

**The Evolution of the Turtle:
Designing Social Networks for New Learning Communities**

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Ms. Thomas: "What is computer science?"

Alisha: "Science on the computer?"

Two researchers at the School of Information at UC Berkeley observed and interviewed junior high school girls in a semester-long YWCA TechGYRLS program in the fall of 2005 with the goal of understanding how middle school girls' use of technology influenced their media literacy skills, sense of identity, and self-perceptions of their future role in an increasingly global and technical economy.¹ The participants learned to program in Logo, build websites, and participated in discussions about the use, usability, and role of technology in their lives.

During our introductory MicroWorlds lesson, we asked a participant what she thought we might do with the turtle (the Logo programming object). She responded: "feed it and love it and take care of it?" She had constructed her frame of reference through her use of Neopets, an immensely popular virtual pet simulation game with over 100 million user accounts. The evolution of the turtle from a programmable object in a single-user environment to an animated, globally shared creature with life-like emotions and characteristics reflects the growth of young teenagers into a demographic of highly engaged, core members of the "always on" crowd - active users of the Internet, instant messaging, video games, and social networking sites. As digital natives, they create, manage, and shape their identity online through a negotiation of the visual, social, cultural, and architectural cues that are provided to them.

In this poster, we will discuss our results and propose three emerging design features for building an online community that connects teenage girls with college and professional women in technical fields to encourage girls to pursue fields in computers and technology. First, our results indicate that the underlying architecture of the community needs to facilitate *user-generated content*, in which they can create and remix artifacts. Second, there needs to be a like-minded *audience* that motivates their engagement and participation (we found that their peer groups and communities can offer equal or greater value for this purpose than their teachers, parents, and adults in familiar traditional structural roles). Third, they need to be able to develop a sense of *identity and membership* within this community through a semi-mediated environment that facilitates collaboration, critical thinking, self-expression, and creative experimentation.

This poster will also describe our long-term research agenda, currently in phase one, at the Electronic Learning Communities lab at Georgia Tech and in collaboration with local Atlanta schools, Girl Scouts, and YWCA programs.² This project will generate user needs, design, build, and evaluate an online community based on a social networking model that looks to leverage youths' existing online practices. This research is important for the CHI community through its goal of encouraging underrepresented groups to pursue HCI-related professions as well as in its commitment to local Atlanta youth and the entire Georgia state educational system.

¹ We conducted our research with the MacArthur funded Digital Youth group at UC Berkeley, see: <http://digitallyouth.ischool.berkeley.edu/>

² Research is being conducted by Sarita Yardi and Professor Amy Bruckman, along with Professor Mark Guzdial, as part of the NSF funded Statewide Vertical Alliance to Broaden Participation through Contextualized Computing, an alliance of Georgia Tech, the Center for Education Integrating Science, Mathematics, and Computing, the Georgia Department of Education, the Girl Scout Council of Northwest Georgia, and the University System of Georgia.