Moving Beyond Stereotypes: Progress Made/Challenges Ahead

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Willystine Goodsell 2016 Awardees
Willystine Goodsell Award Address

AERA SIG
Research on Women and Education
Overview

• Starting Early
  – Empowering girls
  – Supporting boys

• Inclusion
  – Integrating disability
  – Prioritizing diversity

• Identifying Equity Gaps
  – Girls and women in STEM
Welcome Baby Boy
Welcome Baby Girl

The stars have been twinkling up in the sky —
The breezes have whispered a sweet lullaby —
The sunshine’s been brighter, the moonbeams have, too —
And they just can’t wait to start welcoming you!

Congratulations on Your New Little One

Someone to cuddle, so tiny and new,
someone to rock and sing lullabies to,
someone to play with and think the world of — your new little baby, someone to love!

So Happy for You!
Early Influences

- Family expectations
- Interactions
- Room décor
- Clothing
- Toys
- Books
- Preschool
Sugar and Spice for girls
Building blocks for boys
I’m Glad I’m a Girl/I’m Glad I’m a Boy

Boys invent things.

Girls use what boys invent.
I’m Glad I’m a Girl/I’m Glad I’m a Boy

Boys build houses.

Girls keep houses.
Perpetuating Stereotypes in Preschool

• Three pioneers in early childhood sex-role research:
  – Lisa Serbin
  – Beverly Fagot
  – Selma Greenberg

• Conducted research on:
  – Toy and play preferences
  – Teacher/child interactions
  – Differing abilities of girls and boys as they enter preschool
Stereotypes in Preschool

• Serbin’s research demonstrated that play experiences and toy preferences led to learning deficits for both sexes, e.g. spatial relations for girls and verbal ability for boys.

• Fagot’s work demonstrated the importance of appropriate teacher intervention to help children broaden their skill development.
Girls’ and Boys’ Abilities

- Greenberg’s work demonstrated that girls and boys enter Kindergarten with different abilities based on early socialization.
  - **Girls:** verbal, nurturing, good impulse control, small muscle control, strong one-to-one relationships, listening skills
  - **Boys:** Large muscle and spatial strengths; inventiveness; good group relations; managing and directing; self worth and value; less impulse control
Differing Abilities

• Greenberg’s work highlighted that

– Typical preschool curriculum reinforced girls’ abilities but didn’t help them leave their “comfort zones”

– Boys needed and received much more attention to prepare them for the school environment
In Response to the Research...

Non-Sexist Education for Young Children offered *practical* strategies to free both girls and boys from stereotyping by:

- Encouraging girls to engage in active play, and boys in quiet play
- Fostering respect and friendship between girls and boys
- Encouraging boys and girls to develop a full range of emotions
- Helping girls develop their full physical potential
Response to the Research, cont’d.

- Presenting images of both men and women as nurturers
- Showing women and men doing a wide variety of jobs
- Presenting children with a more realistic and exciting world view by representing racial/ethnic diversity
- Showing a broad range of groupings that fully represent the American family

Cover: NON-SEXIST EDUCATION for Young Children
A Practical Guide
by Barbara Sprung
Project Director, Women’s Action Alliance
Broader Options for Girls and Boys

For Girls

Greater opportunities to develop spatial relations, physical activity, participation in STEM, and standing up for themselves
Broader Options, cont’d.

*For Boys*

Greater opportunities to develop and express a full range of emotions and their ability to nurture others.
What do Sarah Bernhardt, Wilma Rudolph, and Harriet Tubman have in common?
Women and Disability

- Women and girls with disabilities are subjected to multiple layers of discrimination. Based on their gender and disability status they often face “double discrimination”. This inequality is exacerbated for women and girls with disabilities who are members of marginalized ethnic or racial groups.
#2 Women and Disability

- The United Nations estimates that 75 percent of women with disabilities are unemployed and women with disabilities who are employed often earn less than their male counterparts and women without disabilities.

