Co-Designing for Graduate Student Mental Health: An Example of Participatory Research in PER

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Our study of graduate student mental health was made broader, more robust, and more relevant by **including research subjects** (grad students) **in the study design process.**

Context

We aimed to quantitatively study the state of **mental health in physics and astronomy graduate students** and determine how aspects of the grad experience related to mental health.

What is a Co-Design Session?

Members of a group being studied are asked by researchers to participate in group activities facilitated by the researchers in order to explore a topic of study together. Co-design sessions are used in other areas, e.g. in user experience (UX) design to brainstorm new app features or to get feedback on the implementation of a new feature from potential users.

Session Goals

(1) Determine **aspects of the grad student experience** most relevant to mental health
(2) Explore meaning of **impostor phenomenon** for grad students

Participants

We chose 8 participants by convenience sampling. All were graduate students at UMD.

Participant backgrounds:
- 4 men, 4 women
- 4 domestic, 4 international
- 2 Hispanic; 4 White, 1 Black or African-American, 3 Asian
- 2 first-years, 2 sixth-years, and 4 in years 3-5
- 5 had been TAs
- 5 experimentalists, 3 theorists
- 2 students who worked primarily off the main campus

Two graduate students facilitated the session.

Psychological Safety

Given the topic of mental health, psychological safety was paramount to a successful session. We designed for this by:
- Having grad student facilitators (no faculty in the room)
- Using a variety of icebreaker formats (whole-group and pair discussions)
- Using fun and positive icebreakers and activities
- Setting norms explicitly
- Explicitly positioning participants as experts in their own stories

In a post-session feedback form, respondents (*N*=5 of 8) rated their agreement with these statements:
- The researchers valued my psychological safety during the session: **4.8/5**
- I felt comfortable sharing during discussion in pairs and in groups: **4.6/5**

Warming Up and Setting Context (35 min)

Introductions with fun, positive icebreakers (whole group)
Norms and expectations (facilitators)
Prompt about grad school (paired discussion + whole-group share-out)
Background and context (facilitators)

Autobiography of a Grad Student (25 min)

"Imagine you're writing an autobiography in which you tell the story of your time in grad school so far. **What would you write about? How would you tell the story?"**
Participants thought about this prompt on their own, then paired up to tell their stories with a note-taking active-listening partner, then edited the notes about their story.

(5-minute break)

Mental Health of a Moon Tourist (30 min)

Part 1 (15 min): In small groups, participants engaged with a definition of mental health by considering a fictional scenario involving a moon tourist that encountered a problem and how the tourist's mental health might affect how they handle the situation. Groups shared out.
Part 2 (15 min): Using the definition of mental health, participants put pieces of their grad school story (from prior activity) onto virtual sticky notes along with how that piece of the story affected their mental health.

Impostor Phenomenon in Your Story (20 min)

Participants took the CIPS-10, an instrument designed to measure impostor phenomenon, and were prompted to reflect on their answers. Then they discussed their answers in small groups with facilitators taking notes and prompting discussion.

Wrap up and thanks (5 min)

Data Collected

We designed activities to have many artifacts to analyze later.

Data included:
- Notes on icebreaker prompts*
- Notes on grad school autobiographies, taken by listening partner and edited by storyteller
- Notes from small group moon tourism discussions*
- Virtual sticky notes about grad school experiences and mental health
- Notes from small group impostor phenomenon activity*

* taken by facilitators

Session Evaluation

Following the session we asked participants to fill out a feedback form. Besides the psychological safety results (see left side), we asked respondents (*N*=5 of 8) to rate their agreement with these statements:
- Overall, the session was well-planned: **4.6/5**
- The session's activities and discussions were well-motivated: **4.4/5**
- Overall, the session was fun: **4.8/5**
- I would say I benefited from the session in some way: **4.6/5**

Our Public Documents (including this poster!)

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What We Learned

Via thematic analysis of artifacts from the session, we converged on new topics for our study.

In this group, grad student mental health was strongly affected by:
(1) Social support/isolation*
(2) Sense of meaningful progress in the program*
(3) Advisor-student relationship
* indicates a topic we had not considered before.

Takeaways

(1) Our study scope broadened—see What We Learned (left)

(2) We built a reflective community space for grad students, which can be adapted outside of research contexts

Participants liked having a space to reflect about their grad school experience; our session structure helped them feel comfortable having meaningful discussions. Activities like this session, hosted by student groups, could be adapted for the explicit purpose of community-building among grad students.