



N A P E

**Transforming the STEM Classroom through
Professional Development for STEM Educators:
Micromessaging to Reach and
Teach Every Student™**

Ohio ACTE August 1, 2013

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Ohio STEM Equity Pipeline Project Director
Columbus State Community College**

www.napequity.org



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Agenda

Topic	Approximate Time
Overview of NAPE	5 minutes
Program Foundation	10 minutes
Micromessaging Concept and Elements	30 minutes
Wrap-up and Questions	15 minutes



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Goal

Present a new model for educator engagement to achieve equity in the classroom and equality in student outcomes





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Objectives

After completing this unit, you will be able to:

- Demonstrate awareness of the NAPE organization
- Describe the core ingredients for NAPE's MM program, the seven units, and the larger framework that supports high-quality professional development
- Describe micromessaging as a form of communicating implicit bias in the classroom and in our culture
- Understand and address micro-inequities and apply micro-affirmations in the classroom



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Activity: Welcoming Awareness

Introduce yourself to the class

- Name
- Title
- Organization/unit





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Introduction to the National Alliance for Partnerships in Equity



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Who Is NAPE?

National Alliance for Partnerships in Equity

Professional Development

Provide tools and curricula for educators through conferences, presentations, webinars, and formal training

Research and Evaluation

Develop reports. Identify research-based promising practices. Provide input to others' research.

Technical Support

Develop tools and resources for LEAs. Provide consulting services. Offer expertise on access, equity, and diversity issues.

Public Policy and Advocacy

Work with federal agencies. Educate legislators on equity and diversity issues. Develop policy briefs. Alert membership policy issues.



NAPE's Professional Development Suite of STEM Equity Programs

STEM Equity Pipeline™

PIPE-STEM™ Project

Working with institutional leaders (administrators, dept heads, etc.) to improve enrollment, retention, and completion of girls and under-represented populations in STEM courses

STEM Equity Teacher Training

Training teachers to use pedagogy that improves enrollment, retention, and completion of girls and under-represented populations in STEM courses

STEM Equity Counselor Training

Coaching counselors to encourage girls and under-represented populations in STEM careers

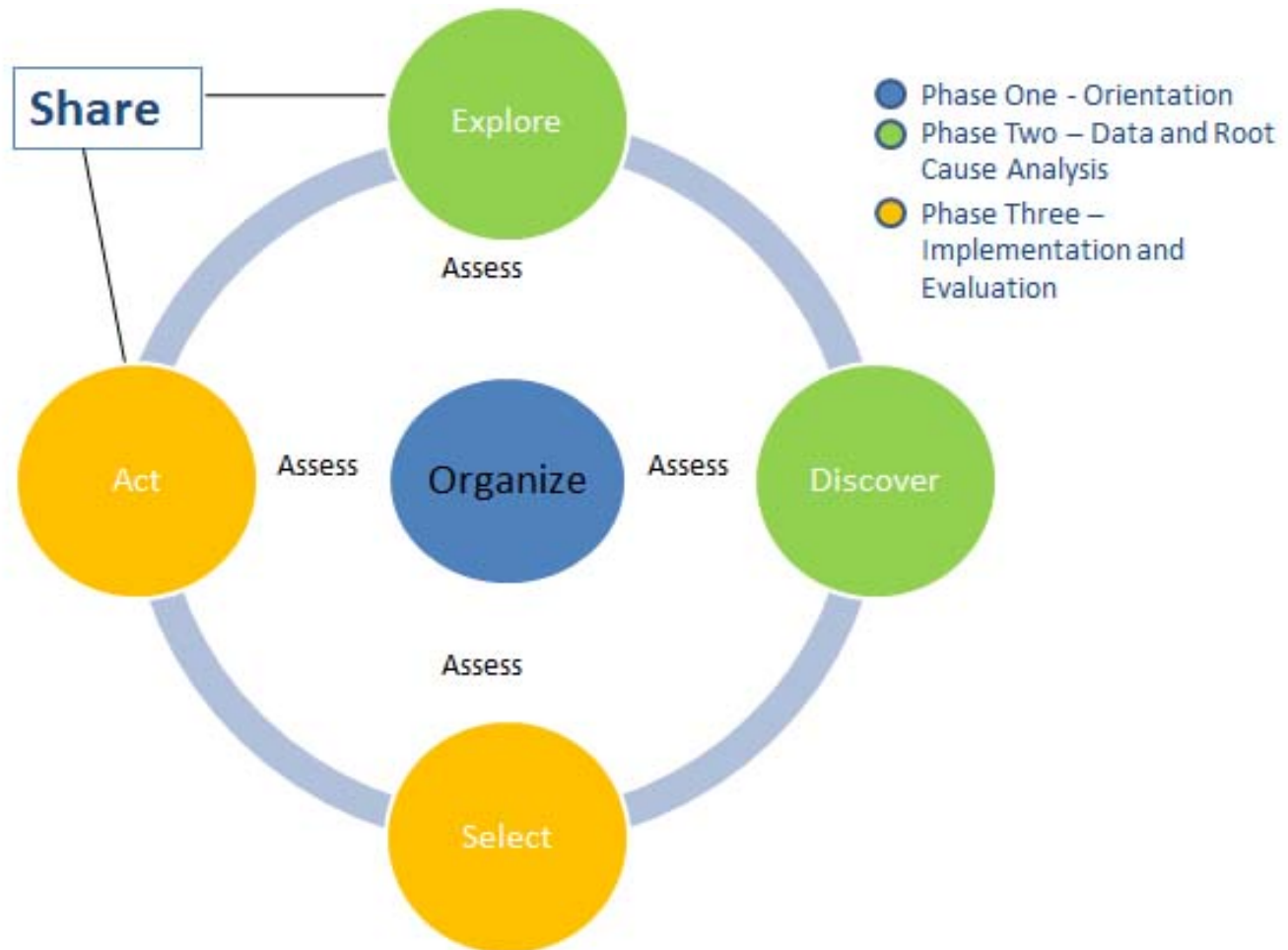
Tools & Resources

Tools to support teachers' and counselors' learning and assist their students, e.g., camps, partner orgs, books



