Narrowing the Digital Divide: The Young Women Leaders Program HerStory Project

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Narrowing the Digital Divide: The Young Women Leaders Program

HerStory Project

By: Stephanie Newton, Emily Peters, Victoria Tucker, Christine Quilpa, Edith Lawrence, & Clare Vierbuchen
Abstract

Research suggests that girls are at especial disadvantage in the field of informational technology and are less likely than boys to take courses or seek out careers in this area. The Young Women Leaders Program (YWLP), a mentoring program at the University of Virginia that pairs at-risk middle school girls with college women for a year of mentoring, developed the YWLP HerStory project to engage middle school girls in informational technology through their development of technology projects focused on psychosocial issues of importance to them. This study reviewed an early version of the YWLP HerStory’s technology curriculum and training for mentors, the revisions made to both, and evaluated the effectiveness of the revisions with a sample of 27 eighth grade girls and their mentors. Findings indicated that participating in the revised curriculum improved girls’ engagement in technology projects, including an 83% completion rate, and modifications to mentor training improved mentor’s grasp of relevant technology and confidence in teaching it to their mentees. Notably, participating eighth grade girls reported that the technology curriculum was fun and expressed an interest in further engagement in using technology platforms to tell their stories.

Introduction

Middle school is a critical period in girls’ lives as they make the transition to high school and determine the direction of their future academic and vocational careers. Performance in middle school classes begins a trajectory that can either narrow or expand girls’ options for college. A subset of middle school girls, particularly those with significant environmental stressors (e.g., poverty, single-parent family), is at greater risk for educational failure, school dropout, and involvement in delinquent activities (Eccles, Roeser, Wigfield, & Freedman-Doran, 1997). In addition to other disadvantages they face, low-income youth are less likely to have access to computers or informational technology. This lack of access to technology creates a “digital divide” that widens as youth progress into high school (Matwyshyn, 2003; Sanders, 2005). The digital divide is compounded for low-income girls in particular, since research shows that girls are already at a disadvantage in the field of technology. Although women and minorities are less likely to take high school computing courses than white males (Burke & Mattis, 2007; Sanders),
researchers focused on addressing this divide have found that teaching computing and information technology in a way that builds on the interests and needs of women and minority students can increase technology’s appeal to these students (Cohoon & Aspray, 2006). Furthermore, more recent studies show that females have more positive attitudes towards using technology when they learn in cooperative groups (Spector, 2008).

Teaching technology within a mentoring program may be one way of closing the digital divide for adolescent girls. Studies have found an association between mentoring relationships and positive outcomes for youth, including reduced drug and alcohol use, better peer and family relationships, improved academic performance, attitudes, and behavior, and an increase in the likelihood of attending college (Dubois & Karcher, 2005). Unfortunately, there is little research on the value of using mentoring as an avenue for directly addressing the digital divide for low-income adolescent girls.

The Young Women Leaders Program. The Young Women Leaders Program (YWLP) at the University of Virginia is an after-school mentoring program that pairs college women with at-risk seventh grade girls for an academic year (Lawrence, Levy, Martin, & Strother-Taylor, 2008). Girls are nominated for the program by their teachers, guidance counselors, and school administrators as young women who are deemed at risk academically, socially and/or emotionally and would benefit from a mentoring relationship. Interested college women complete an application and interview prior to being selected to be mentors. Mentor training occurs through a two-hour workshop prior to being assigned a mentor and a two-semester course on theory and research on issues facing adolescent girls and best practices in mentoring while they are mentoring. Matches are based on mutual interests and compatible schedules.

Mentoring pairs meet for two hours a week in a group format with five to eight other pairs and a group facilitator, and four hours a month one-on one. Group sessions follow a research-based group curriculum that cultivates the girls’ competence, connection and autonomy, and supports their academic, social and emotional development (Lawrence, Sovik-Johnston, Roberts, & Thorndike, 2009). The curriculum introduces academic and interpersonal skills that are useful for middle school girl development (e.g., organizing homework, problem solving, creating support teams) and includes
opportunities for them to develop and participate in leadership service projects in their school and community (e.g., appreciation dinner, school legacy project). Since 1997, YWLP has mentored over 1500 middle school girls and trained over 1500 college women mentors in Virginia and supported the establishment of 12 “sister sites” at various colleges and communities in the United States and Africa. In response to mentee interest in continuing in YWLP during their eighth grade year, faculty and students at the University of Virginia developed the YWLP HerStory project in 2007. The curriculum is designed to extend the successful seventh grade mentoring program by offering the girls a second year of mentoring with college women that is specifically focused on the applications of computing and informational technology to their lives (e.g., digital storytelling).

