Comparing forms of student feedback perceived by faculty in undergraduate physics courses

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Faculty perception is selective

There are many instances of student feedback occurring in an undergraduate physics course, both inside and outside the classroom.

- Faculty perceive some student feedback, and the most salient was reported by faculty in interviews.
- Faculty respond to some feedback, which can affect student learning.

Improving student learning

- Faculty need supplemental resources in addition to student evaluations to assess and improve student learning (see Fig. 1).
- Although several resources and teaching methods have been shown effective in Physics Education Research (PER), most physics faculty have not implemented them.¹
- Better communication is needed between physics faculty and the PER community to facilitate implementation of these methods.
- Knowing which student feedback is important to faculty will help inform the PER community on how to best communicate research-based teaching methods to faculty in the context of their class.

Process:

Faculty (n=11) interviews from a previously collected data set were analyzed and coded for faculty perception of student feedback. The following table shows the coding descriptions, which were used for verbal and observational feedback:

<table>
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<tr>
<th>Category of Feedback</th>
<th>Description</th>
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<tbody>
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<td>Attitude</td>
<td>Attitude towards teaching method (interactive or traditional)</td>
</tr>
<tr>
<td>Class Activity</td>
<td>Feedback during ILDs, clickers, Pl</td>
</tr>
<tr>
<td>Format</td>
<td>Feedback regarding materials, equipment, discussion execution</td>
</tr>
<tr>
<td>Homework</td>
<td>Using outside class resources: homework, readings, studying</td>
</tr>
<tr>
<td>Motivation</td>
<td>Reasons for taking class, doing well, participating</td>
</tr>
<tr>
<td>Participation</td>
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</tr>
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- Faculty need supplemental resources in addition to student evaluations to assess and improve student learning.
- Faculty respond to some feedback, which can affect student learning.

- During interviews, faculty reported observational forms of student feedback significantly more than verbal feedback (p<0.001) or formal feedback (p=0.01).
- Over 1/3 of reported verbal feedback pertained to student attitudes towards faculty teaching methods.
- Nearly 40% of faculty’s formal feedback referenced student evaluations, though Fig. 1 indicates there is no correlation between student ratings of instruction and conceptual learning.

- The most common form of student feedback reported by faculty was from their own observations. Despite reporting verbal comments from students significantly less often, faculty were more likely to make changes in response to students’ verbal comments.

Conclusions:

- Overall, the most common form of student feedback reported by faculty was feedback from student evaluations.
- Faculty perceive observational feedback most, however, they are most likely to respond to verbal feedback.
- Since faculty referenced student evaluations most commonly and it appears that they do not correlate with learning gains, additional investigations are warranted.

References:


Acknowledgements:

We would like to thank Jennifer Momsen and Charles Henderson for access to data, and Melissa Dancy and Melissa Dancy and Melissa Dancy for editing, at the CiDER and CiDER REU participants. This project was funded by the National Science Foundation (NSF OER 1149191). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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