What's Your STEMspiration?

Measures

Measures reported in:


Description:

The following pages contain the measures from the instrument used in the study, "What’s Your STEMspiration". Please note, if you are using part of this instrument in your work, that will be different from a reliability and/or validity standpoint than using it as a full instrument. If you do use the instrument or measures in your work towards equity in STEM education, please share de-identified data with us if you are willing (and able) so that we can continue to understand the impact and opportunity that exists in our shared world.

Special Acknowledgements: The team greatly appreciates the following individuals who contributed to the update of the reliability scores for this published version of this instrument and making it available for public use: Stephen Gibson, Queen Morgan, and Maurice Walker.

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+ Items were choice logic - Reliabilities were not computed for these variables
Initial Input

Sources of Self-Efficacy

*Cronbach’s alpha (α) = 0.77*

1. I feel like I belong at my current college or university.
2. I feel/feel like I belong in my undergraduate STEM major.
3. I felt like I belonged at my undergraduate college or university.*
   a. Not Belonging in the current program?
   b. Not Belonging in Major?
   c. Not Belonging at Undergraduate University?
4. How confident are you in starting a successful STEM career?
5. How confident are/were you in your ability to fulfill coursework requirements in your STEM undergraduate major?
6. How confident are you that you will remain in your current central specified in the previous question?
7. When I realized I needed academic help, I seek/sought assistance from available sources such as peers, tutors, classmates, faculty, TAs, or mentors.

Personal Inputs**

1. Which category best describes your race?
2. Please indicate which professional degree you are working towards.
3. In what type of graduate program are you enrolled?
4. What is the highest degree that you have earned?
5. What year was your [highest degree] awarded?
6. What is your current home undergraduate institution?
7. What is your cumulative undergraduate grade point average (GPA) as of the last semester you completed?
8. What is your gender?
9. Are you the first in your immediate family to go to college?
10. Please indicate if you are in your first or second semester of your first year of college.

STEM Intervention Programs (SIPs)+

1. Which of the LSAMP activities did you attend or participate in at any time during your undergraduate career?
   a. Attended VA-NC Alliance/LSAMP Annual Undergraduate Symposium?
   b. Participated in other LSAMP activities?
2. Please select all activities at your institution that apply, but do not include the LSAMP-sponsored services or activities you just reported in the previous question.
   a. Attended a national STEM conference?

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b. Attended career/professional development seminars?
c. Attended graduate school preparation events?

Mentors

1. Please consider which of the following people you have/had as mentors, either currently or in the past.
2. Mentors - learned how to learn from failure, manage stress, overcome challenges, overcome insecurities, and share background (Boss, faculty, peer)
3. Mentors - how to manage stress (Peer)
4. Mentors - skills overcome challenges, shared background, mg stress, believed in me, overcome insecurities (Peer)
5. Mentors - learned and skill confidence
6. Mentors - type and skill confidence faculty at my univ
7. type of mentor - fac at my institution, fac other institution, family, grad student
8. Learned - fac my institution teaches overcome challenges, learn from failure
9. Learned - fac other institutions teach overcome challenges, learn from failure; same background; believe in me; overcome insecurity
10. Learned - family mg stress, overcome insecurities; grad student mg stress
11. Learned - family mg stress, overcome insecurities; grad student mg stress
12. Learned - peer: Overcame the challenge, shared background, managed stress, believed in myself, and overcame insecurities
13. Type - fac my institut
14. Learned - Peer overcome insecurities, see others like me, important see me as stem pro
15. type of mentor
16. Learned - fac my institution same background

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Student Development

Student Outcome Expectations
Cronbach’s alpha (α) = 0.47

1. I have a passion for the work I can do with my STEM degree.
2. How confident are you in starting a successful STEM career?
3. My career plans for the future are to:
4. My academic plans for the future are to:

Research Self-Efficacy Scale
Cronbach’s alpha (α) = 0.95
1. At what point during your undergraduate career would you consider participating in a research experience?
2. Using scientific literature and/or reports to guide research.
3. Generating a research question to answer.
4. Figuring out what data/observations to collect and how to collect them.
5. Figuring out analyzing what data/observations mean.
6. Using technical skills and/or techniques relevant to research.
7. Using technical tools and/or instruments relevant and needed for research.
8. Using data collection and/or analysis software relevant to research (e.g., Dedoose, Excel, Java, Labview, Matlab, Nvivo, Python, R, Solidworks, SPSS, Stata, etc.).
9. Utilizing research ethics to guide decisions about my research.
10. Communicating research results to different audiences (oral, written, social media).
11. Working on research teams.

Academic Self-efficacy Scale
Cronbach’s alpha (α) = 0.84
1. Analyzing data (quantitative or qualitative).
2. Communicating professionally (e.g., emails, memos, presentations, reports, etc.).
3. Conducting research.
4. Demonstrating ethical behavior.
5. Developing a research project, proposal, or work plan.
7. Using software relevant to my field (e.g., Excel, Java, Labview, Matlab, Python, Solidworks, SPSS, etc.).
8. Using technical language and terminology relevant to my field.
9. Using technical skills and/or techniques relevant to my field.
10. Using technical tools and/or instruments relevant to my field.
11. Working in a team.

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STEM Career Self-Efficacy Scale

Cronbach’s alpha (α) = 0.97
1. At what point during your undergraduate career would you consider participating in an internship?
2. Communicating professionally (e.g., emails, memos, presentations, technical reports, etc.).
3. Demonstrating ethical behavior.
4. Developing a work plan.
5. Implementing relevant organizational procedures.
7. Using software relevant to my intended profession (e.g., Excel, Java, Labview, Matlab, Python, SPSS, Solidworks, etc.).
8. Using technical language and terminology relevant to my intended profession.
9. Using technical skills and/or techniques relevant to my intended profession.
10. Using technical tools and/or instruments relevant to my intended profession.
11. Working in a professional (office, field, healthcare, etc.) setting.
12. Working in a team.
13. Working on a project.

STEM Identity Scale

Cronbach’s alpha (α) = 0.92
1. I feel like I identify as a scientist, technologist, engineer, or mathematician.
2. I feel like I am part of a STEM community.
3. Seeing other people who look like me within my field reinforces my STEM identity.
4. It is important to me that others see me as a future STEM professional.
5. I enjoy my STEM classes.
6. I have a passion for my STEM coursework/curriculum content.
7. My hobbies and interests are often STEM-related.
8. My personal abilities/talents are a good fit with the requirements in STEM.
9. I am good at my chosen major.

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