Overview of the YWLP HerStory Curriculum

The primary objective of the YWLP HerStory project is to introduce informational technology to eighth grade girls within the context of a supportive mentoring relationship. Similar to the original YWLP format, each eighth grade girl (Little Sister) is paired with a female college mentor (Big Sister) for the academic year and participates in both one-on-one mentoring (four hours a month) and group mentoring (two hours a week). During group time six to eight pairs and an undergraduate or graduate student facilitator follow the YWLP HerStory curriculum that teaches technology as a platform to support girls’ leadership development while focusing on salient issues facing adolescent girls (e.g., relational aggression, dating safety, appreciating diversity; Lawrence, Vierbuchen, Stout, & Leyton, 2010). More specifically, the curriculum provides opportunities for the girls to use various technology platforms (e.g., Power Point, digital storytelling, video recording) to develop their “voice” on issues relevant to their lives. Individually and in the group, the mentors teach their mentees these technology platforms and then support their mentees as they create digital stories about themselves or an issue of particular importance to them. During the first semester, the primary technology focus is on the girls each developing a technology project using the program PhotoStory, a digital storytelling program that allows users to create a slide show using photos, voice recording, and music. During the second semester, the girls learn to use more sophisticated technology (e.g., video recording) as a technology platform for telling a story. Each
girl uses flip video cameras to film the story of a woman leader from their community who they think offers insight on an issue they feel is important to adolescent girls, and then video editing software to create a short film about their topic. Flip Cams are palm-sized video cameras that record, zoom, and play back instant videos through simple application.

Current Project

The current project focuses on the development and evaluation of the YWLP HerStory project by two teams of undergraduate students in the Jefferson Public Citizen (JPC) program at the University of Virginia. Through a competitive application process the JPC program awards funding for teams of four to six undergraduates who propose a community-based research and service project. The first JPC team that focused on the YWLP HerStory project evaluated a pilot of the curriculum during 2009 with 43 middle school girls from four middle schools in Charlottesville, Virginia and found support for the hypothesis that digital storytelling can be an innovative entry point for increasing girls’ interest in information technology (Newton, et al., 2010). However they also concluded that the curriculum should undergo further revision and evaluation because, while the girls’ technology project completion rate was higher than the previous year, it still only reached 60%. In 2010 a second JPC team applied for and received funding to interview mentor and mentee participants in the first study about the curriculum, revise the curriculum and mentor training, and evaluate the changes with another group of middle school girls and their mentors. The focus of the rest of this paper is this second study.

Methods

Interview with Technology Teacher.

In order to determine if including a technology focus in the eighth grade version of YWLP would be supported by the girls’ middle schools, the second JPC conducted an interview with a technology teacher who currently works in one of the county middle schools served by YWLP and has contact with girls in the city schools through extracurricular involvement. When asked about girls and technology, he noted the importance of making it interesting in their lives. He added, however, that there was relatively limited opportunity to do so within the school. Students learn basic skills, such as typing, as a part of the
sixth grade curriculum, and seventh and eighth grade students are able to choose the school’s technology course as an elective. Although he felt the elective course successfully focuses on engaging students through interesting technology projects, boys were more likely to enroll in it than girls. In terms of technology curriculum suggestions for YWLP, he suggested that students without regular home access to a computer are less likely to be able to type quickly, navigate the Internet, or easily understand new software programs, so may need extra opportunities to practice with their mentor the skills being taught. He felt that increasing girls’ exposure to technology through programs such as YWLP could be highly beneficial.