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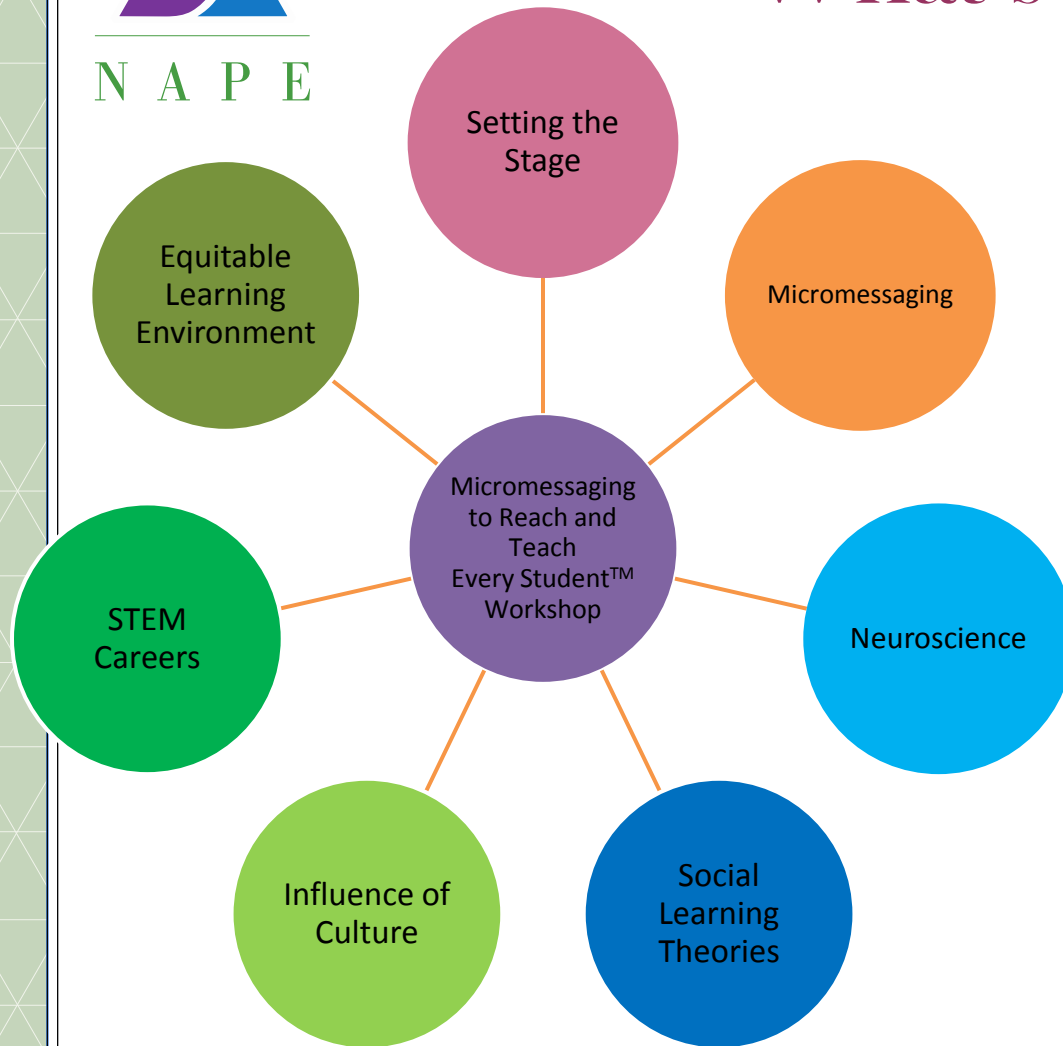
Adapt a Recognized Model: The Educator as Classroom Scientist: PIPE-STEM™





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What's in Store

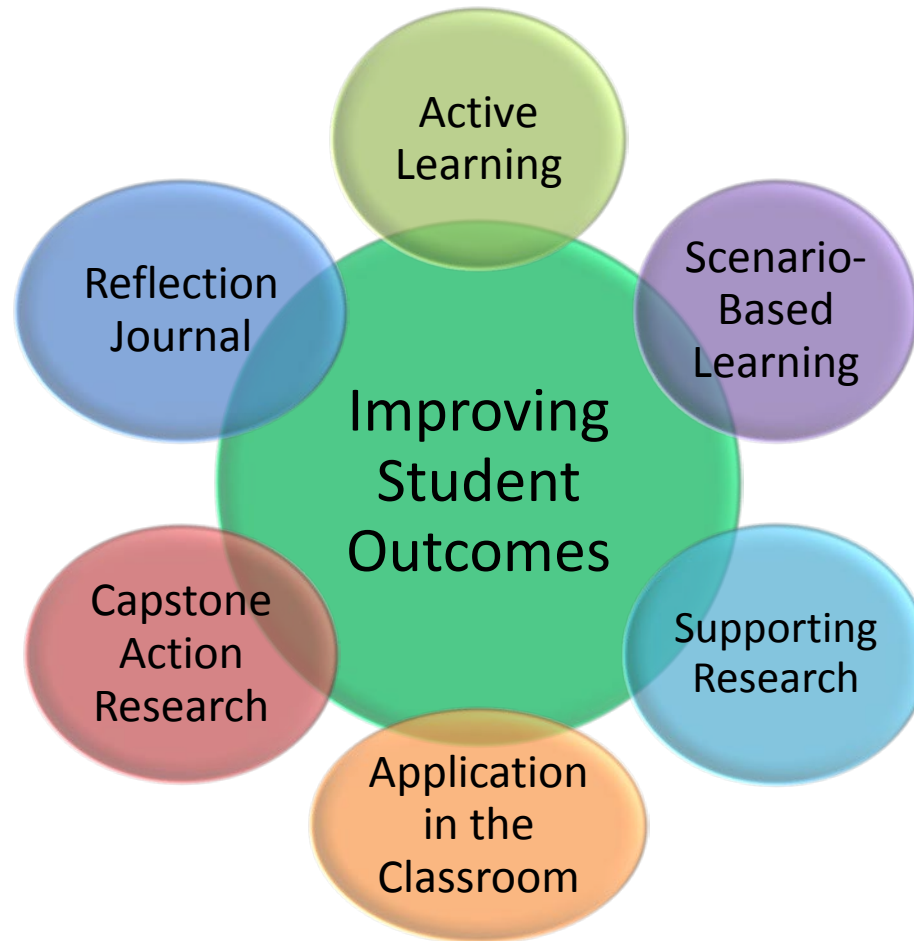


Setting the Stage: In this unit participants will learn to apply a data-driven process for program-based continuous improvement.



