



N A P E

# Educators' Equity in STEM (EESTEM) II

The Educators' Equity STEM Academy (EE-STEM II; DUE 1601548) successfully developed an effective model to deliver high-quality professional growth nationally with fidelity for over 200 community college science, technology, engineering, and mathematics (STEM) technician education faculty and their secondary colleagues teaching college and secondary gateway courses. The professional learning enhanced teaching skills and practices, and educator self-efficacy in creating an equitable learning environment. Significant positive student outcomes for women and girls, students of color, and students with disabilities were observed, and the project met or exceeded all of its goals.

The National Alliance for Partnerships in Equity (NAPE) is the nation's leading professional alliance of state and workforce development agencies; secondary and postsecondary institutions; and business, industry, community, and national partners focused on increasing student access, educational equity, and ultimately workforce diversity in high-skill, high-wage, in-demand careers. NAPE activates equity advocates to transform education and workforce systems and outcomes.

## EESTEM II Micromessaging Components

### Summer Institute: 4 days

Held at Host sites: Stark State College, OH and Dona Ana Community College, NM

### Professional Learning Communities: 8 meetings

Held virtually throughout the year with a local lead Action research to identify areas for improvement in the STEM classroom

### Tools and Resources

### Virtual Capstone Showcase

Sharing of results of classroom intervention

### Participating Teams:

92 instructors from 15 community and technical colleges in 11 states with 342 additional faculty and administrators educated through extension activities.

