

Using Technology to Support Equity and Inclusion in Youth Library Programming: Current Practices and Future Opportunities

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ABSTRACT

This article extends prior work investigating public youth librarians' efforts to incorporate digital media technologies into youth programming. We conducted interviews and focus groups with 92 youth-serving library staff working in public libraries across the United States. Using connected learning as a theoretical framework, our analysis revealed various ways that technology is used in youth-focused library programming, providing youth with opportunities to collaborate with peers and adults, to pursue their interests, and to exercise creativity through production-centered activities. Our analysis also revealed specific challenges facing public youth librarians in their efforts to leverage digital and networked technologies to create equitable, inclusive learning environments. This article contributes new empirical evidence demonstrating the specific roles that librarians can play in creating rich, technology-enabled environments for diverse youth patrons and the resources and supports librarians need to succeed in their efforts.

Public libraries have long been sites of learning, inviting patrons from all backgrounds to explore their curiosities and interests. Increasingly, these explorations are supported by digital and networked technologies, which offer unprecedented opportunities for people to access, create, and share information.

Well-resourced libraries in affluent neighborhoods are typically the best positioned to offer rich, technology-enabled learning experiences (Braun et al. 2014). Exceptions exist, such as the YOUmedia model developed by the Chicago Public Library and the Digital Youth Network (Larson et al. 2013), but there is a considerable way to go before libraries nationwide are able to incorporate digital and networked technologies effectively into youth programming.

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To achieve this goal, we must understand how public youth librarians across the country currently use technology in their youth programming, the challenges they face, and the resources they have or lack. To address this need, we conducted interviews and focus groups with 92 youth-serving library staff working in rural, urban, and suburban neighborhoods across 41 states and the District of Columbia. We asked these librarians to describe their current youth programs, their use of digital and networked technologies, and their struggles as they plan and implement technology-enabled learning environments.

In our prior work (Scaff et al. 2017), we reported preliminary results from an analysis that used the connected learning framework developed by Mizuko Ito and colleagues (2013) to document public libraries' current approaches to youth programming. The current article extends this work by offering an in-depth account of the successes and challenges that public youth librarians discussed in relation to their efforts to leverage digital and networked technologies to create equitable, inclusive learning environments. We offer suggestions on using our findings to support ongoing and future efforts in this area.

Previous Work and Background

Theoretical Context

The connected learning framework developed by Ito et al. (2013) serves as the theoretical basis for this work. The concept of connected learning centers on an equity agenda of leveraging openly networked technologies to enable young people who may otherwise lack access to rich learning experiences. Grounded in sociocultural approaches to learning (Vygotsky 1978; Lave and Wenger 1991), the connected learning framework promotes learning experiences that engage young people in creative activities that are driven by their interests and supported by peer and adult relationships. The framework is also informed by earlier work of Ito et al. (2009) that identified increasingly deepening levels of interest-driven participation: hanging out, messing around, and geeking out (HOMAGO). Digital and networked technologies are used to support such learning experiences and to overcome the participation gap (Jenkins et al. 2009) in which youth of different socioeconomic backgrounds experience unequal access to the skills needed to use digital tools effectively. Further influenced by research on informal learning (e.g., Barron 2006; Kafai, Peppler, and Chapman 2009; Ahn et al. 2014), connected learning posits that out-of-school learning experiences can offer young people chances to deepen their interests and connect to academic and career opportunities, access tools and expertise, and form a sense of belonging to communities of practice (Lave and Wenger 1991).

Connected learning promotes connections across three learning spheres: interest-driven, peer-supported, and academically oriented learning (Ito et al. 2013). Interest-driven learning draws on young people's existing interests, passions, and curiosities, using them as a basis to create personally relevant and engaging learning experiences (Barron 2006). Peer-supported

learning actively incorporates youth's peer cultures into learning environments, recognizing the value of learning from and with one's peers. Learning that is academically oriented allows young people to connect their informal learning experiences to formal educational, civic, and employment opportunities. Learning environments that connect these learning spheres "ideally embody values of equity, social belonging, and participation" (Ito et al. 2013, 8) by tapping into and celebrating the funds of knowledge (Moll et al. 1992) within young people's lived experiences, communities, and cultures.

