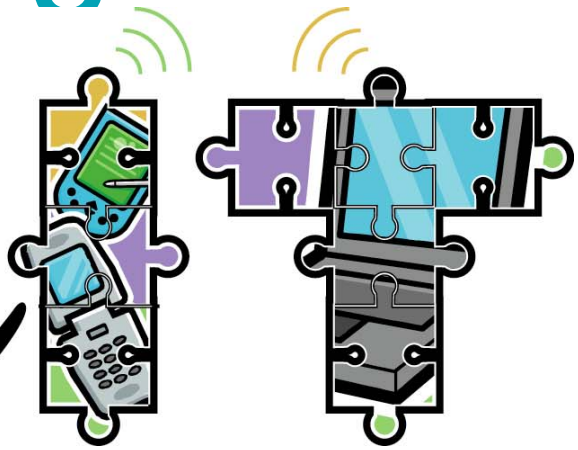
# Scaling Build IT



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# Piloting Build IT

- Implemented Build IT 3 years at Girls Incorporated of Alameda County, CA
- Build IT's goals are to encourage middle school girls to
  - Explore and pursue IT 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
- In addition to these learning goals for the girls, Build IT aims to enhance GIAC's staff capacity to offer IT fluency programming.

# Key Elements of Build IT

- Problem-based curriculum that uses the *Understanding by Design* approach
- Embedded performance tasks for evaluating technology fluency
- Family Tech Nights
- Professional development materials for staff
- Guides for involving IT professionals
- Evaluation instruments for measuring girls' interests and understandings

# Successes of the Build IT Pilot

- Girls image of IT careers as solitary and boring have changed significantly to collaborative, fun, and intellectually stimulating
- Girls have increased their technology skills and conceptual knowledge
- Girls expressed more interest in mathematics and computer science courses
- Staff have developed greater IT knowledge and skills

# Piloting the Scaling of Build IT

- 11 Girls Inc. program sites implement Build IT over two years (2008-2010)
  - 6 Girls Inc. affiliates (8 new program sites) applied and were accepted to participate
  - Continued implementation at the Girls Inc. of Alameda affiliate (3 program sites)
- Partners
- Professional development
- Ongoing support beyond funding
- Research questions and evaluation approach

# Eight New Program Sites

- Located in the Northeast U.S. and Canada to aid professional development and evaluation:
  - Concord, New Hampshire
  - Nashua, New Hampshire
  - Holyoke, Massachusetts
  - Lowell, Massachusetts
  - Philadelphia, Pennsylvania
  - Hagerstown, Maryland
  - York, Canada (2 program sites)
- Selected based on their ability to support the program and for their diversity as a group
- Small stipend for participating ($10,000 per program site over two years.)

# Criteria for Participation

- All program sites have
  - High-speed Internet access and one computer for every two to three girls.
  - Resources to implement at least 60 hours of the curriculum during the school year plus the 2-week summer program. Sites will consider implementing all 240 hours of the curriculum.
  - Staff who are willing to learn technology and design through participation in Build IT professional development and have a commitment to implementing the Build IT curriculum.
  - Implemented Girls Inc. Operation SMART® (Science, Math, and Relevant Technology) for a minimum of 1 year.

# Diversity Among Program Sites

- Rural vs. urban
- School vs. center
- Demographics (range from 6% to 98% minority; more than half have at risk populations)
- All of the curriculum vs parts of the curriculum
- Time of year and duration (concentrated weeks vs. after school)

# Partners

- Girls Incorporated of Alameda County
  - Resource for program sites implementing Build IT
  - Lead PD
- Girls Incorporated's national office
  - Ongoing PD
  - Contact and resource support for affiliates
- SRI International
  - Initial PD to affiliates staff. Train-the-trainer model.
  - Curriculum completion and support
  - Formative evaluation
  - Development of Program Adaptation Toolkit
- Funded by The Noyce Foundation. We have also requested a supplement to our current ITEST grant.