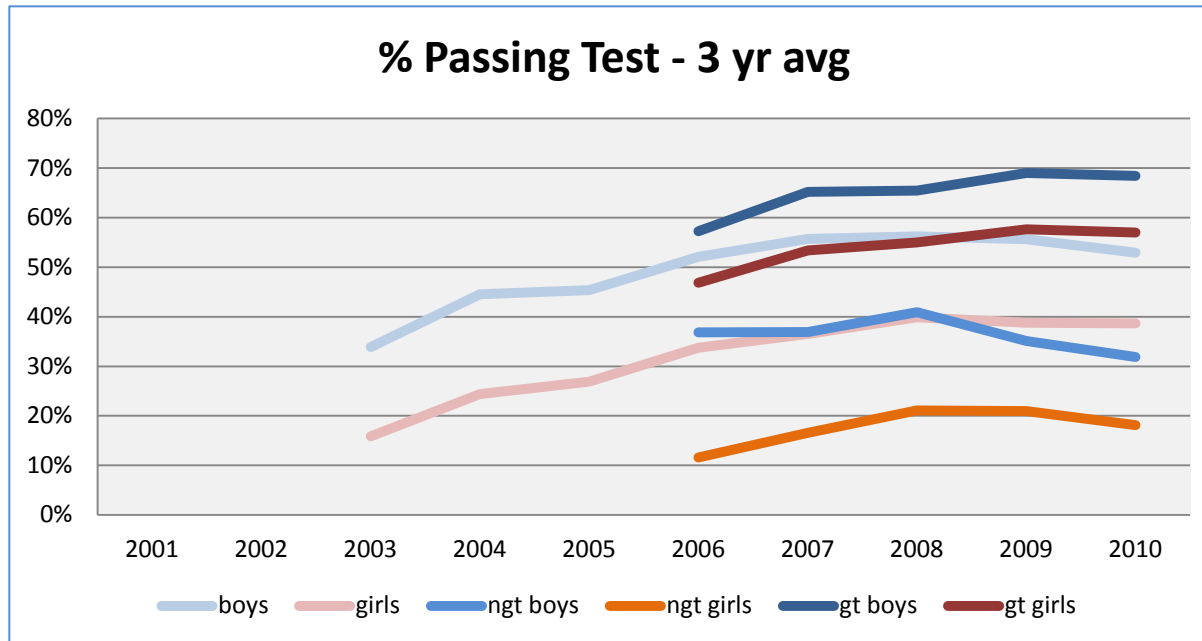
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Making It Happen





Effective Pilot Program DISD Gender Equity Training



Both boys and girls of teachers who had Gender Equity training are passing at rates 20-30% points higher than students of teachers without the training.

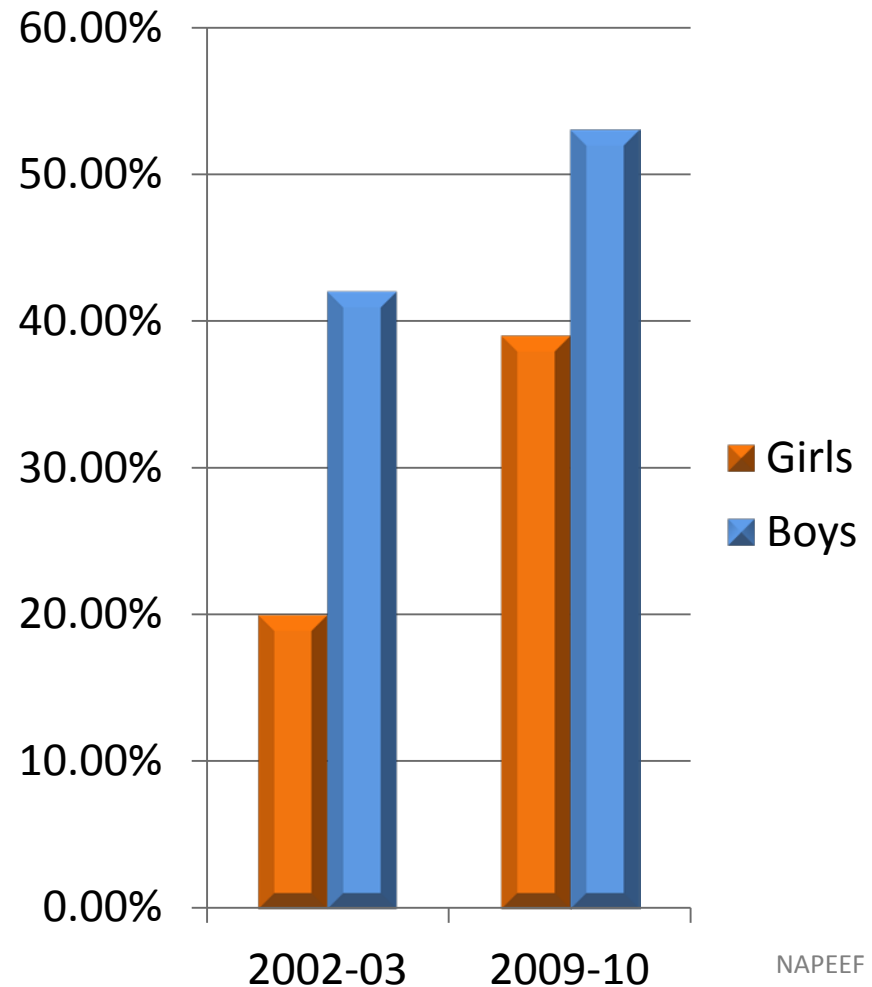


DFW: Professional Development

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Since implementation in 2003,
AP Physics test pass rates
improved for both girls and boys:

- 4x tests passed by girls
- 4x tests by African Americans
- 6x tests passed by Hispanics



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Micromessages



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Micromessaging

Micromessages

- Small, subtle, semi-conscious messages we send and receive when we interact with others

Micro-inequities

- Negative micro-messages we send other people that cause them to feel devalued, slighted, discouraged, or excluded

Micro-affirmations

- Positive micro-messages that cause people to feel valued, included, or encouraged





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Lands End Catalog 2012

super light, superhero tough

FeatherLights™ reduce their school load by trimming weight off the pack. But what makes them really amazing is they do it without sacrificing durability, thanks to strategically placed 420D and 600D pack cloth.

Lighter weight. Same awesome durability.

Guaranteed. Period.®

make it your own!
with a monogram,
embroidery or both!
details, p. 76



3. rich red
(webbing: bright lime)

clip-on
flashlight, p. 77



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Lands End Catalog 2012

light as a feather,
tough as long division

FeatherLights™ reduce their school load by trimming weight off the pack. But what makes them really amazing is they do it without sacrificing durability thanks to strategically placed 420D and 600D pack cloth.

Lighter weight. Same awesome durability.

