Welcome to the NGCP National Webinar

Neurodiversity in STEM Education

Monday, September 21, 2020

Please respond to the poll and introduce yourself in the chat. Use the chat to ask questions, respond to one another, and share resources.
NGCP Vision

The National Girls Collaborative Project brings together organizations committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).
NGCP Goals

1. Maximize access to shared resources within organizations interested in engaging girls in STEM.

2. Strengthen the capacity of programs by sharing exemplary practice research and models.

3. Use the leverage of a network to achieve gender equity in STEM.
NGCP Activities

Increased Collaboration Benefits Girl-Serving STEM Programs

- Helped us better serve girls: 82%
- Increased girls’ interest in STEM: 78%
- Helped my program be more effective: 77%
- Increased girls’ confidence in STEM: 77%

Source: NGCP 2015 Annual Survey
National Network of Collaborative Teams
Neurodiversity in STEM Education

speakers:

Sara Sanders Gardner: Program Director at Bellevue College’s Neurodiversity Navigators program

Elinore Gaitan: Biochemistry student, Autism Behavior Technician, and Tutor
Neurodiversity in STEM Education

Sara Sanders Gardner
Neurodiversity Navigators Program Director, Adjunct Faculty
Identity First
✓ Grammatically correct
✓ Includes disability as part of person
✓ Embraces disability
✓ Many disabled people prefer identity first language

Person First
▪ Awkward syntax
▪ Separates disability from person
▪ Shows a desire to be distant from disability
▪ Parents and professionals often prefer person first language


Ask the person which they prefer if you find you need to use terminology.
Some Definitions

- **Neurodiversity** – the diversity of human brains and minds – regarded as part of the normal variation of neurocognitive functioning within the human species

- **Neurodivergent (ND)** – an individual who has a brain that functions in ways that diverges significantly from the dominant societal standards

- **Neurotypical (NT)** – an individual who has a style of neurocognitive functioning that falls within the dominant societal standards of “normal”

http://neurocosmopolitanism.com/neurodiversity-some-basic-terms-definitions/
Neurodiversity Umbrella

Dyslexia
Autism
Tourette’s
Dysgraphia
Dyspraxia
Epilepsy
Mental Health
Plus
ADHD
Dyscalculia
**Deficit / Medical Prescriptive Model**
- Seeks to “fix”
- Sees person as the problem
- Believes there is one “correct” or “typical” way of being
- Embraces cultural constraints

**Social Justice / Descriptive Model**
- Seeks to empower
- Sees barriers to access as the problem
- Believes there are many acceptable ways of being in the world
- Questions cultural constraints
It’s not a disabled dog
It’s a cat
Understanding Barriers

Environment, Communication, Culture
Consider the Environment

Everyone benefits from an environment that includes:

- Natural lighting, ability to dim lighting
- Quiet areas and conversation areas
- Sound blocking
- Clear signage
- Options for socializing and meeting participation
- Retreat areas
The Cultural Iceberg by Edward T. Hall
Ways to Communicate

Direct
Concrete
Logic
Detail

Indirect
Abstract
Emotions
General
Non-Verbal Communication

Many elements:

- Facial expressions
- Gestures
- Paralinguistics (tone)
- Body Language & Posture
- Proxemetics (space)
- Eye Gaze
- Haptics (touch)
- Appearance
- Artifacts (objects)
- Humor

For our purposes: **Unspoken, implied, or hidden meaning within spoken communication**

*These also vary across cultures and within cultures*
Looking Further at Language & Stress
What is Plain Language?

“A communication is in plain language if its wording, structure, and design are so clear that the intended readers can readily find what they need, understand it, and use it.”

www.plainlanguage.gov
Example

Before
The applicant should submit an official copy of his or her transcript, two letters of recommendation, a resume which includes experience in chemical research, and a short statement of intent to our internship office by April 15

After
To apply, submit the following items to the Internship Office by April 15:
- An official copy of your transcript;
- Two letters of recommendation;
- A resume which includes:
  - experience in Chemical Research;
- A short statement which explains why you are interested in this internship.

Submit via email: intern@state.org
Or mail to: Internship Office
555 State St.
Grant, OR 55555
**Best Practices**

**Communication / Environment**
- Be direct / concrete
- Put it in writing: email follow-up, sticky notes, meeting notes
- Ensure person knows where to find written instructions, due dates, etc.
- Encourage multiple means of communication during meetings (UD)
- Create accessible environment
- Provide clear way-finding info

**Perception / Mindset**
- Remember cultural differences
- Ask for clarification rather than taking offense at tone of voice or direct feedback
- Accept questions readily; encourage asking for help
- Recognize communication difficulties/differences
- Be quick to recognize efforts
- Remain positive
Resources

Stairway to STEM [www.stairwaytostem.org/](http://www.stairwaytostem.org/)
Neurodiversity Hub [www.neurodiversityhub.org/](http://www.neurodiversityhub.org/)
Autistic Women and Nonbinary Network [https://awnnetwork.org/](https://awnnetwork.org/)
Research on Cognitive Accessibility of Web Technologies [www.w3.org/TR/coga-user-research/#autism](http://www.w3.org/TR/coga-user-research/#autism)
Plain Language [www.plainlanguage.gov](http://www.plainlanguage.gov)
Conversations with Elinore
Upcoming NGCP Webinars

Elevating Youth Voice in STEM Programming
Tuesday, October 6, 2020

Picture a Scientist: Bringing Gender Equity in Science to the Big Screen
Tuesday, October 13, 2020

Register on the NGCP website