The three learning spheres of connected learning are complemented by three core properties. Connected learning environments are production centered, leverage openly networked infrastructures to facilitate learning, and bring together young people and adults around a shared purpose (Ito et al. 2013). In production-centered learning environments, young people learn by doing and making, whether programming an original game in Scratch, writing fanfiction stories, or creating "smart clothing" with e-textiles (Kafai et al. 2009). Openly networked infrastructures make it possible for youth to share their creations with audiences of import, such as peers, parents, teachers, community members, and domain experts. Learning centered around a shared purpose engages adults and youth in a community of practice marked by novices working alongside and learning from experts (Lave and Wenger 1991). These core properties can increase equity and access for students by offering several pathways to learning, inspiring civic engagement, and making learning meaningful to each individual (Ito et al. 2013).

Libraries as Sites of Connected Learning

In light of the constraints facing many public schools today, such as high-stakes testing, a lack of adequate teacher preparation, and insufficient resources, out-of-school learning environments such as libraries have emerged as promising spaces for engaging young people from a variety of socioeconomic and cultural backgrounds in rich, connected learning experiences (Resnick et al. 2009; Ito et al. 2013; Braun et al. 2014; Davis and Fullerton 2016). Examples of successful out-of-school programs include Computer Clubhouses, which began as a way to empower youth to learn through design experience and participation in an active community of learners (Rusk, Resnick, and Cooke 2009). The influential after-school Fifth Dimension Project tapped into the local community to provide peers and mentors for young people (Cole and Distributed Literacy Consortium 2006).

Libraries represent an out-of-school context ripe for engaging youth in connected learning experiences and promoting equitable learning (Braun et al. 2014; Hill, Proffitt, and Streams 2015; Sin and Vakkari 2015). Librarians are particularly well positioned to serve as "media mentors" who help youth and their families navigate today's sometimes overwhelming digital media landscape, identify high-quality information, and craft engaging learning experiences (Subramaniam et al. 2012; Guernsey and Levine 2015). With its focus on bringing mentors

and youth together to collaborate on production-centered “signature projects” (Austin et al. 2011; Ito et al. 2013), the YOUmedia program in the Chicago Public Library is a pioneering example of the suitability of libraries for supporting the three spheres and three core properties of connected learning (Barron et al. 2014). The learning labs modeled after YOUmedia are further examples of public libraries engaging diverse youth in production-centered activities that support connected learning (Koh and Abbas 2015; Bowler and Champagne 2016; Steele et al. 2016).

Despite an increased focus on equitable, innovative learning through technology-enabled environments, research demonstrates many obstacles to ensuring that all youth have access to such learning spaces. For instance, although digital and networked technologies may afford new learning opportunities, not all youth have the capacity to leverage these tools fully (Jenkins et al. 2009; Ito et al. 2013). A main concern is providing access to technology along with the appropriate support for peer and mentoring connections to reach nondominant youth (members of diverse cultural groups that have traditionally been excluded from sources of institutional power and privilege; Gutiérrez and Rogoff 2003; Jenkins et al. 2009; Ito et al. 2013). While connected learning environments provide youth with opportunities to experiment with technology, scholars emphasize the challenge of facilitating experiences with digital and networked technologies that go beyond personal use and connect youth to a larger community (Jenkins et al. 2009). Additional challenges include the sustainability of these connected learning environments, clarity concerning staff roles, and maintenance of resources over time (Austin et al. 2011; Valdivia and Subramaniam 2014). Creating and sustaining these learning experiences will require continual professional support and connections for educators interested in applying connected learning approaches in their work with youth (Rusk et al. 2009; YALSA, 2017).

This Study

Although recent scholarship has positioned libraries as ideal spaces to implement connected learning (e.g., Braun et al. 2014; Martin 2015), we lack empirical research showing how public youth librarians across the country currently incorporate connected learning into their youth programming, including the opportunities and challenges they face in their efforts. We began to address this research gap through a poster presentation that reported preliminary results from a thematic analysis of interviews and focus groups conducted with 92 youth-serving public library staff (Scaff et al. 2017). These results revealed that a high percentage of librarians were already incorporating technology into their youth programming and that many—but by no means all—of these efforts aligned with connected learning principles. Our results also revealed a number of challenges associated with librarians’ efforts. The current study extends this work considerably by providing more comprehensive treatment of these themes and presenting additional themes not previously discussed. Two research questions guide this study:

(1) What kinds of technologies do youth-serving public librarians and staff employ in their youth programming, and to what uses do they put these technologies? (2) What opportunities and challenges do they face with respect to implementing connected learning in their youth programming?