Guaranteed. Period.®

e-reader case, \$15, 419654-B43,
water bottle, \$19, 422617-B44,
landsend.com





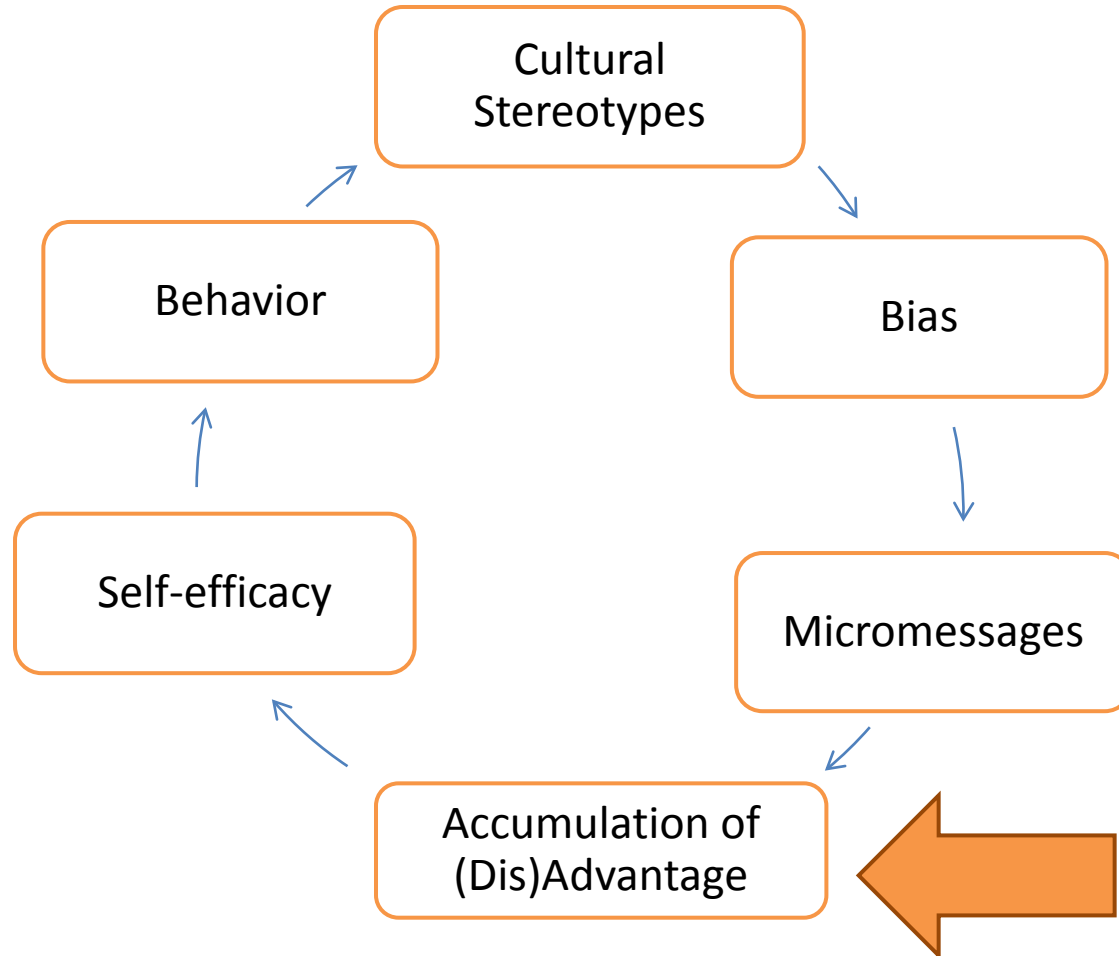
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Micromessages Accumulate





Micromessages: The Missing Link Between Bias and Behavior





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Exercise



Negative Implicit Bias = Micro-Inequities

Unconscious

Subtle

Unintentional

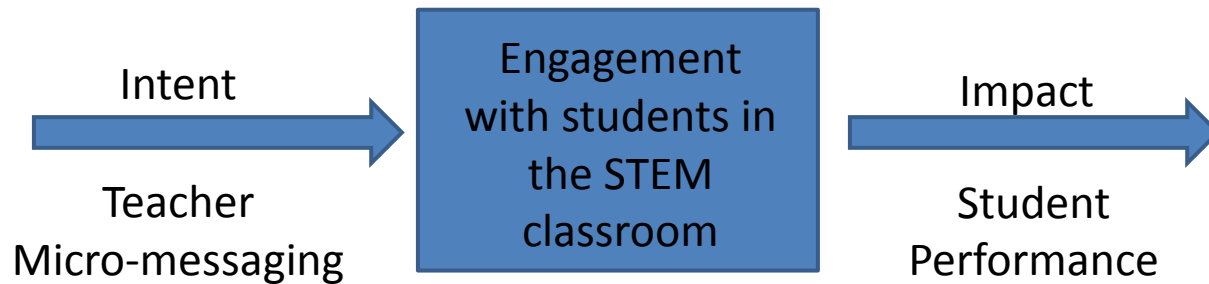
PERVASIVE

POWERFUL



Why Think About Micromessaging?

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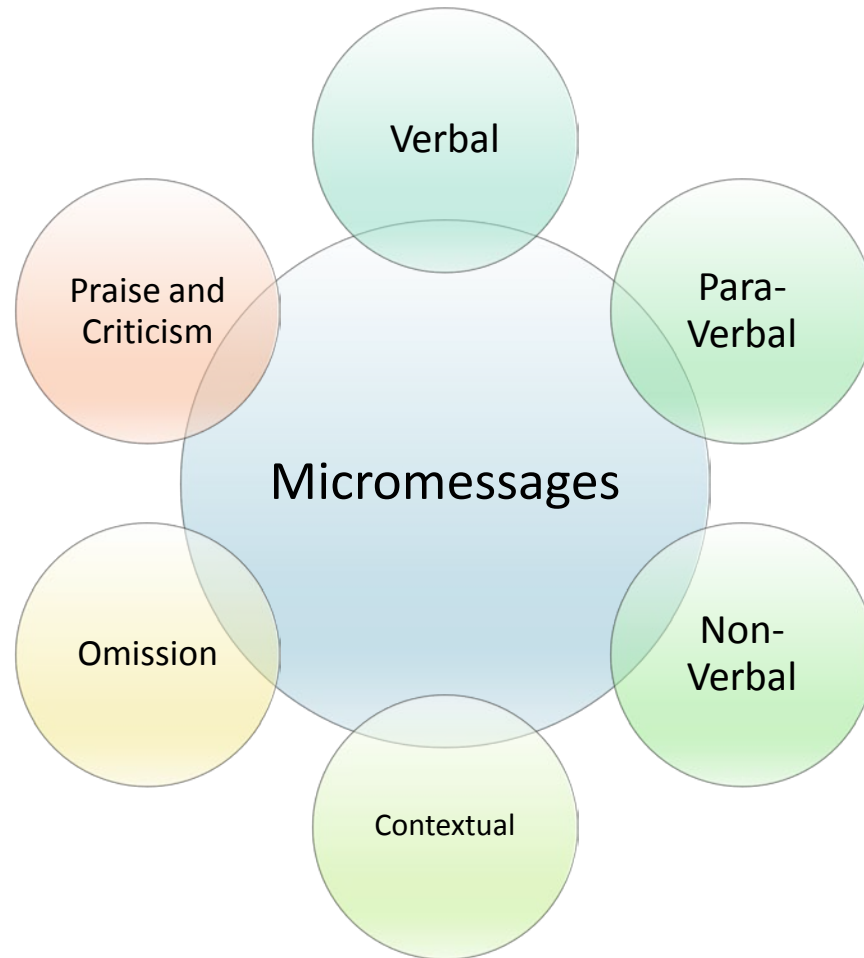
Small and seemingly insignificant behaviors may result in unfavorable learning outcomes.

