

Understanding the Range of Mentorship Within the Undergraduate Research Opportunity Program

Background:

- According to the Council of Undergraduate Research, mentorship serves as a critical aspect of academic success across the board, providing students with guidance, resources, and professional skills that can shape their educational experience and future careers (Schuman, 2021).
- The Undergraduate Research Opportunity Program (UROP) is an experience at Florida State University (FSU) in which early career undergraduates participate in research alongside mentors who provides technical, professional, and emotional support.
- Through UROP, mentorship provides structured guidance through complex research processes, granting access to valuable hands-on experience and opportunities for professional development.
- Literature asserts that the quality of mentoring relationships can impact students' future goals, sometimes resulting in a motivation to attend graduate school or, on the contrary, an uncertainty within their aspirations (Atkins et al., 2020; Shanahan et al., 2015).
- Understanding mentoring relationships is particularly important as systematic initiatives in UROP can potentially affect the quality of mentorship within the program, impacting students' long-term academic and career goals.



Figure 1: Word cloud showing the most used words within the mentoring philosophies.

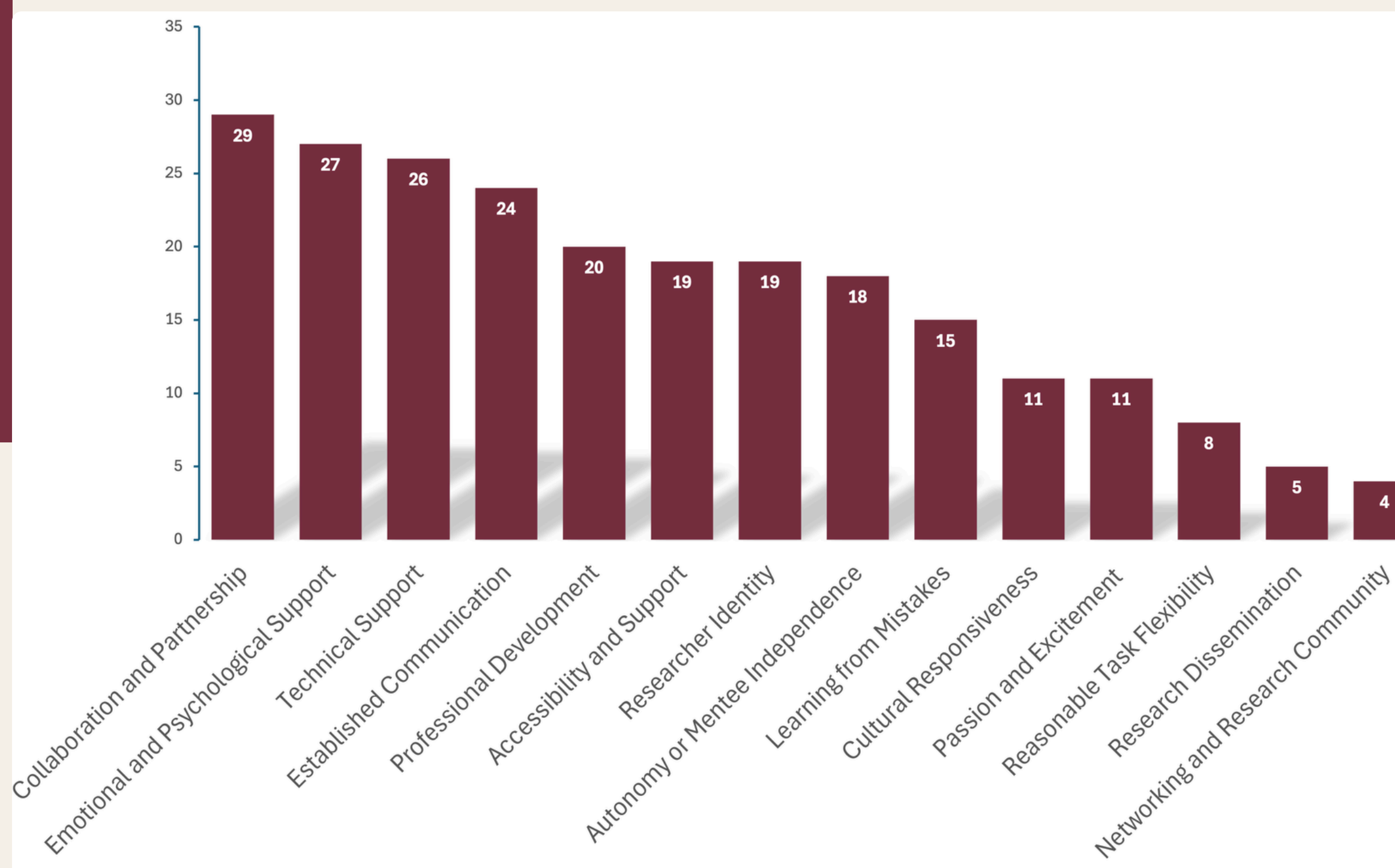


Figure 2: Frequencies of mentorship practices across UROP mentoring philosophies

“I was already planning to attend graduate school and hoping to be involved in some sort of research in the future, but I feel that my UROP experience has further solidified these hopes and plans, even though I probably won't stay in the same field.”

References:



Codes:



Results:

- Through coding 56 mentoring philosophies, we found that the most prevalent mentoring practice is collaboration and partnership (29), indicating an emphasis on a shared working environment with equal contribution by the mentor and mentee (Figure 2)
- The data also shows emotional and psychological support (27), technical support (26), and established communication (24) as highly frequent within the philosophies
- Furthermore, the practices that were the least common included networking, research dissemination, and reasonable task feasibility.
- Based on the 11 students who rated their mentors as “Excellent” or “Good” perceived gains in research skills.

“My research mentor was very adaptable and dedicated to building our topic as a team. It felt like she was just as invested in our research as we were, which was very encouraging as we went through the process of putting it all together.”

“She gave us room to be independent and still offer guidance as needed, this strengthened my communication, research skills and overall independence.”

Methods:

- In this study we developed codes based on existing literature to evaluate 56 mentoring philosophies – which are short descriptions of mentors' perspectives on mentoring and ideal mentor and mentee dynamic.
- We also reviewed five paired student and mentor evaluations focused on program satisfaction and perceived gains in research skills based on the *Entering Research Learning Assessment* (Butz & Branchaw, 2020).
- Using NVivo, codes were assigned to practices described in the philosophies including communication, professional development, and passion towards aiding students. We created 16 overarching codes and assigned subcodes when applicable.
- The codes were then analyzed to evaluate the frequency of practices within mentoring philosophies to understand the prevalence or absence of mentoring strategies.
- Furthermore, we compared philosophies to student and mentor evaluations to gain an understanding of the effectiveness of practices described in mentoring philosophies as well as understand how practices impact student's growth and success within UROP.

Conclusions:

- The mentoring philosophies in UROP align with the mentoring practices found in the existing literature
- Furthermore, it can be concluded that the program should further encourage mentors to increase their efforts in promoting student's careers by increasing the amount of opportunities students have to network and disseminate their research.
- Through close examination of student-mentor evaluations, it was observed that mentors who practice technical skill building as well as encourage and uplift their mentees often create a more comfortable and productive environment.
- It was further concluded that comfortable and uplifting environments result in high ratings for both the student and mentor and significant perceived gains in research skills.

Further Directions:

- There remain large amounts of student-mentor evaluations to be analyzed.
- Future efforts point to a more in-depth understanding of practices that correlate to student gains.