Method

Context

The current study is part of a larger initiative (ConnectedLib, <https://connectedlib.ischool.uw.edu/>) to create a professional development toolkit that is intended to build public youth librarians' and staff's capacity to introduce connected learning principles in their youth programming. This collaborative initiative involves two universities (University of Washington and University of Maryland) and three public library partners (Kitsap Regional Library, Providence Public Library, and Seattle Public Library), all located in the United States. This article reports findings from the first year of the study.

Participants

We recruited 66 youth-serving librarians and library staff working in public libraries across the United States to participate in semistructured interviews. Another 26 youth-serving librarians and library staff took part in three focus groups, led by our partner librarians, during the Young Adult Library Services Association (YALSA) Symposium in November 2015, the American Library Association (ALA) Midwinter Meeting in January 2016, and the Maryland/Delaware Library Association Conference in May 2016. For both the interviews and the focus groups, we recruited participants via social media, our project website, our partner librarians, YALSA's e-newsletter, and printed brochures handed out at the YALSA and ALA symposiums and by asking state librarians to forward the recruitment emails to relevant people in their states. Interested youth-serving librarians and library staff signed up to participate in the study through a confidential online form. Collectively, study participants represent 41 states and the District of Columbia. Librarians self-reported the populations that they serve: 37% indicated that they serve urban populations, 33% serve rural populations, and 28% serve suburban populations, with one librarian self-reporting that she serves all populations. All regions of the United States are represented: 16% from the Northeast, 27% from the Midwest, 30% from the West, and 19% from the South. Their work experience ranged from 1 year to 33 years (median = 5 years; mean = 7.5 years).

Data Collection

Interviews were conducted between December 2015 and May 2016, and each interview lasted approximately 60 minutes. Most interviews were conducted over the phone with a few conducted in person. In the interviews and focus groups, we asked participants to describe the youth populations they serve, the programs they offer, how they use technology, whether

their programs offer youth opportunities to build things or collaborate with other teens and adults, how their programs align with school curricula, and how much their programming is driven by youth interests. We also asked participants how they approach the development of youth programs, the resources they draw on, and the successes and challenges they face in implementing these programs. The focus groups followed the same interview protocol as the one-on-one interviews.

Data Analysis

The interviews and focus groups were audio-recorded and transcribed verbatim. We employed thematic analysis (Boyatzis 1998) to create a coding scheme aligned with our research questions and Ito and colleagues' (2013) connected learning framework. We ensured that the codes were applied consistently and accurately to the entire data set by conducting regular collaborative discussions throughout the iterative process of coding (Smagorinsky 2008). In the first stage of coding, two researchers separately coded a single interview transcript. All researchers came together to discuss the codes applied and came to consensus on code definitions and applications. In the second stage of analysis, two other researchers independently applied the established codes to another transcript and calculated Cohen's kappa statistics for each code (average: $\kappa = .76$, range = $.31-1.00$). They discussed areas of disagreement until they reached consensus on all coded excerpts. The researchers repeated this process three times until they achieved satisfactory levels of reliability for all codes (average for final round of coding: $\kappa = .98$, range = $.76-1.00$) (Landis and Koch 1977). Once this reliability check was complete, the two researchers who were involved in the second stage of analysis divided the codes between them and coded the transcripts independently using the qualitative analysis software Dedoose. Researchers met regularly to discuss the coding progress and kept analytical memos while coding the transcripts. They took notes on themes that appeared frequently, linked librarians' responses to the research questions, and observed how connected learning elements fit within librarians' reported activities.

Results

Research Question 1

Of the 66 youth-serving librarians and library staff we interviewed, 98% (65) said they use some type of technology in their youth programming. Only Mary (all names are pseudonyms), who works in a rural, southern library, shared how they "don't use much technology at all" because of a lack of funds. When interview participants described their current youth programming, nearly half of these descriptions (48%) included some mention of technology. Similarly, among the 26 youth-serving librarians and library staff represented in focus groups, 69% (18) brought up some form of technology when discussing their current programming.