Impact Is More Important Than Intent!



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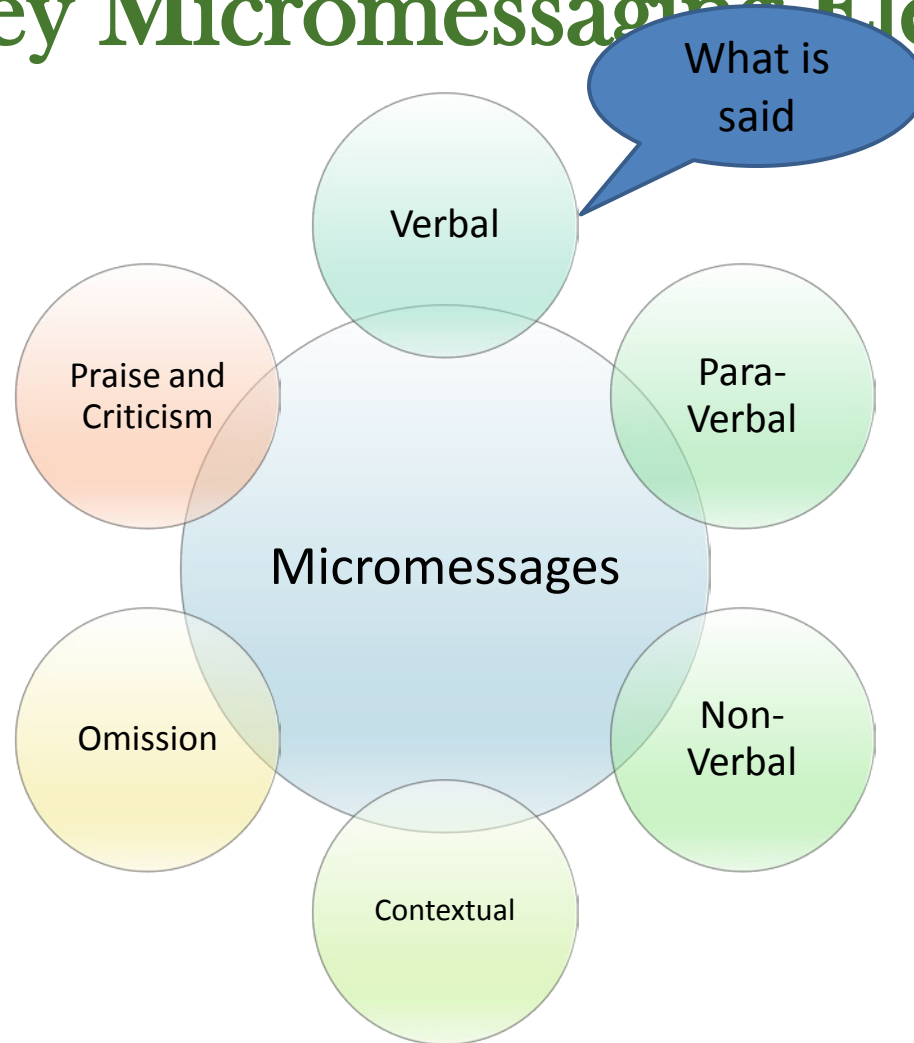
Key Micromessaging Elements





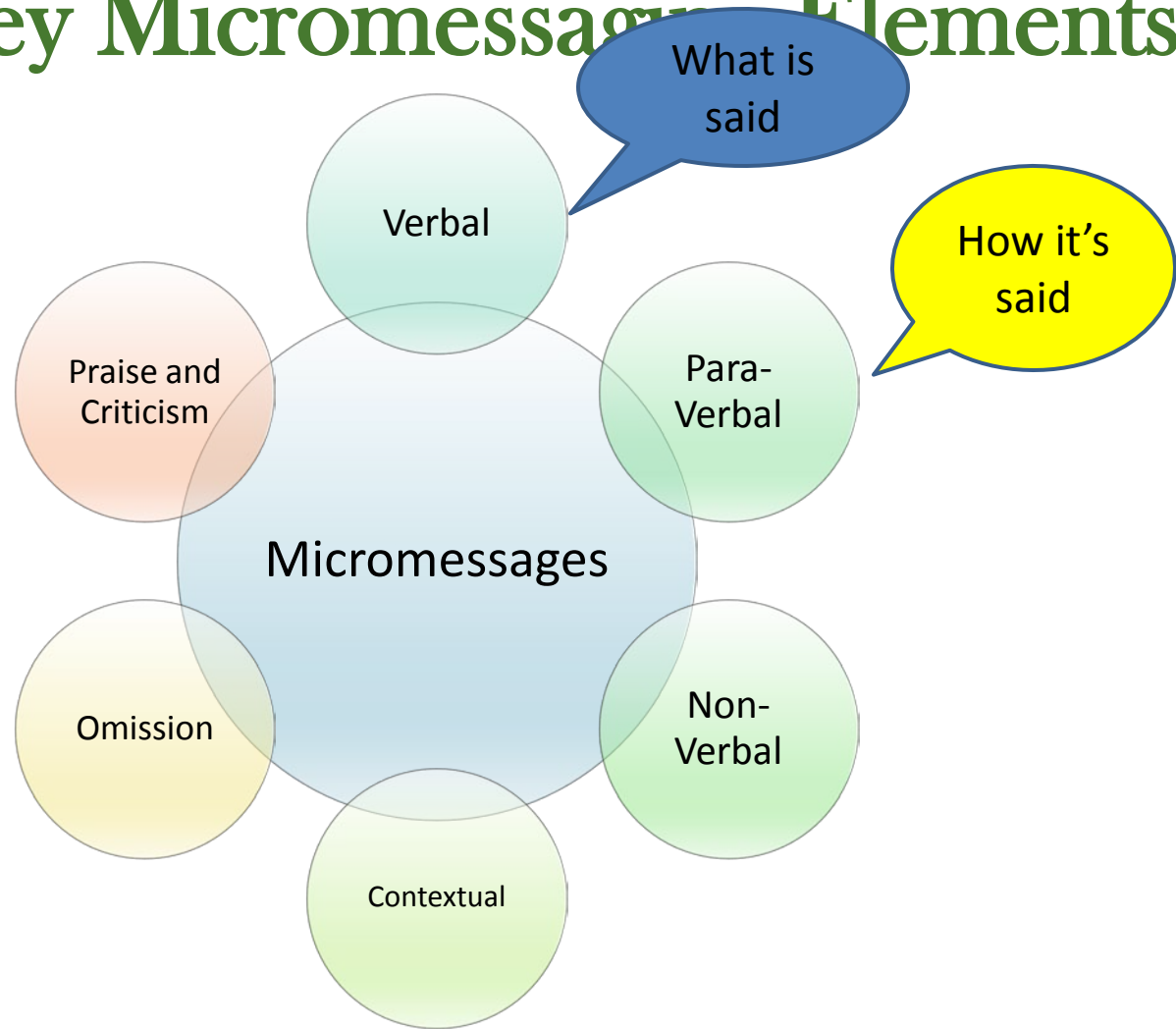
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Key Micromessaging Elements





