Girls and Information Technology:
Innovative Approaches to Narrowing the Gender Gap

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Deborah Muscella
Karen Peterson & Karen Manuel
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Abstract

Despite the infusion of technology into our daily lives, females are still not full participants in the careers that are shaping the future of IT. Girls are not averse to computers (AAUW, 2000), but are vastly underrepresented in computer science classes and high-paying, advanced technology careers. Although there have been many local efforts to reduce the gender gap, there are few efforts to summarize the lessons learned from innovative collaborations between researchers and educators. In this session, we will describe five innovative approaches to overcoming research-based barriers and engaging girls in IT. The five programs take place after school and during the summer, and represent a range of geographical locations and racial/ethnic diversity in the US. Each presentation will describe the target population, the program strategies, and the research findings that show what girls are learning in the program and how that will prepare them to play an active role in shaping IT. The discussant will highlight themes related to increasing gender equity in IT, and describe the implications for learning with technology both in and outside the classroom.

Deborah Muscella

Technology at the Crossroads

Abstract

Technology at the Crossroads is an urban ecology project that offers girls hands-on, collaborative, and real-world experiences that build skills and confidence, and increase the extent to which girls value and are interested in technology. Participants are Boston middle school girls: Hispanic (51%), African American (38%), American Indian (11%). Most students are from low-income families and many live in families in which Spanish is the first language. Students learn about urban ecology, geographic information systems (GIS) and global positioning systems (GPS) during a three-week summer program and after-school programs. The evaluation measures students' urban ecology knowledge, technology skills, and confidence and interest in a range of technology applications and careers.

Zakiyyah Kareem & Audrey Warren

Project IT Girl: A Creative Approach to Engaging High School Girls in Computer Science

Abstract
Project IT Girl is an innovative program for high school girls in Austin, Texas that aims to increase girls' confidence, competence, and interest in science, math, engineering and technology careers. Participants represent diverse ethnic/racial and economic backgrounds: 68% are Asian-American or Caucasian, 20% Latina or Hispanic, and 10% African-American. Program activities prepare girls to enroll and excel in both high school and college Computer Science courses. Girls learn computer programming, game design, and graphics software. Family involvement is a critical part of Project IT Girl, which supports parents to help their daughters build confidence and self esteem to take and persist in technical courses, and prepare for college.

Melissa Koch, Bill Penuel, & Torie Gorges

Build IT: Girls Building Information Technology Fluency Through Design

Abstract
Build IT is a design-based curriculum that promotes middle school girls' information technology (IT) fluency and incorporates the STEM content of mathematics and computer science. The program takes place in a Northern California city, and more than 80% of the girls are from African American and Latina backgrounds. Throughout Build IT's after school and two-week summer program, girls use a Design Process, experience user-centered and participatory design methodologies on a variety of information technology development projects, and interact with IT professionals as role models. The evaluation has found increases in the IT knowledge, interest, and capacity of both participants and staff persons.

Karen Peterson & Karen Manuel

TechREACH: Technology and Research Experiences through After-School Clubs for High-Risk Students

Abstract
TechREACH is a program for underserved middle school students and teachers in rural, eastern Washington State. The goals are to increase interest and intentions to pursue science, technology, engineering, and mathematics careers, and to build the capacity of schools and communities. Activities include after school clubs, a two-week summer technology workshop, e-mentoring, teacher professional development, parent outreach, and college preparatory support. The evaluation suggests that girls increased their interest and confidence to pursue nontraditional careers, and that girls preferred female-only clubs. Presenters will describe the curriculum units, focusing on the key strategies used to engage students and increase interest in STEM.

Steve Bean & Jacob Martinez

The Girl Game Company: Engaging Latinas in Information Technology

Abstract
The Girl Game Company program builds on cultural strengths by forming a network of support for rural, middle school Latina girls to pursue non-traditional careers in IT and IT-intensive science. Program activities include collaborative computer game design, participation in an online educational community, field trips and real- and virtual-mentors that help girls explore IT careers, and family involvement. The presenters will describe evaluation data on skills, confidence, and interest in IT from the first 40 participants, and highlight the program strategies that have helped retain participants and increase their interest and confidence with IT.