Interview and Focus Group Feedback from Study One Participants

Interview and focus group feedback from facilitators, mentors, and mentees in the 2009 pilot was collected by the first JPC team and analyzed by our own team; three themes emerged. For the majority of the facilitators and mentors, their greatest concern with the YWLP HerStory curriculum was that they did not feel they had enough knowledge in or training on the various technology platforms before they taught the platforms to their mentees. Of note, most facilitators and mentors in YWLP are Social Science or Humanities majors and having an expertise in informational technology is not part of the criteria to be a mentor in the program. The mentors and facilitators noted that when a mentee did not know how to use a particular technology function (e.g., video editing) they felt uncomfortable if they also were unsure of its capabilities. They suggested adding more training and practice for both before introducing the platform to the middle school girls. The second theme that emerged focused on the concern that the curriculum did not provide the girls with enough scaffolding on the development of a story idea and the specific steps to telling a good story. A majority of the mentors said that the hardest part of the project for their mentees was coming up with their story idea. Several recommended beginning the project by showing several examples of this year’s finished projects (e.g., digital story, video film) and providing ample time during group to discuss them. Finally the third theme that emerged was echoed by facilitators, mentors and mentees. Specifically, it was the concern that the curriculum had lost the “fun” of YWLP by just focusing on technology to the exclusion of team-building and service projects. Several mentors and facilitators
recommended that each girl do only one technology project a semester and that no more than half each week’s group time be spent working on these projects.

Curriculum and Training Revisions

We used the three themes outlined above to revise the YWLP *HerStory* curriculum and mentor training. In particular, we focused on making the technology curriculum more engaging for adolescent girls and revising the training on the use of the various technology platforms so the mentors felt more prepared to teach the technology and support their mentees in its use. To increase girls’ engagement in the curriculum and their investment in their technology projects, we decreased the amount of time pairs spent each week in group on their technology project to an hour, moved it to the second half of the group, and had them focus on just one progressive step at a time in the development of a story (i.e., topic, main ideas, compelling point) and use of a technology platform to tell it (i.e., taking and importing pictures, adding background music, use of text). The first group hour was changed to focus on group connection (i.e., group sharing of week’s highs and lows), sister connection (i.e., pair time with each other), and talking about or role playing “hot topics” suggested by the mentors or mentees. These topics are likely to include academic struggles, handling conflict, and peer group issues. The revised curriculum also includes a leadership project each semester (e.g., food drive, interview with woman leader in the community) that the group records digitally and collaboratively turns into a story about their group. We also made room for guest speakers, including teachers and community role models, who could speak not only about women’s leadership but also about the application of technology in their careers. Finally, we revised the mentor and facilitator training to include a four-hour hands-on workshop at the beginning of each semester during which they are taught the components of the technology platforms for that semester by producing a digital story of their own. These digital stories became additional examples to show the mentees.

Current Study

We implemented the revised curriculum with 29 eighth grade girls at four middle schools in Charlottesville, Virginia and provided training for 27 mentors and 8 facilitators in the relevant technology
at the beginning of each semester. The ethnic breakdown of the mentee group was 56% African American, 27% Caucasian, 7% Hispanic, and 10% other. The girls’ mean age at the beginning of the school year was 13.5. Over half of the eighth grade girls (52.4%) had not taken any technology class in school, including typing. Of those who had taken a technology class, the majority (60%) had taken only one.

To evaluate the revised curriculum, we conducted individual interviews with the middle school girls and focus groups with the mentors and facilitators. These interviews and focus groups covered overall experience in the YWLP program, as well as their evaluations of the use of technology and the curriculum itself. As a second indication of engagement in the technology curriculum, we also calculated the number of technology projects completed this year and compared it with completion percentages from previous years.

**Results**

**Mentee Interviews.** The middle school girls that were interviewed all expressed appreciation for the different aspects of technology they learned. Several of the girls commented that learning technology was fun. One girl compared her experience with the technology curriculum this year to last year’s with YWLP’s seventh grade curriculum and concluded that, “Last year we mostly talked, and this year we used a lot more technology. I like the technology better because we can talk and have fun, and use technology at the same time.” Related, the girls also expressed interest in learning other computer skills outside of the technology platforms that the program focused on teaching. For example, one girl said, “I’m not good at typing, but the more I use it, the better I could become.” Another Little Sister said that as a result of being in the YWLP HerStory project she was interested in “using the computer more in general and learning other computer skills.” Of note, this girl also said, “My school doesn’t do a lot that involves technology, and we don’t have a photography class in middle school.” She said that as a result of her positive experience in the YWLP HerStory project she was more likely to sign up for a technology class in high school. Other girls also expressed a continuing interest in the technology to which they were exposed. Several girls said that they would have liked to be able to spend more time on their technology
projects in group in order to “add more details” and make their story more compelling. Many reported that they did spend time refining their project during one-on-one time with their Big Sister and liked using their one-on-one time for this.