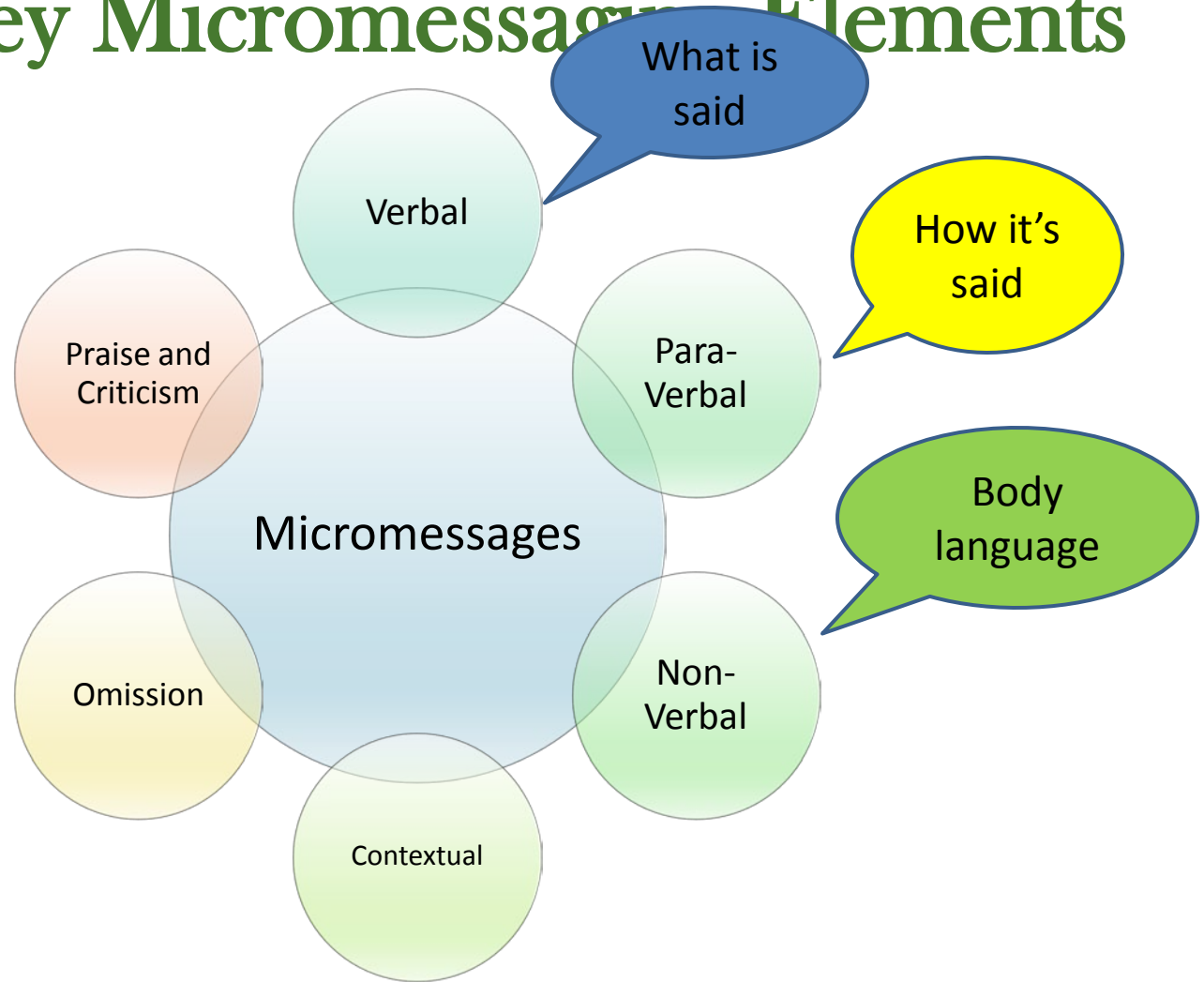
Key Micromessaging Elements





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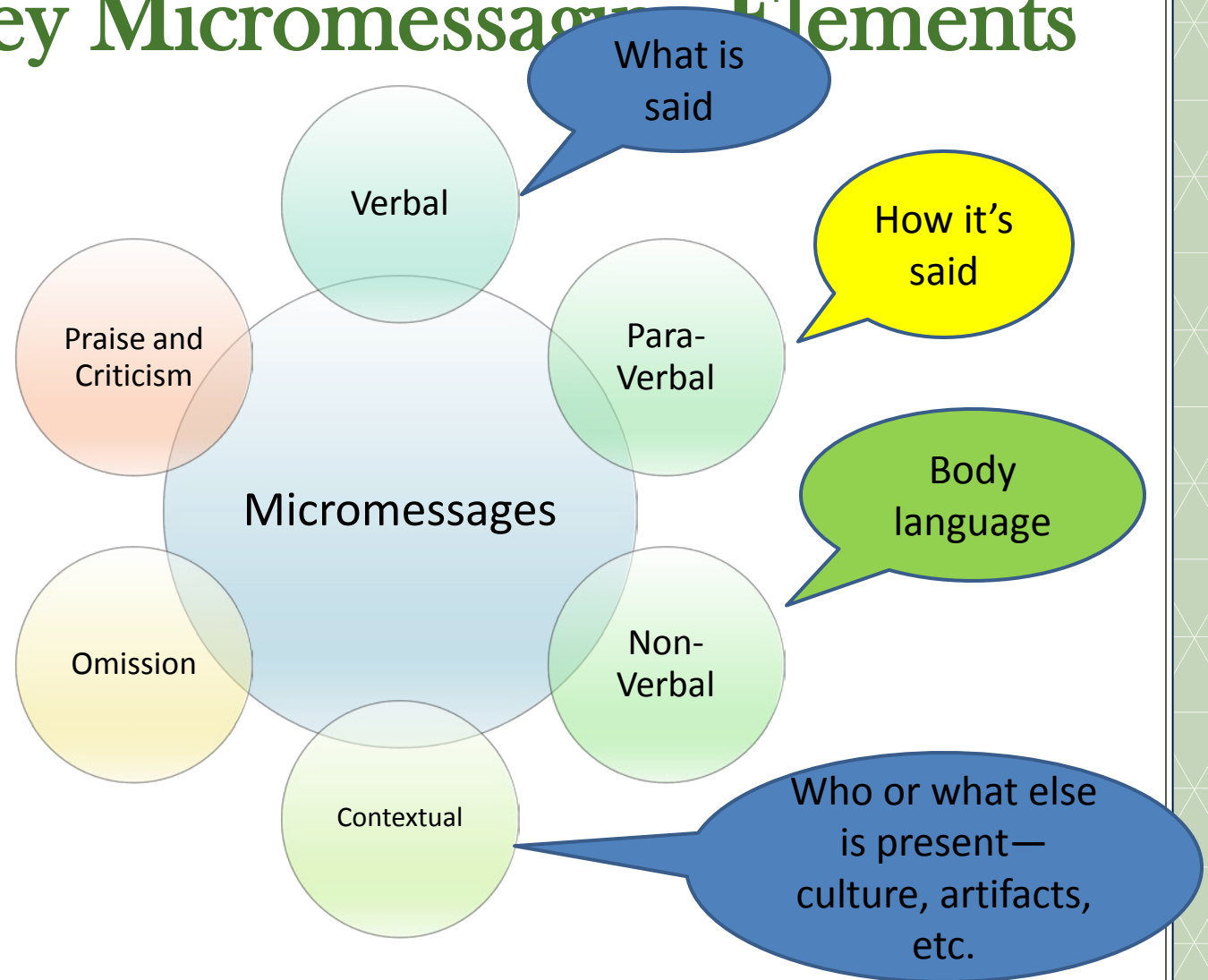
