Certain for me, learning a new piece of software as complicated as what we’re using to do chemistry modeling, it’s not trivial. I don’t know if I’ll do it—because they’re young and they grew up with computers, but they learn this stuff really fast.

I walk in and he wants to show me the graph. He’s all excited. “Look. Look what I got.” That’s a big thing.

Going through the exercise of putting it into more simplistic language, helping them to step back and see … how it fits into a broader, bigger picture, why it’s important, but then also simplifying it so it makes sense to the rest of the world and not just the science geeks in your lab.

I have a project, I have to do it way before it’s due, so if it’s a whole month, I have to do it way before, mostly because I’ve never wanted to disappoint myself, mostly myself. I don’t want to disappoint them because they’ve given me so much advice.

It helped me learn things more so than I can explain in a simple way and so, yeah, helped me grow more. Also, I think it helped me more, too, since I enjoyed teaching them, I think I’m being doing that. It’s not immediately after my PhD but then sometimes.

If I’ve explained so much and I learned so much from them, it really has helped my confidence in the science field, especially when I’m struggling and I’m like, Oh, man. Look at where all these other people have gotten to. They’re at this point, and they were able to do all this, so I should be able to do it too.”

Then I see Dr. Sun and we just stick up a conversation— and I guess that approachability. I just keep realizing that it’s not a façade.

Because I’ve never really worked with anybody who was doing research. I really wasn’t open to that. Seeing her doing all her stuff and being— she’s always talking about it. She seems like she’s so in love with research. She got me into it,

I’m very much into space research. So I always talk to them about it, about something about physics or bring out all the cool stuff which I think is very cool and they find it cool, as well.

Since they’ve explained so much and I learned so much from them, it really has helped my confidence in the science field, especially when I’m struggling and I’m like, Oh, man. Look at where all these other people have gotten to. They’re at this point, and they were able to do all this, so I should be able to do it too.”

My goal is to make this kind of an apprenticeship where, to coin a phrase, my advisor said there’s really no difference in you and me, and I got to the point that I think I can believe that for those who want it, and so you mentor now I will be believe that in 5, 10, 15 years.

Introduction

• Equal representation is essential to meeting the increasing demand for science, technology, engineering, and math (STEM) professionals, but statistics show that Latinas/os are underrepresented in STEM fields (U.S. Dept. of Ed., 2014).
• Mentoring interactions are thought to be integral to the retention and success of STEM students, particularly those from underrepresented groups (Kendrick, Nedumuri, & Arment, 2013; Wilson et al., 2012).
• Relational Cultural Theory (Fletcher & Ragins, 2007) may be an ideal mentoring approach for underrepresented group members.

Method and Analysis

Participants and Methods

The program evaluated a full-time paid summer program for Latina/o high school and college students. Students work in research labs and take science support coursework. The program also serves as a long-term mentoring program.

Results

Relational Abilities

• Authenticity
The ability to access and express one’s own thoughts and feelings

• Fluid Expertise
The ability to move easily from expert to non-expert mode and acknowledge help and give credit to others with no loss of self-esteem

• Empathic Competence
The ability to understand other’s experiences and perspectives

• Emotional Competence
The ability to understand, interpret, and use emotional data.

Conclusions

• Both mentor and mentee participants reported the use of relational abilities in their discussions of influential relationships in this science support context, despite the emphasis on being traditionally hierarchical.
• The five positive outcomes of relational cultural mentoring as described by Fletcher and Ragins (2007) are reported by both mentors and mentees, as well.
• The manifestations of the relational abilities and outcomes were specific to science-support mentoring. For example, emotional competence was most related to excitement about scientific results and possible science career paths.
• This may have implications for training programs for both mentors and mentees in science support contexts.

Limitations

We were unable to recruit any of the former program students, who may have offered insight on less successful program areas or relationships.

Future Directions

Future analysis could explore:
• The relationship between the use of relational abilities and perception of relationship quality
• If relational cultural mentoring leads to STEM retention
• Mentoring network analysis using both quantitative and qualitative data

Literature Cited & Acknowledgements


Handwritten notes on the second page of the document:

- Ethnicity: 95% Latinx
- Grouping of relevant text into repeating ideas
- Valuing of relational abilities
- Relational Cultural Theory (Fletcher & Ragins, Eds., 2007) may be an ideal mentoring approach for underrepresented group members.
- Research Questions:
  1. What do relational mentoring relationships look like in a science mentoring program for Latina/o high school and college students?
  2. What are the outcomes of relational mentoring relationships in a science mentoring program for Latina/o high school and college students?

- Method and Analysis:
  - Participants and Methods:
    - Program evaluated a full-time paid summer program for Latina/o high school and undergraduate students. Students work in research labs and take science support coursework. The program also serves as a long-term mentoring program.
  - Results:
    - Relational Abilities:
      - Authenticity: The ability to access and express one’s own thoughts and feelings
      - Fluid Expertise: The ability to move easily from expert to non-expert mode and acknowledge help and give credit to others with no loss of self-esteem
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