Our analysis revealed that youth-serving librarians and library staff are incorporating a variety of technologies into their youth programming, including design and editing software and equipment, coding and programming resources and technologies, 3D printing software and equipment, gaming software, and building kits used for creating digital devices. Other frequently used technologies include laptops or tablets loaded with e-books, audiobooks, or design and editing software to allow for mobility throughout the library. Our participants mentioned desktop computers less frequently in relation to programming activities. They were also less likely to use specific networked and social media technologies, such as Facebook and Twitter, within their programming. However, some participants found success using photo and video sharing applications such as YouTube and Instagram to encourage youth to share their work or to enable production skills. Many youth-serving librarians and library staff described technology-enabled learning environments such as digital labs and makerspaces as areas for young people to access these digital tools and equipment.

Youth-serving librarians and library staff offer both structured and unstructured uses of technology. For instance, while many libraries provide gaming equipment like Wii and Xbox, they also feature technology in more directed programs aimed at building STEAM (science, technology, engineering, arts, and math) skills. Moreover, they provide youth with access to both active and passive uses of technology. Passive forms include movie viewing, playing around with apps on iPads, and watching YouTube clips. More active uses involve working with design and editing software to create graphics and movies, building structures and worlds in Minecraft, and using online coding and programming resources such as Scratch.

Connected Learning and Technology Use

Our analysis indicated that many youth-serving librarians and library staff are already using technology in a way that supports the different spheres and core properties of connected learning. Although they did not typically make explicit reference to the spheres and core properties of connected learning, we were able to infer such connections through their detailed descriptions of programming and technology use at their library. For example, Sharon, who works in an urban, western library, explained in an interview how the skills that youth developed in her library's DJ program touch on production-centered, openly networked, peer-supported, academically oriented, and interest-driven elements simultaneously: "In the DJ program, number one, they learn how to DJ [interest-driven] and learn all the technology and software [production-centered], but number two is that something they can relay back to school with, they become confident in themselves. Another learned lesson is when they are using the microphone making announcements they enhance their public speaking skills [academically oriented]." Sharon further described how providing access to industry-standard DJ equipment and networked technologies such as SoundCloud (openly networked) through her library's learning lab offers "a lot of opportunities to collaborate. There's a lot of flexibility

to hang out. There's a lot of freedom [for teens] to express themselves without being threatened [peer-supported]."

Of the six connected learning spheres and properties, the openly networked and production-centered properties were discussed most frequently in conjunction with some form of technology use. For instance, Janet, a librarian working in special collections in urban, northeastern libraries, described in an interview the affordances of openly networked photo- and video-sharing applications to exhibit work created in her programs: "So we do a lot with social media, we encourage the kids when they come in, 'share via social media' . . . And I think the teens sharing it with other people, other teens, can use technology in order to do that. So it has a bit more impact than just coming from a teacher or coming from an adult." With respect to production-centered uses of technology, Maddie shared in an interview how her rural, western library offers a making program: "We did the LED [light-emitting diode] card that was able to diffuse different scrap pieces. We tore up a Christmas string of lights and we reused those LEDs. We've done vibrobots where we had little vibrating motors attached to batteries. . . . We've done conductive apples, using apple, fruit, and potted soil and water to do various electricity experiments . . . powering a little clock and powering LED or making a little sound and amplifying it with a paper cup."

Research Question 2

As mentioned, youth-serving public librarians and staff offer many types of programming and technology-enabled learning environments that represent an amalgamation of all or selected connected learning spheres and properties. This section reports our findings on the opportunities and struggles that these librarians face as they conceptualize, plan, create, and sustain these programs and environments. We share the salient opportunities and challenges that emerged from our analysis that epitomize issues of equity in connected learning environments.

Opportunity 1: It Takes a Village to Raise a Teen

Youth-serving librarians and staff are very successful in seeking community partners that can assist them in co-planning and co-implementing technology-enabled or technology-infused programming. These partners include youth-serving organizations such as local after-school programs, state libraries that provide technical and staff assistance to libraries within the state, makers in the community, local schools, other informal learning spaces such as museums, businesses, nonprofits, authors, and individual community members with technical expertise such as animation, coding, game design, and filmmaking. Karen, who works in an urban library in the Midwest, described how she actively seeks partnerships by "see[ing] what other people in town are doing, and how we can work together." This approach saves time and money and allows librarians to offer technology-infused programming for which they lack expertise.

