The Mediator of Student-Faculty Interaction and Learning Outcome

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Introduction

- Extensive research on college student learning generally suggests interacting with faculty contributes to positive gains in cognitive development and retention (Kim & Sax, 2011; Kuh & Hu, 2001; Snow, 1973).
- Inconsistent findings have challenged our notion of how student-faculty interaction influences student learning (Bean & Kuh, 1984; Kuh, etc., 1997; Pascarella, etc., 2010).
- College learning theories proposed student-faculty interaction indirectly influences learning outcome by affecting students’ behaviors (Pascarella, 1985; Tinto, 1975).
- Kuh and Hu (2001) proposed student-faculty interaction may influence academic achievement and satisfaction indirectly through educational effort.
- Yet, it is undetermined the extent to which students’ individual effort to learn mediates the positive impact of student-faculty interaction on learning outcomes.

Research Question

Do seniors’ learning effort to engage in Higher-Order Learning, Reflective and Integrative Learning, Learning Strategies, and Quantitative Reasoning mediate the effect of Student-Faculty Interaction (SFI) on Learning Outcomes (as measured by self-reported college grades and gains in knowledge, skills, and personal development)?

Data

Data Source: 2013 National Survey of Student Engagement
Sample: 14,653 senior respondents (10% random sample)

Demographics:
- <1% American Indian or Alaska Native
- 3% Asian
- 8% Black or African American
- 9% Hispanic or Latino
- <1% Native Hawaiian or Other Pacific Islander
- 69% White
- 3% Foreign or Nonresident Alien
- 2% reported two or more races/ethnicities
- 5% Unknown

Methodology

- Structural Equation Model with Mplus 7.2
- Multiple individual learning efforts were tested in a single model
- Observed variables did not have cross-loadings (not shown in the framework)
- Maximum likelihood was used for model estimation
- Mediation parameters were tested using bootstrap command

Results

<table>
<thead>
<tr>
<th>Effects from SFI to</th>
<th>LO</th>
<th>Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.29</td>
<td>0.27</td>
</tr>
<tr>
<td>Direct effect</td>
<td>0.11</td>
<td>0.20</td>
</tr>
<tr>
<td>Total indirect</td>
<td>0.18</td>
<td>0.07</td>
</tr>
<tr>
<td>Specific indirect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFI via HO to</td>
<td>0.07</td>
<td>-0.03</td>
</tr>
<tr>
<td>SFI via RI to</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td>SFI via LS to</td>
<td>0.03</td>
<td>0.11</td>
</tr>
<tr>
<td>SFI via QR to</td>
<td>0.02</td>
<td>-0.07</td>
</tr>
</tbody>
</table>

- Direct and indirect effects of SFI on self-reported grades and gains in learning were positive and statistically significant.
- For self-reported grades and gains in learning, the direct effect was larger than the indirect effect.
- SFI had higher direct and indirect effects on self-reported gains in learning than on grades.
- LS mediated a positive effect between SFI and self-reported grades while HO and QR had a negative indirect effect which implies they may serve as a suppressors to the total effect of SFI on grades.

Future Study

- Studies may be designed to test other aspects of individual learning efforts in mediating student-faculty interaction and students' learning outcomes.
- Other learning outcome measures, especially those from direct assessment may be considered for testing the impact.
- Suppression effects of individual efforts need special attention and further discussion.

References