In terms of specific technology platforms that may be of interest to girls, several of the study participants said that they liked that the PhotoStory program introduced them to various forms of technology and allowed them to use several different forms of media, including music, photos, and written comments on the slides: As one Little Sister noted, “It’s just like a slide show, but it’s cool because you can add recordings and such.” This girl was pleased that she could make her story more interesting to others by including technology variations in the telling. Interestingly, many of the girls talked about being especially appreciative of having access to a digital camera. This was somewhat surprising since a previous survey of a similar sample of girls indicated that they all had access to simple technology like a digital camera (Newton, et al., 2010). Perhaps the YWLP HerStory project provided the girls with opportunities to use this technology in expanded ways, including as a venue for artistic expression or connection with another. For example, one Little Sister remarked, “I learned that I like taking pictures more as artwork than drawing them, and I like to be in the pictures as well.” Another Little Sister who liked using the camera to chronicle her relationship with her Big Sister said, “I really liked using the cameras to take pictures of us playing around or just hanging out outside of group.” Supported use of a digital camera in the YWLP HerStory project may have increased their comfort with digital photography and provided them with a broader understanding of the application of its technology.

Finally, the girls noted the importance of feeling supported while they were learning the new technology. A majority of the girls said that they liked that their Big Sisters were learning the technology with them and offering support. It may be that they were appreciative that the learning process was mutual and collaborative as opposed to hierarchical as teaching often is in middle school. However, feeling that their Big Sister could and would provide help when it was needed was also important. One Little Sister offered that, “I learned how to use the different technology, but my Big Sister was always there and made sure I had help when I needed it.” Many also reported that they liked having the time in
Interviews with the girls also revealed areas of the YWLP HerStory curriculum in which they continue to have difficulty. Some of the girls shared that the hardest part of the project was “not feeling secure with the technology.” They reported concerns about making a mistake or not knowing how to add a special effect that would make their story better. They added that they might have given up had it not been for their Big Sister’s enthusiasm and support. Others said that coming up with a topic was “the hardest part” for them and they worried that their topic “was not good enough.” Again, those who felt close to their Big Sisters said they appreciated their support and were able to work through their doubts about their topic.

*Mentor and Facilitator Focus Groups.* Interviewing the facilitators and Big Sisters participating in the YWLP HerStory project provided additional information about the technology curriculum. All reported that the curriculum was engaging and had achieved a good balance between mentoring activities (e.g., sister time, group discussions of “hot topics”) and technology activities. They were also pleased that the majority of the Littles in their group had completed their projects and expressed pride in having done so. Some suggested that the process of delineating steps for completing the digital story project may have helped them and their Little apply the same step-by-step strategy to completing other school projects (e.g., studying for a test). Both the facilitators and Big Sisters commented on the clarity of the training they received on the technology platforms and that having to create their own PhotoStory was a good strategy for their becoming comfortable in the application and nuances of the platform. They also appreciated an opportunity to deepen their connection with their Little by sharing with her their PhotoStory.

A majority of the Big Sisters shared that the process of helping their Little Sisters choose a project topic and execute editing details with the PhotoStory computer program continued to be the most challenging aspect of the program. For example one Big Sister shared, “You wanted each Little Sister to have the creative capacity to choose topics of interests, but there was also a need to steer them in a
direction where they could reach deeper.” Many said the process required shared input. In particular, they found it was helpful to brainstorm topic ideas with their Little Sisters, then, narrow down the topic, and, finally, identify its significance. This mutual problem-solving process facilitated the Little Sisters’ development of more personal PhotoStory topics. In addition, the facilitators and Big Sisters identified that showing the Little Sisters past PhotoStory projects as reference points was a useful strategy. By viewing these examples the Little Sisters were able to connect their beginning steps with a finished project.

Additional suggestions from the facilitators and Big Sisters highlighted the importance of breaking the project into steps that might help pairs make steady progress on their project and avoid last-minute rushing. For those Little Sisters who felt the project was too much like a school assignment, the facilitators and Big Sisters found it helped to work on it during pair one-on-one time rather than in the large group sessions. For example, a Big Sister shared that instead of having her Little Sister take pictures on her own for her topic, the pair used the photo task as an opportunity to promote sister time by taking pictures out in the community together. It appeared that the facilitators and Big Sisters needed to think creatively and be flexible about the project in order to engage their Little Sisters and meet the goal of a meaningful interactive learning experience.