Such partnerships make it possible for young people to access technology they lack at home, learn new digital literacy skills, build their college and career readiness skills, explore their interests, gain exposure to STEM (science, technology, engineering, and math) careers, participate in enrichment programs that their families otherwise cannot afford, and sometimes bring their favorite programs to their backyards when community organizations host programs in partnership with local libraries. In addition, library partnerships with individuals such as authors or experts who live outside of the young people's community transform traditional programs such as book clubs and sewing clubs into technology-enabled learning environments. For example, Paul, who works in a rural, northwestern library, shared in an interview that "each week we . . . do a live stream and then the students are able to chat with us . . . using Edmodo. We recently had an author from British Columbia that was able to join us through Google Hangouts on Air, and we also have several school teachers and several librarians from our area that have acted as moderators for those chats . . . infusing that technology into the typical idea of a book club." Creating such technology-enabled environments where youth can interact with one another in real time during an author's virtual visit mitigates issues of transportation for youth to get to the library.

Opportunity 2: Giving What Young People Want

Librarians strive to develop connected learning experiences through young people's interests. They create programming by "ask[ing] the teens what they want" (Mary, rural, southern librarian) and setting up "teen advisory boards" that allow youth to take leadership in creating and implementing teen programs. Danielle, who works in an urban library in the West, described one of her big successes as "working with teens that really put a lot of effort in creating different coding programs, robotics programs [for other teens at the library]" and had their efforts subsequently recognized by their city hall. These coding programs were implemented at multiple branches within their library system.

Youth-serving public librarians and staff are also mindful to offer interest-driven opportunities that fit the needs of young people who have transportation, scheduling, or technology-access issues because of their living arrangements or geographic locations. For example, Elena, who works in a rural library in the Midwest, shared in an interview that "I have the foster care kids, who don't have an Xbox at the foster care home. So, they come play Xbox." She further shared that "some rural kids who live 30 miles out can't come to something after school. But they're coming into town on Saturday to do some shopping, and so they come play video games so they don't have to go to the egg show or the cattle auction with mom and dad."

Opportunity 3: The Caring Media Mentor

Many youth-serving librarians and staff we interviewed stressed the importance of "building relationship with teens . . . and getting to know them as they grow up" (Christine, urban,

western librarian) and “getting their kids to feel comfortable [at the library]” (Paula, suburban, northeastern librarian). They frequently referred to themselves as a friend or a caring grown-up to their young patrons. In alignment with the core property of shared purpose in connected learning, youth-serving public librarians and staff often embraced the role of media mentor by collaboratively learning or exploring a new technology with their youth patrons. They shared instances whereby teens introduced them to newer social media platforms, such as Snapchat and Kik, and scenarios in which young people came to them to learn technologies with which the librarians were not familiar. Librarians embraced these opportunities to learn together by seeking out another librarian or expert who could help or by exploring YouTube videos or books together with teens. Amanda, who works in a rural, northwestern library, summarized her role as a media mentor: “I feel like media mentorship encompasses three points. One of those is programming. One of them includes media advisory, so that takes reader advisor . . . to the next level . . . but the other one is providing public access [such as] library Minecraft accounts; those are pretty costly so a lot of families can’t afford those.” Ultimately, youth-serving public librarians and staff acknowledged that their relationships with teens take precedence over the type of programming or technology that they offer at their libraries. As Jill, who works in a northeastern area library, noted in an interview: “If they [librarians] have a bond with the teens and the teens really respond to them, they can offer any work-shop and the teens will go to it because they have a connection with the person leading it.”

Challenges

Although we found ample evidence that lack of funds, time, staff, training, and space serves as a persistent challenge facing librarians in implementing full-fledged connected learning at their libraries, such challenges prevail in many informal learning contexts. Consequently, we decided to focus on sharing the challenges that are directly linked to one or more elements of connected learning.

Challenge 1: Openly Networked Struggles. Of the six spheres and properties of connected learning, youth-serving public librarians and staff struggle the most with openly networked infrastructures, although this core property of connected learning was discussed most frequently in the interviews and focus groups in conjunction with some form of technology use in the library (see research question 1). Youth-serving public librarians and staff find it difficult to use social media or other networked technologies to make connections to young people’s lives outside the library. Access to networked technologies emerged as a core challenge that nondominant youth continue to face, despite many libraries providing such access. Our participants explained that getting to the libraries to engage with openly networked technologies and programming is often an issue for young people who rely on public transportation or on parents whose schedules are full or unpredictable.