# Professional Development

- Initial face-to-face two-day PD
- Eight web casts; 4 per year
- Online community (Tapped In) for leaders and participants to help each other; moderated by Girls Inc. and SRI.
- Opportunities at regional conferences led by Girls Inc. national
- Training manager main contact at national

# Ongoing Support

- Girls Incorporated partners are key
  - Part of Girls Inc. national's successful approach of scaling and sustaining STEM programs.
  - Prestige within Girls Inc. to be a curriculum pilot site. Provide guidance to other sites.
- Develop Program Adaptation Toolkit
  - To be developed and used by Girls Inc. national and affiliates.
  - The Toolkit will include
    - a self-assessment of readiness to implement Build IT
    - program support suggestions (e.g. funding)
    - scenarios based on site contexts (e.g. rural vs. urban)
    - PD guides and contacts for nationally run PD
    - evaluation tools.

# Research Questions

- Is the Build IT curriculum adoptable and adaptable in different settings? How is the curriculum adapted to work effectively in different settings?
- Are girls engaged, achieving IT fluency, and interested in pursuing IT careers, including taking high school mathematics and computer science courses necessary to pursue these careers?
- Is the Build IT curriculum sustainable in different settings?
- Is staff capacity at each site increased and supported in order to offer this IT fluency programming?

# A Framework for Scaling

- Is the Build IT curriculum adoptable and adaptable in different settings? How is the curriculum adapted to work effectively in different settings? **Fidelity**
- Are girls engaged, achieving IT fluency, and interested in pursuing IT careers, including taking high school mathematics and computer science courses necessary to pursue these careers? **Spread**
- Is the Build IT curriculum sustainable in different settings? **Sustainability**
- Is staff capacity at each site increased and supported in order to offer this IT fluency programming? **Program ownership**

# Fidelity

- “Mutual adaptation”
- To what depth are the sites implementing the key elements of the Build IT program
- Implementation framework

# Spread

- **The numbers**
  - During the pilot, approximately 210 girls reached.
  - Five years after the pilot, 20,000 girls reached each year through the Girls Inc. network.
- **Beliefs, norms and principles**
  - To what extent are the enduring understandings, performance tasks, and interactions with IT professionals being used?
  - Is there hands-on and time for reflection on enduring understandings?

# Sustainability

- Key elements and instructional approach permeates all levels:
  - National organization (professional development and curriculum support staff)
  - Affiliate (executive director and managers)
  - Program site (program leaders)

# Shift in Program Ownership

- From SRI and Girls Inc. of Alameda County to
  - National organization
  - Affiliates
  - Program staff

# Evaluation

- Goals:
  - Discover how girls' attitudes and knowledge are changing
  - Understand implementation in different contexts
  - Analyze staff capacity and identify support needs
  - Provide feedback on scaling efforts to Girls Inc. National, GIAC, and SRI as well as Girls Inc. staff at each site.
  - Share understandings from scaling effort with STEM community.
- Three types of evaluation:
  - Summative
  - Formative
  - Self-evaluation

# Summative Evaluation

- Led by HTA
- Methods:
  - IT Attitudes Survey
  - IT Concepts Survey
  - Interviews with SRI, Girls Inc. staff, and affiliates

# Formative Evaluation

- Led by SRI, with local evaluators for each affiliate site (graduate students)
- Centered on an implementation rubric outlining high-, medium-, and low-quality implementation (based on experiences at GIAC)
- Methods:
  - Observations of sessions
  - Interviews with girls
  - Interviews with Girls Inc. staff (coordinated with summative evaluation interviews)

# Self-evaluation

- Led by Girls Inc. staff at each site
  - Each site determines how much and what kind of self-evaluation will serve their needs
- SRI-created set of self-evaluation tools:
  - Professional development post-training surveys
  - Observation protocols for girls' learning and staff capacity
  - Coordinator/leader planning check-in form
  - End-of-unit reflection form
  - Implementation rubric

# Discussion

- Comments on the Build IT approach to scaling
- Scaling your project
  - Where are you in the scaling process?
  - What models for scaling are you using?