Key Micromessaging Elements





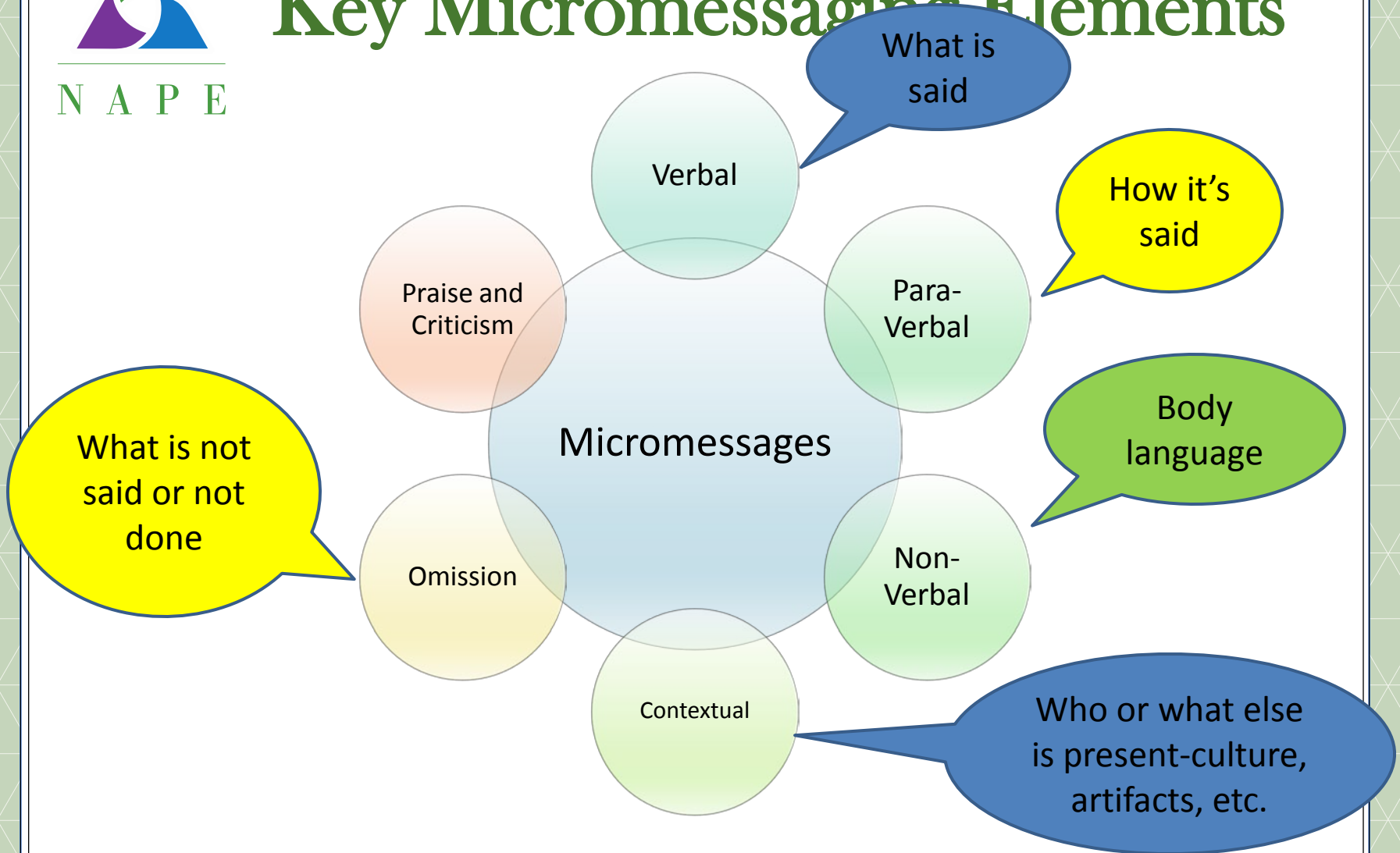
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Key Micromessaging Elements





