Mentoring Partnerships in Undergraduate Physics and Astronomy Education

ANDRIA C. SCHWORTZ | ANDREA C. BURROWS

Qualitative data from the astronomy datasets study also collected includes free response questions on the pre/post-test, responses to questions on the activity worksheet, transcripts of audio/video recordings while participants were working, and transcripts of audio recordings of on-one-one interviews with participants. This data is expected to shed light on participant thought processes as well as the social interactions as they worked.


Schwortz, A. C., & Burrows, A. C. (In prep). What Can I Do with All of These Numbers?: Exploring STEM Dataset Use. In prep.

Acknowledgements

Research performed in partial fulfillment of Schwortz’s PhD requirements.

Funding includes US Department of Education MSP #WY140202, NSF AST Grant #1211112, NSF #1359853, and HST-EOI-13237.001-A.

Additional support from Quinsigamond Community College, Worcester MA. Poster printed by QCC Interactive Media.

AR: STUDIO PHYSICS

ASTRONOMY DATASETS

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<th>Theme</th>
<th>Successes</th>
<th>Barriers</th>
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<td>1. Providing a model for STEM inquiry</td>
<td>I think it is just a personal problem that I would need to focus more on learning things outside of the class.</td>
<td>For most of the people I had to talk about personal problems and I don’t know very well. Teachers/professors shouldn’t be too involved in personal life.</td>
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<td>2. Engaging students in STEM analysis and synthesis</td>
<td>Not interjecting the teacher while he is teaching to help you learn the current opinion on how to do a problem. Many responses were about clarifying or expanding the existing power structure (e.g. “I think my professor is good because he tells me what to do at the beginning.”)</td>
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<td>3. Hearing student voices</td>
<td>Four of the six free response questions had more blank and non-substantive responses (e.g., “I’m not sure,” “nothing”) than substantive responses. A total of 0.0% of free-response questions were either left blank or had non-substantive responses.</td>
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CONCLUSION

• Undergraduates are lacking in mentors in physics and astronomy.
• Mentoring can provide intervention for struggling students.
• Students from underrepresented groups (e.g., females) especially need mentors to model success for them.

New England Section APS Meeting Spring 2017

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Over the year, Schwortz and Burrows successfully engaged and mentored 61.0% of free response questions on the pre/post-test, responses to questions on the activity worksheet, transcripts of audio/video recordings while participants were working, and transcripts of audio recordings of one-on-one interviews with participants. This data is expected to shed light on participant thought processes as well as the social interactions as they worked.


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