While participants acknowledged the potential for openly networked technologies to foster learning, their openly networked activities are often hampered by restrictive library policies. As Lisa, a librarian at an urban, northeastern library, explained in a focus group, “We have a communications department that controls the library’s social media. So I can’t have Twitter and use it for the library. I am not allowed to.” When library policy does allow for the use of openly networked platforms, librarians’ lack of comfort with social media halts the use of such networked technologies. Dawn, who works at an urban library in the Midwest, shared her observation in an interview: “I don’t think we’ve done the best job of incorporating it [social media] into programming. I think it’s something that we continue to struggle with what’s the best way and how do you keep it current and how do you keep their [youth’s] involvement and their interest up. So many of them have moved to Snapchat and I really can’t figure out how to harness the power of Snapchat for the library.”

Challenge 2: “Digital Petting Zoo” versus True Connected Learning. Youth-serving public librarians and staff observed that there is a difference in learning outcomes between introducing young people to a particular technology and creating learning environments that foster HOMAGO. These experiences deepen young people’s levels of interest-driven participation in ways that are meaningful for them. Paul, who works in a rural, northwestern library, summarized this point succinctly in an interview: “When we’ve done those more educational programs, most of the time they [are] focused on exposing the kids to the technology . . . but we haven’t found an effective vehicle for giving kids access to those tools and having them learn and experiment with their peers.” We identified two main reasons from our analysis why youth-serving public librarians and staff struggle to provide HOMAGO opportunities. First, they are accustomed to a professional training model in which library programming centers around talking to an audience (i.e., story time or demonstration of a technology/service). In contrast, the connected learning model requires librarians and staff members to leap into an uncharted territory of “these are some tools that you might need, but . . . it’s your [young people’s] job to experiment, it’s your problem to solve, your job to critically think. I’m here to guide you” (Paul, rural librarian in the Northwest). Second, librarians are uncertain of “what to do with the technology beyond” (Michelle, urban librarian in the Northwest) just presenting it to young people, indicating the core problem of not understanding the principles of connected learning or how to create technology-enabled environments based on connected learning spheres and properties.

Challenge 3: The Mentoring Conundrum. Youth-serving public librarians’ and staff’s lack of experience with certain technologies and lack of confidence in their ability to serve as mentors in technology-enabled environments repeatedly emerged as challenges in our analysis, despite their ability to serve as caring media mentors (see research question 1). Many of the participants we interviewed expressed uncertainty about executing the full potential of

shared-purpose, production-centered, or peer-supported connected learning elements when working with technologies. Jamie, who works in a suburban library in the Midwest, stated, “for the robotics and Raspberry Pi’s, I rely heavily on the instructor. I personally am not fluent with either one of those technologies. . . . I think a lot of what is holding us back is having staff that is well versed in how to use them and really have ideas on how to implement them.” Beyond the challenge of facilitating rich learning experiences with digital media, librarians indicated that weaving design thinking into these learning experiences was also challenging. Jessica, who works in a rural library in the Midwest, observed in an interview, “It’s getting them to actually sit down and say, ‘We wanna play Wizard Chess.’ How would you go about doing that? Just making them think through the steps. And so my having to think through the steps ahead of them is my challenge, especially when it happens on the fly.” This statement represents a clear indication of how youth-serving public librarians and staff struggle with how to ask the right questions so that young people pursue and solve a problem on their own.

Discussion

The current investigation represents the first study to investigate systematically the efforts of youth-serving public librarians and staff across the United States to provide technology-enabled learning experiences for their youth patrons that align with the connected learning framework of Ito et al. (2013). We chose to focus on public libraries because of their position as social institutions with a historic focus on learning and promoting access, equity, and inclusion for all members of a community. Through interviews and focus groups with 92 youth-serving public librarians and staff, we investigated librarians’ current uses of technology, as well as the challenges they face in their efforts to incorporate digital and networked technologies into their youth programming. This article contributes new empirical evidence demonstrating the specific roles that librarians can play in creating rich connected learning experiences for diverse youth patrons, as well as the resources and supports they need to be successful in their efforts.

Among the key findings, we found that technology use is ubiquitous in library youth programming: 98% of the youth-serving public librarians and staff we interviewed described some form of technology use, such as providing production-centered activities, opportunities to code, and free access to digital tools and equipment. We found that many participants are aligning their programs with a connected learning-influenced vision of library services for teens promoted by organizations such as YALSA and the Institute of Museum and Library Services (Braun et al. 2014; Hill et al. 2015). Using Chicago’s YOUmedia program as a model (Austin et al. 2011; Larson et al. 2013), several libraries have created learning labs that use technology to engage youth in interest-driven activities involving music, gaming, writing, and design. Youth-serving public librarians and staff also discussed ways to embrace their role as media mentors

(Guernsey and Levine 2015) and their efforts to form community partnerships when they encounter limits to their technical expertise.