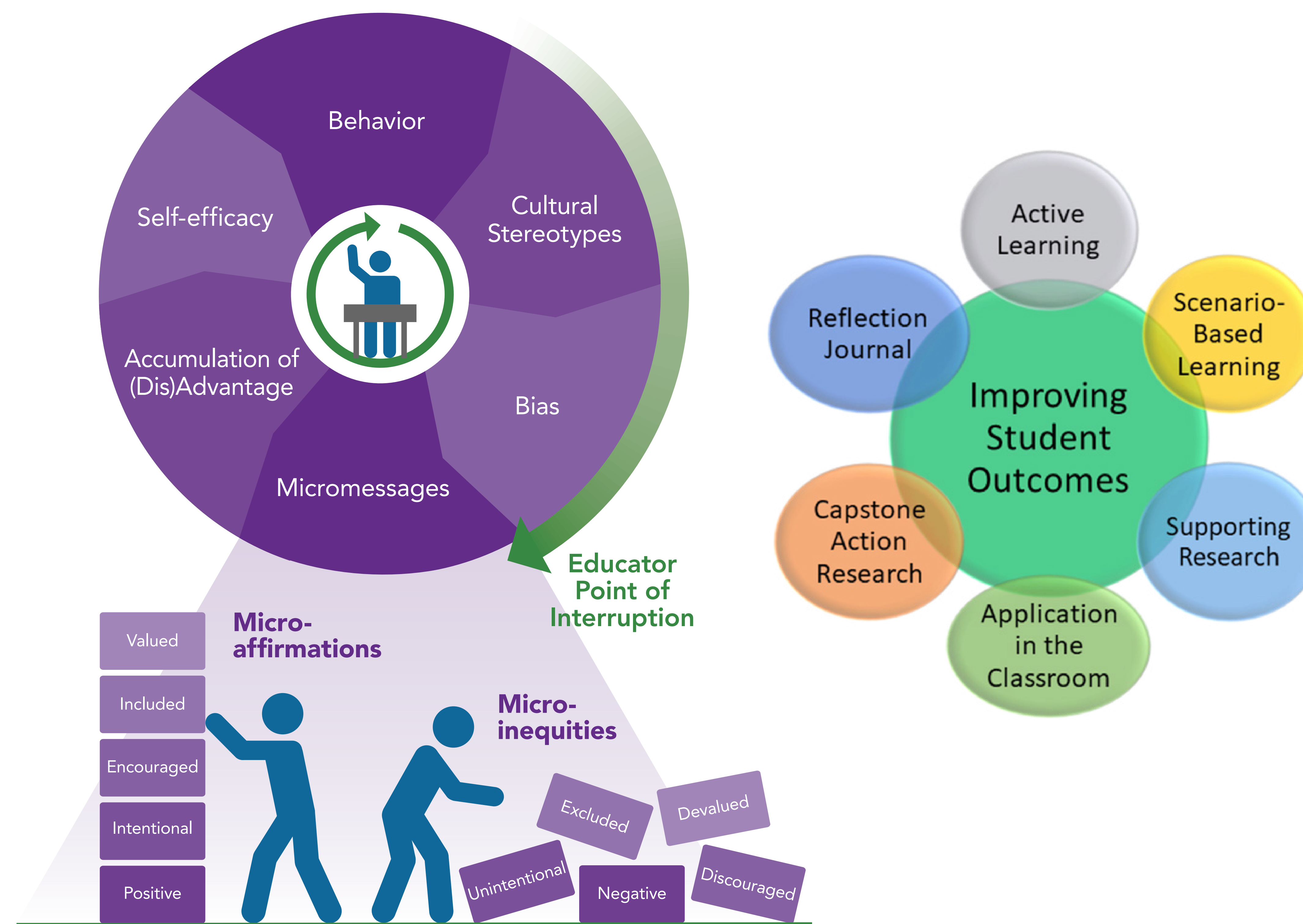
#### Micromessaging Cohort 1 FY18

- Austin Community College, TX
- Bainbridge State College, GA
- Baltimore City Community College, MD
- Delgado Community College, LA
- Northwest State Community College, OH
- River Parishes Community College, LA

#### Micromessaging Cohort 2 FY19

- Dona Ana Community College, NM
- Georgia Northwestern Technical College, GA
- Indian Hills Community College, IA
- National Technical Institute for the Deaf: RIT, NY
- North Idaho College, ID
- Owensboro Community & Technical College, KY
- Santa Fe Community College, NM
- Stark State College, OH
- Utah Valley University, UT

## EESTEM II Academy



[www.napequity.org](http://www.napequity.org)

Visit our website for research- and evidence-based tools and resources to build educators' and other professionals' capacity to implement effective solutions to increase access, equity, and diversity in STEM education and careers.

"I was inspired by the change I could make in the classroom with regards to the lifetime of success I could impress on my students. I was inspired by finally understanding to categorize the issues my students, and I, face as inequities and not inequalities. I was inspired by learning that impact of micro-messages, and that self-confidence depends on the development (or attribute) of self-efficacy. It also has made a difference to engage with students and colleagues who want to serve the community better by interrupting the circle of inequity." (From a Cohort 1 participant)



This material is based upon work supported by the National Science Foundation Advanced Technological Education Directorate under grant number DUE 1601548. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

## Outcomes Summary

Participants at least doubled their knowledge and understanding, based on their self-reporting. There were three and four-fold gains for many of the knowledge and skills identified for the Academy. Even though participants may have had exposure to the issues addressed by the Micromessaging professional development, and may have made the decision to make changes, they did not have the knowledge and skills to do so before completing the full Academy.

Knowledge and skills with the top five gains in learning, pre v. delayed post	% Change Pre vs. Delayed Post
How to use the four sources of self-efficacy to increase success in STEM.	314.6%
How to move from deficit-based to asset-based learning.	289.5%
How to impact a student's attribution style to improve their performance and persistence.	217.3%
How to reinforce a growth mindset to build students' self-efficacy in STEM.	208.3%
How to disrupt the cycle of inequity and foster strategies that increase potential for success for marginalized students.	207.6%

### Top classroom practices changed or altered:

1. actively identified and challenged cultural stereotypes in their lives, on their campuses or institutions and among their interactions with others
2. reinforced growth mindset by praising students for their efforts during the process, not their intelligence and final results.

### 83.7% observed positive impact on students.

- increased student engagement (i.e. more involved in learning);
- increased self-efficacy (belief in their ability to be successful at some task related to the classroom, i.e. I can do this); and
- greater sense of belonging.

Greater awareness among peers of the importance of creating an equitable learning environment; more frequent conversations with colleagues about equity and the performance of women and girls, students of color, and students with disabilities (nearly 70%).

Participants who were at sites who would then go on to get a higher fidelity of implementation rating left the Institute with a higher self-perceived improvement in skill, suggesting perhaps more confidence, motivation, or other positive factor carrying them in to the school year.