- Unemployment rates are highest among women with disabilities.
Women and Disability Awareness Project 1982-1984

• Grew out of a national conference on educational equity for disabled women and girls

• Examined connections between discrimination based on gender and discrimination based on disability

• Developed, piloted and evaluated a workshop based on consciousness-raising techniques

• Produced Building Community: A Manual Exploring Issues of Women and Disability
#2 Women and Disability Awareness Project

- Lack of positive role models for people with disabilities, particularly women with disabilities
  - Disabled Women: The Case of the Missing Role Model (O’Toole, 1979)

- Rolelessness – the absence of sanctioned social roles or the institutional means to achieve them
  - Disabled Women: Sexism without the Pedestal (Fine & Asch, 1981)
Including All of Us

- An early childhood curriculum about disability
- Nonsexist
- Multicultural
- Incorporates images and actual role models of children and adults with disabilities
- Addresses invisibility
Mainstreaming for Equity

Nonsexist, multicultural, inclusive curriculum for elementary and middle school
No More Stares

- Shattering stereotypes
- Women and girls with disabilities on the job at home, in school, and participating in sports
- With children colleagues, friends and family
WHO DOES SCIENCE?

This group activity helps students become aware of stereotypes they may hold about who does science and gives them an opportunity to broaden their views. As the first activity, “Who Does Science?” focuses on the importance of science equity and forms the foundation for the ten activities that follow. If you do this activity fully, you will have introduced your students to science learning that opens their minds to new possibilities for future jobs and careers.
Science: It’s a Girl Thing!

• What Will Happen If...
  – Young Children and the Scientific Method
• Playtime Is Science
  – Parent/child activity program PreK-3
• Great Science for Girls
  – Extension Services for Gender Equity in Science through After-School Programs
• Science: It’s a Girl Thing!
  – Web-based activities to do science at home, ages 4-8
Equity Gaps in STEM

• While there has been significant progress in closing the gender gap, women remain underrepresented in STEM education and careers.

• Women comprise 48 percent of the U.S. workforce but just 24 percent of STEM workers.

• Half as many women are working in STEM jobs as one might expect if gender representation in STEM professions mirrored the overall workforce
Studies of inquiry and traditional STEM

Traditional
- Girls under achieve
- Girls opt out

Inquiry based
- Achievement is equal
- Participation is equal

Boys achieve same in both conditions.
Achievement is higher overall in inquiry classes.

Credit: Boaler, J., youcubed
Growth mindset vs. fixed mindset

**Growth Mindset**

Smartness grows with hard work

- More persistent
- Encouraged by failure
- Choose challenging work & subjects like STEM

**Fixed Mindset**

You are smart or you are not

- Give up easily
- Interpret failure as “not a math person”
- Avoid challenging work & subjects

*Credit: Boaler, J., youcubed*
The M in STEM

• Developing a positive math identity – the belief that you can do math and the belief that you belong – is an important, yet neglected driver of math participation and persistence in girls.

• Incompatibility between the identities modeled in today’s math and science classrooms and the identities girls want for themselves

• Contributes to lower female participation in STEM compared to that of males.
Girls get the message

Math is hard!
Girls get the message: Math is NOT for them

- Toys and TV shows
- Attitudes of parents, teachers and peers
- Taught that math success is about an innate ability that they lack
- Learn that being feminine and being good at math are mutually exclusive.
- As a result, girls do not develop a positive math identity
Two pillars of a positive math identity

The belief that you can do math

The belief that you belong
#1 – Belief you can do math

• Myth of innate ability

• No “math gene” or “math brain”

• Perpetuating myth particularly harmful to girls

• Growth mindset important – ability and competence grow with effort.
#2 – Belief that you belong

- Who belongs in mathematics? Everyone!
- Girls receive a barrage of messages that say it is not for them
- Stereotype threat
  - Asking girls to self-identify on a test caused them to underachieve
  - Female test takers performed worse and reported greater anxiety when negative stereotypes about gender were introduced
- Experimental study – importance of “I am giving you this feedback because I believe in you”
Why is math identity important?

- More than 50 percent of middle and high school students plan to drop math as soon as they can.
- Math is essential to everyday life.
- 60 percent of future jobs depend on math.
- TIMSS (Trends in International Mathematics and Science Study) found that females remain less likely than males to be attracted to math careers.
- Math identity is key.
When math is taught well – as a broad multidimensional subject that involves inquiry, making connections, reasoning and creativity – it helps all students.
What needs to be done?

- Change messages about who belongs
- Change messages about innate abilities
- Teach inquiry-based, open mathematics
Furthering Girls’ Math Identity

- Capacity building project to advance research and practice relating to girls’ math identity
- FHI 360 in partnership with the New York Academy of Sciences
- Funded by National Science Foundation (NSF)
- Focuses on girls in grades 4-8 – critical years of transition from elementary to middle to high school
Moving beyond stereotypes

- Awareness
- Scholarship
- Activism
- Community building
- Commitment
References


References