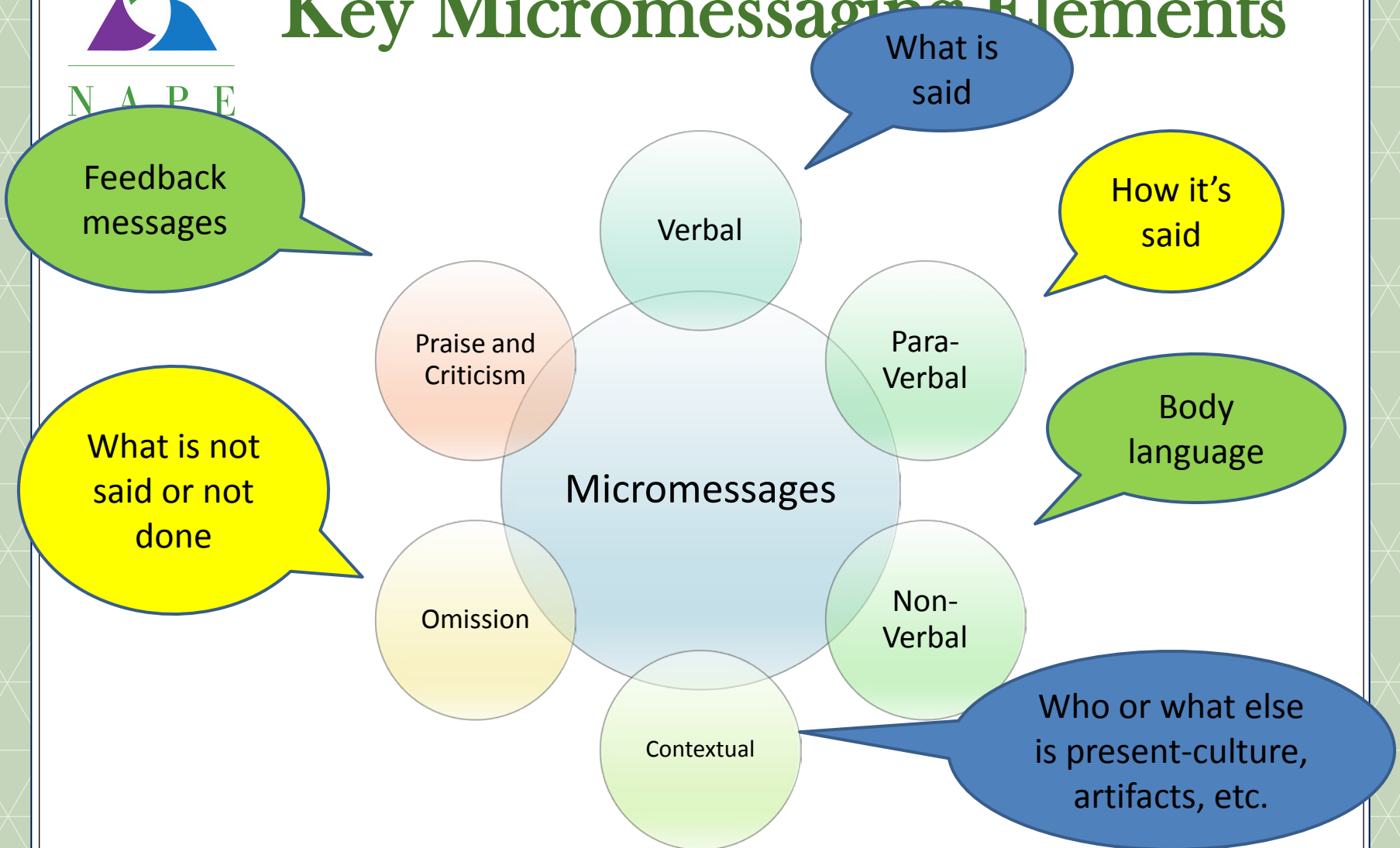
Key Micromessaging Elements





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Key Micromessaging Elements





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Examining the Small

Consider and share a specific incident when you were ...

- unintentionally discouraged or hurt by something **SMALL** someone said or did
- deeply valued by your colleague or family member in a **SMALL** yet powerful way.

- How did you know? What did that person do to communicate your value?



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Micro-inequities and Micro-affirmations



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Positive Micromessages

Micro-affirmations are micromessages we send that validate and recognize other people in positive and supportive ways.

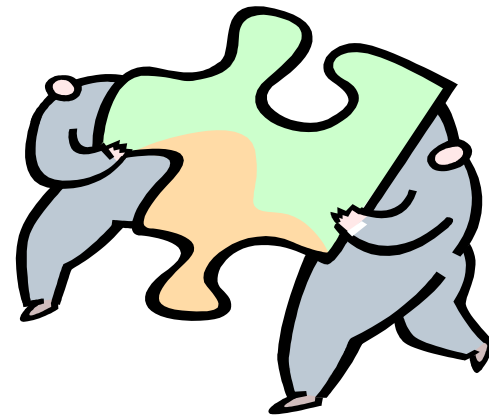




Activity: Inoculate and Be Affirmative!

Make a concerted over-effort to become affirmative:

- It takes time (a year or more!)
- It takes effort (a conscious plan)
- It takes support (peers and a learning community)





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Impact of Micro-Affirmations on Females in STEM

- Enhanced creativity and innovation and willingness to take risks
- Increased engagement in complex tasks and open-ended thinking
- Improved caring about learning
- Increased interest in STEM and development of girls' STEM identity





Super Strategies



- Practice positive affirmations.
- Work with peers to identify unintended biases to improve your instruction.
- Help the student identify someone in his or her life who recognizes the student's potential, connects the student's strengths to characteristics of a profession, and teaches him or her how to enter that field.
- Intervene in students' conflicts and teach them to use inoculations and affirmations when communicating.
- Be diverse in the examples used in the classroom to illustrate concepts and ideas.





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Hybrid Program for Ohio: Spring 2013

- Three teams of STEM educators participated
 - Cuyahoga Valley Career Center, Scioto County Career-Technical Center, and Stark State College
- Five hour-and-a-half Modules delivered at a distance
- Part of larger NSF-funded Project
- Currently being evaluated by NAPE



A powerful testimonial from one participant, Annissa Langworthy, Stark State College

- Previous labeling of levels of difficulty - easy, challenging, and difficult.
- Changed verbiage to Level 1, Level 2, and Level 3
- Results:
 - All six sections of AP II students' scores averaged 80th percentile and above.
 - Change in terminology allowed more students to attempt all three levels on the practical.
 - Students wrote out their critical thinking on the less challenging questions, which had not been seen previously



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Wrap-up and Questions



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Moving Forward

- As the scientist in your classroom, review your data and begin to formulate a hypothesis for any weaknesses or gaps that exist in student outcomes.
- As a researcher in your classroom, think about how your methods might be changed to improve your students' performance.
- As the coach in your classroom, consider the key messages you can make to your "team members" to affect their best game.
- As the educator in your classroom, recognize and reflect on the power you have to impact the lives of students.



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“I am only one, but still I am one. I cannot do everything, but still I can do something; and because I cannot do everything, I will not refuse to do something I can do.”

-Edward Everett Hale





Questions? Contact Information

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<http://www.stemequitypipeline.org/StateTeams/OH.aspx>

Thank you for your participation this afternoon!