*PhotoStory Completion.* As another indication of engagement in the technology curriculum, the number of technology projects completed this year was calculated and compared with completion percentages from previous years. For the YWLP *HerStory* pilot in the fall of 2008 that used the original curriculum, 14 out of 36 (39%) middle school girls participating in the program completed a PhotoStory project and in the YWLP *HerStory* pilot during 2009, 26 out of 43 (61%) middle school girls completed their PhotoStories. In comparison, 24 out of 29 (83%) middle school girls participating in the 2010 YWLP *HerStory project* completed their PhotoStories, suggesting that the participants found the curriculum significantly more engaging and manageable. The topics of their PhotoStories ranged but can generally be grouped into five categories. These categories are Family (e.g., loss of a family member, contributions of a family member to self or community), Friends (e.g., importance of friends, supporting
friends), Identity through Activity (e.g., achievement in sports, leadership through service), Values (e.g., nuances of own culture, power of faith), and Future Goals (e.g., plans for college, personal testimonies). Each digital story was showcased for invited family and friends at the end of the semester and each group selected one to showcase to the entire program at the end-of-year celebration. Many of the girls also made a copy of their dvd to share with family and friends at home.

Discussion

The HerStory curriculum was designed to increase girls’ knowledge, interest, and confidence in the field of technology by using technology as a platform to allow them to express their views about an important issue in their lives. Creating a computer-generated product they could share with a larger audience provides girls with an opportunity to develop a sense of competence as well as pride in their emerging technology skills. This study involved significantly revising the YWLP HerStory curriculum by changing content and structure with the aim of increasing mentee engagement and mentor training. Findings show that the YWLP HerStory curriculum revisions were successful in improving girls’ engagement in projects. This year there was a significant increase from the two previous years in the total percent completion of technology projects. This is likely a function of improvement in the technology training mentors received as well as a better balance of mentoring and technology activities within the weekly group sessions. Mentors’ own confidence in using technology may have made them more available to their mentors as technology problem solvers while increased opportunities for general mentoring activities (e.g., discussion of hot topics, service activities) likely contributed to the mentoring pairs’ sense of themselves as a team. It may be that girls are more likely to stay engaged with a technology curriculum that is scaffold for success and incorporates psychosocial issues of importance to them.

The girls participating in the YWLP HerStory project reported that they enjoyed learning new applications of informational technology and using it to tell a story of importance to them. As one Little Sister noted, “I learned that I am more independent than I thought I was. I feel more confident because of my PhotoStory.” In addition, creating a story of importance to them appeared to add to their sense of
themselves as a leader in their community. One Little Sister noted about the story she created, “The best part was letting everybody know that this [activity] was something you have a passion for doing. It’s something I like to do a lot, so I was glad to share.” Creating and sharing their stories through technology platforms may be a venue for girls to increase their competence in technology and find their “voice.”

Overall, our findings support those from other studies that indicate that middle school girls are interested in learning about technology and working with computers if given the opportunity, an engaging curriculum, and support (Sanders, 2005). Within the school environment, however, a perception of limited interest coupled with limited experience may play a strong role in distancing girls from taking advantage of opportunities to explore information technology. Over half of the eighth grade girls participating in the YWLP *HerStory* project group stated that they had not yet enrolled in a course in technology. Although technology courses are offered by most middle schools today, offering these courses as electives, rather than as mandatory courses, may inadvertently limit the number of girls who will be exposed to technology. Girls’ limited prior experience, lack of confidence in their ability to learn technology or perception that technology projects are uninteresting may be contributing factors.

**Limitations and Future Directions**

Conclusions from this study are limited by the study’s small sample size, lack of a control group, and reliance on qualitative data. A quantitative survey of the girls’ skills and interest in technology pre and post-program participation would provide a more comprehensive evaluation of the program’s impact on middle school girls’ sense of themselves as competent users of technology. Future evaluations of the YWLP *HerStory* project also would benefit from long-term follow up of the girls in the program, including the number of technology classes they take in high school and their career choices after school. Despite these limitations, this study adds to a growing body of research that suggests that middle school girls are neither inherently uninterested nor incompetent in the use of technology but, if they are to bridge the digital divide, may benefit from additional opportunities designed specifically for them that explore the application of technology to their interests.
References


Newton, S., Poppalardo, L., Clarke, J., Williams, K., Page, J., Schmidt, C., Vierbuchen, C., & Lawrence,


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