Measuring Subtle Shifts:

Career Interests of Middle School Girls in a Technology Fluency Informal Education Program

November 13, 2009

Torie Gorges, SRI International

Build

girls inc.®

The Noyce Foundation

Introduction

- Build IT: program components, goals, some findings

- Challenges in evaluating girls' interest STEM careers

- What we've tried over the years, what's worked

Build

What is Build IT?

- NSF ITEST grant to implement Build IT for 3 years (2005-2008) at Girls Incorporated of Alameda County, CA

- Mission: Develop a problem- and design-based curriculum that promotes middle school girls' information technology (IT) fluency and incorporates the STEM content of computer science and mathematics.

- Now being scaled at other Girls Inc. affiliates

Build

Build IT's goals

- Encourage middle school girls to
  - Explore and pursue STEM careers
  - Use technology to strengthen and build their technology fluency
  - Take high school algebra and geometry courses in preparation for postsecondary STEM education and/or IT careers
- Enhance Girls Inc. staff's capacity to offer IT fluency programming.

Build

Build IT's goals

- Encourage middle school girls to
  - **Explore and pursue STEM careers**
  - Use technology to strengthen and build their technology fluency
  - Take high school algebra and geometry courses in preparation for postsecondary STEM education and/or IT careers
- Enhance Girls Inc. staff's capacity to offer IT fluency programming.

Build

Findings on interest in STEM careers: Some highlights

- Girls' image of STEM careers as solitary and boring are changing to collaborative, fun, and intellectually stimulating

- But we'd like to see more girls expressing interest in these careers for themselves

- Girls are telling program leaders, parents and others about their interest in IT careers:

"I could really work here. I'm learning codes now, and I'm this little, by the time I'm in high school I can be there working on their site making it better!"

- Build IT participant's remarks on a field trip to Leap Frog

Build

Challenges of evaluating girls' interest in STEM careers

- Shifts in interest are subtle:
  - Girls are young; they aren't at a decision point

- Staff who work with girls daily saw more interest in STEM careers than we saw in surveys/interviews

Build

Facing evaluation challenges by working with program staff

- Over the years, we built a strong relationship with Girls Inc. staff

  – They bought into the evaluation

- Staff have helped us develop interview, survey questions that would better capture "subtle shifts"

- Ongoing process of getting feedback, changing protocols, trying them out, and so on

Build

Methods of capturing interest in STEM careers

- Staff interviews
- Girls' interviews
- Survey items

Staff interviews

- Years 1 and 2: No specific questions for staff on girls' interest in STEM careers

- Year 3: Interview included discussion on IT professional visits

- Scaling (Y3-4): Interview included 5 specific questions on IT professional visits, plus a question on what girls learned in relation to IT career possibilities

Build

Girls' interviews

- Year 1: Asked girls early on in the interview about career interests, did not ask specifically about STEM careers

- Years 2 and 3: Moved careers questions to the end, still did not ask about STEM careers. Asked some girls what careers they learned about in Build IT.

- Scaling: Asked girls about their career interests; also asked specifically if they were interested in STEM careers

Build

What has worked best

- Working with staff who know these girls to determine best wording for questions
- Asking for specifics—not just assuming the topic will come up during interviews
- Giving girls room to expand thoughts beyond what's comfortable by asking specifically about STEM
- Combining data from different sources

Build

Plans for the future

- Continue to adapt items as needed, including:
  - Adding new, more specific survey questions: Are you interested in jobs related to science, technology, math?

Build

Thank you!

Torie Gorges, SRI International

torie.gorges@sri.com

Build