

Self-Efficacy Toolbox - What Can You Do? (SSR)¹³

Research Mentors Matter! You can make a difference in building your mentees' self-efficacy

Self-efficacy: belief in one's ability to achieve a specific goal or task. Self-efficacy is situation-specific self-confidence. Simply put, "*I believe I can do this.*"

When a trainee's research self-efficacy falters, you can support them in four ways:

Mastery Experience

Ask yourself: *What are your mentees doing?* Are they doing well, but still lack self-efficacy for research? Are they taking on projects that might be too complex for them at this stage in their training?

What you can do:

- Reinforce your mentees' past successes (have them recall and highlight a personal "significant research moment", or other specific successes in other domains, to understand what contributed to their success in the past and recreate that in the present).
- Encourage mentees to reference past successes during the research experience or, if they are new to research, past successes in academics (e.g., "you did it before you can do it now"). Help mentees adopt success strategies (match strategies to situation—e.g., reinforce effective behaviors that contributed to their past success).

Vicarious Learning

Ask yourself: *What are mentees observing?* Do they have any role models in the lab or in their network of peers? Can they "see" themselves reflected in the students, faculty, staff, and policies in your STEM programs? Are students from historically underrepresented groups able to see themselves in STEM at your institution? Why or why not?

What you can do:

- Talk about your own research experience: How do you know when you are doing a good job as a researcher? What are the things that increase your confidence in your field?
- Consider who your mentees' role models are and what research skills (and attitudes) are being modeled for them by you and others.

¹³ Robert, S., Asquith, P. (2017). *Mentor Training for Social Science Researchers*. New York, NY: W.H. Freeman & Company.

- Be aware of what skills and behavior mentees are observing about coping with research challenges and setbacks; share strategies for what you do when you hit a wall and how you encourage yourself to get over challenges/setbacks in research.
- Offer time to practice skills that are strong as well as ones that need more development
- Encourage your department to run a session where advanced mentees or faculty talk about setbacks, challenges, and how they overcame them.

Social Persuasion

Ask yourself: *What are they hearing?* Are they hearing that they have what it takes? Are they receiving specific feedback relating to their effort or capabilities? Is that feedback constructive? Is the message that you are sending the same as what is being received by the student?

What you can do:

- Foster a “you can do it” attitude.
- Be attuned to ways that you can acknowledge mentees’ current successes.
- Reinforce mentee’s research abilities by giving specific, credible feedback about technique and less evaluation of the outcome or general feedback.
- Let them know that they belong in research/the program.
- Be aware of signs that mentees may feel that they do not fit in research/training program (“I don’t belong here”).
- Talk about both the positive things mentees are doing while giving clear steps for how they can improve in areas that are challenging to them.

Emotional/Physiological State

Ask yourself: *What are they feeling?* How can you help students feel at home in your lab/classroom/university? What can you do regarding the environment (e.g., office hours, program policies, etc.) that can help reduce students’ stress and anxiety relating to STEM?

What you can do:

- Be aware of positive (enjoyment) or negative moods (anxiety) mentees may have related to research/training program.
- Attend to negative, anxiety-related feelings (e.g. negative self-talk that they are not as smart as other mentees).
- Acknowledge and normalize when things are difficult; “It’s supposed to be hard, new things usually are.”
- Give examples of mentees who struggled but made it (successful in research) Source: http://psychology.about.com/od/theoriesofpersonality/a/self_efficacy.htm?p=1

Customize the staircase, supporting their self-efficacy

- **Mastery experience:** Having the opportunity to successfully complete the analysis with assistance.
- **Vicarious experience:** Watching other participants successfully learn and do the analysis will make you feel more confident.
- **Physiological state:** Successfully learning the analysis will make you feel less anxious about doing it on your own.

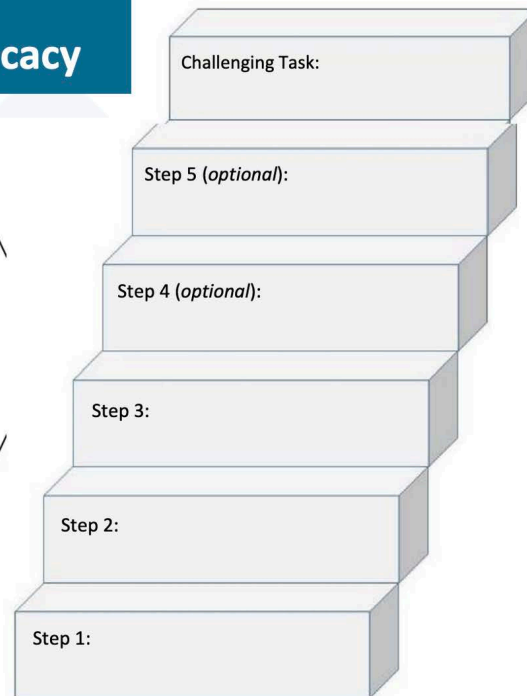


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- Write down a challenging task or goal that you want your mentee to achieve during their research experience at the top of the stairs.
- Then write down the goals that need to be achieved or the skills that need to be learned in order to achieve that goal on the steps below.
- Include the steps in sequential order, beginning with the skill you believe needs to come first on the bottom step.