of theory/concepts (Davis & Wilcock, 2003)
UTILIZING HARVARD BUSINESS CASES

Case Pack

- Case
- Teaching Notes
- Supplementary Materials
HARVARD CASE METHOD

The HBR Process

Our Process

Introduce Case
Case Write-up
Debrief Case

Describe
Analyze
Generate Alternatives
Evaluate Alternatives
Make Recommendations
METHODS

Quasi-experimental, pre/post design
- Fall 2014, Spring 2015, Spring 2016 (2 sections)
- N = 85

California Critical Thinking Skills Test (CCTST)
- Online completion during first and last week of classes
- Incentivized with class credit
- Specific instructions provided

Analysis
- Paired t-tests across overall score, 5 domains, time spent on test, and percentage of answered questions
- Holm’s Sequential Bonferroni Procedure, G*Power 3
- Corrected vs. uncorrected models

5 Domains
- Analytic skills
- Inference skills
- Evaluation skills
- Deduction skills
- Induction skills
# RESULTS

Table 2. Results of paired sample t test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-score</th>
<th>Post-score</th>
<th>Mean diff.</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>p'</th>
<th>Effect (Cohen’s d)</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent answered</td>
<td>0.9961</td>
<td>0.9972</td>
<td>0.0011</td>
<td>0.0249</td>
<td>0.395</td>
<td>84</td>
<td>0.694</td>
<td>0.978</td>
<td>0.062</td>
<td>0.069</td>
</tr>
<tr>
<td>Time</td>
<td>26.34</td>
<td>30.52</td>
<td>4.176</td>
<td>11.821</td>
<td>3.257</td>
<td>84</td>
<td>0.002*</td>
<td>0.018**</td>
<td>0.499</td>
<td>0.896</td>
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<tr>
<td>Percentile</td>
<td>35.62</td>
<td>40.91</td>
<td>5.282</td>
<td>20.751</td>
<td>2.347</td>
<td>84</td>
<td>0.021*</td>
<td>0.168</td>
<td>0.359</td>
<td>0.641</td>
</tr>
<tr>
<td>Overall</td>
<td>14.12</td>
<td>15.02</td>
<td>0.906</td>
<td>3.627</td>
<td>2.302</td>
<td>84</td>
<td>0.024*</td>
<td>0.168</td>
<td>0.353</td>
<td>0.624</td>
</tr>
<tr>
<td>Analysis</td>
<td>3.08</td>
<td>3.29</td>
<td>0.212</td>
<td>1.589</td>
<td>1.228</td>
<td>84</td>
<td>0.223</td>
<td>0.892</td>
<td>0.188</td>
<td>0.229</td>
</tr>
<tr>
<td>Inference</td>
<td>7.54</td>
<td>8.09</td>
<td>0.553</td>
<td>2.281</td>
<td>2.235</td>
<td>84</td>
<td>0.028*</td>
<td>0.892</td>
<td>0.342</td>
<td>0.599</td>
</tr>
<tr>
<td>Evaluation</td>
<td>3.49</td>
<td>3.64</td>
<td>0.141</td>
<td>1.872</td>
<td>0.695</td>
<td>84</td>
<td>0.489</td>
<td>0.978</td>
<td>0.106</td>
<td>0.106</td>
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<tr>
<td>Deduction</td>
<td>6.26</td>
<td>6.87</td>
<td>0.612</td>
<td>2.411</td>
<td>2.340</td>
<td>84</td>
<td>0.022*</td>
<td>0.168</td>
<td>0.359</td>
<td>0.638</td>
</tr>
<tr>
<td>Induction</td>
<td>7.86</td>
<td>8.15</td>
<td>0.294</td>
<td>2.478</td>
<td>1.094</td>
<td>84</td>
<td>0.277</td>
<td>0.978</td>
<td>0.168</td>
<td>0.191</td>
</tr>
</tbody>
</table>

*Significant at the \( p < 0.05 \) level, uncorrected. **Significant at the \( p < 0.05 \) level, corrected. The value 0.80 is typically used as an indicator of “good” power. Effect sizes are typically described as small \( (d = 0.2) \), medium \( (d = 0.5) \), and large \( (d = 0.8; \text{Cohen, 1988; Lakens, 2013}) \).
1. This case study learning process went beyond only analyzing and evaluating, which are common active learning objectives, to also focus on inference, deduction, and induction.

2. Change in time spent taking test could mean different things.
DISCUSSION

Case study learning concerns and considerations:

- Labor intensive and take significant class time (Velenchik, 1995)
- Additional readings/content sometimes needed to help frame issues
- Oversimplify real-world issues (Leonard & Cook, 2010)
- Internationality in developing, implementing, monitoring, and assessing
- Alignment with course objectives and students prepared to engage (Davis & Wilcock, 2003; Vaugeois, 2005)
- Class discussion moderation is important (Vaugeois, 2005)

Limitations

- Homogeneous sample, lack of control group
- Weak to moderate statistical power
- Standardized, multi-choice testing
QUESTIONS

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