Our analysis also uncovered three main challenges that youth-serving public librarians and staff face with respect to incorporating connected learning principles into their youth programming (beyond the persistent challenges of limited money, staff, and space; Scaff et al. 2017). Although our analysis uncovered several examples of librarians taking advantage of openly networked infrastructures in their youth programming, openly networked struggles are common in libraries serving nondominant youth (Davis and Fullerton 2016). Youth-serving librarians and staff sometimes do not even have access to the social network tools they need because of library policy. Providing experiences that go beyond a “digital petting zoo” and promote true connected learning is also challenging. While youth-serving librarians and staff understood the importance of providing digital tools, they were often unsure about how to design or facilitate technology-focused programming. These issues align with previous research on the challenges of understanding how to use media, such as digital and networked technologies, for greater purposes and connections (Jenkins et al. 2009). This uncertainty bled into the librarians’ relationships with their youth patrons, leading to the mentoring conundrum. While existing research calls for librarians to promote the connected learning framework (Braun et al. 2014; Martin 2015), our research indicates that more work should articulate how librarians—especially those working with limited resources and underserved populations—can design programming that embraces all spheres of connected learning.

Our research findings point to potential actions that library administrators and educators should consider to support youth-serving librarians and staff in fostering connected learning in their libraries in a way that tackles issues of equity and inclusion. Technology access is still an issue for many nondominant youth. Library administrators can investigate ways that access to openly networked technologies can be made available inside and outside of the library, for example, through hotspot initiatives (a program to lend free Wi-Fi hotspots to library cardholders) and loans of devices that have built-in internet connectivity. Library administration must also address restrictive social media policies. For instance, while Facebook and Twitter are often used for marketing purposes, policies regarding more production-centered platforms like Instagram and YouTube should strive to offer greater flexibility and control to librarians. Library administrators can reach out to professional organizations such as YALSA and their state library agencies to seek assistance in training their library staff in specific topics, such as media mentoring skills, design thinking, and other twenty-first-century skills training. Library educators should include connected learning frameworks in their courses for preservice librarians and consider offering professional development courses for in-service librarians, with a particular focus on developing and implementing full-fledged connected learning programs that are able to reach out and engage nondominant youth.

Limitations and Future Directions

Our participants included representation across the United States, from small to large libraries and from rural to urban areas, with great variability in years of experience working in a library. This diversity represents a strength of the current study. Given the voluntary nature of participation, however, it is possible that the youth-serving public librarians and staff we interviewed brought a preexisting interest and investment in connected learning and digital and networked technologies. Youth-serving public librarians and staff who are less comfortable with digital and networked technologies and connected learning may be underrepresented in this study. Drawing on the challenges and themes that emerged from our analysis, we are now creating a professional development toolkit aimed at supporting public youth librarians in their efforts to leverage digital media and connected learning principles. Preliminary content and modules developed will be vetted through participatory design sessions with youth librarians who have varying experiences with connected learning and through direct observations of how these librarians implement the modules in their professional contexts.

Conclusion

The current study offers new insights into youth-serving public librarians' and staff's approaches to planning, creating, and implementing technology-enabled learning environments that align with connected learning principles. Although libraries represent promising sites for connected learning experiences that promote equity for today's youth, our findings show that librarians and library staff struggle with how to successfully embrace all connected learning spheres and principles. Aware of their limitations, they simply do not have the knowledge, skills, or sufficient training to create and implement successful and sustainable connected learning environments for their youth patrons. This research points to several specific needs, including (1) a research-practice partnership (Coburn and Penuel 2016), which involves a close collaboration between researchers of learning and information sciences and librarians to develop these connected learning environments together; (2) just-in-time training that in-service librarians can take advantage of when they need assistance with specific core spheres and properties of connected learning or the overall connected learning framework (e.g., the one we are currently developing in the next phase of this project); and (3) a more exhaustive preservice librarian training curriculum that focuses on creating and promoting equitable connected learning experiences for nondominant youth. Future research can also investigate the challenges and opportunities that youth encounter as they participate in connected learning programs in libraries, which can further inform the training that librarians need to implement successful connected learning programs.

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