Interdisciplinary Soft Skills: A Model for Integrating Public Speaking into Science-based Courses to Reduce Public Speaking Anxiety

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• College graduates lack soft skills such as public speaking necessary to succeed in the workplace (Brooks et al., 2008; Crawford et al., 2011)

• Traditional public speaking courses build oral communication skills in a formal (classroom) environment

• Can science-based courses taught in a non-formal environment reduce public speaking anxiety like a public speaking course can?
### Public Speaking Course (n = 44)
- Three *indoor* speaking opportunities (including a demonstration)
- Course content:
  - Reducing anxiety
  - Speaking to inform and persuade
  - Using body language

### Science-based Course (n = 17)
- Three *outdoor* speaking opportunities (including a demonstration)
- Course content:
  - Wildlife ID
  - Influencing conservation efforts
  - Teaching 101
• Student public speaking anxiety (PSA) measured using the *Personal Report of Public Speaking Anxiety* (PRPSA) instrument (McCroskey, 1970)

  • Cronbach’s alpha > 0.90 in pilot tests

  • Paired samples $t$-test to check for differences between pre-course and post-course anxiety scores

  • Independent samples $t$-test to check for differences between groups
Results

PRPSA Score
Formal Speech Course

- t-value = 8.622, \[ p = .000, \] Cohen’s \( d = .72 \)
PRPSA Score
Non-Formal Science Course

$t$-value $= 2.572$, $p = 0.020$, Cohen's $d = 0.54$
P - Present expectations to students

S - Students sign-up for presentation topic and date

E – Establish grading rubric and share with students

A – Student attends meeting with instructor in advance to help them understand material, lab equipment, etc. (establish rapport)

C - Student conveys information using identified expectations

H - Student “hears” feedback on their presentation through rubric-based evaluations
Thank you!
## PRPSA Scores by Course Type

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre</th>
<th>Post</th>
<th>t-value</th>
<th>df</th>
<th>p</th>
<th>Cohen's d</th>
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</thead>
<tbody>
<tr>
<td>Formal Speech Course (n = 44)</td>
<td>107.5</td>
<td>91.6</td>
<td>8.622</td>
<td>43</td>
<td>.000</td>
<td>.72</td>
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<tr>
<td></td>
<td>(21.6)</td>
<td>(22.5)</td>
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<td></td>
<td>57-160</td>
<td>44-137</td>
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<tr>
<td>Non-formal Science-based</td>
<td>107.5</td>
<td>91.6</td>
<td>2.572</td>
<td>16</td>
<td>.020</td>
<td>.54</td>
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<td>Course (n = 17)</td>
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<td>(26.2)</td>
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<td>49-170</td>
<td>54-139</td>
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<table>
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<tr>
<th>t-value</th>
<th>Between Groups p</th>
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<tr>
<td>.000</td>
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<tr>
<td>.007</td>
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