Connected Learning, Librarians, and Connecting Youth Interest

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Abstract

The purpose of this ethnographic study is to understand connected learning of youth in online communities and how these findings can influence the practice of librarians to support youth learning. Drawing from a two-and-a-half-year ethnography, I present data that was coded using the connected learning framework. This study provides insights into the role that librarians can play in the larger learning ecologies of youth. Finally, this paper gives practical implications for librarians based on the actions of youth, using a holistic approach to youth learning. It identifies librarians as ideal mentors to help youth connect their learning from interest spaces to academic and career spaces, allowing them to receive value and recognition for their skills and abilities.

Introduction

Maria, a sixteen-year-old a participant in the study who was living in the Philippines, shared many interests that were popular among young women her age. She used social media, read and wrote fan fiction, and talked about boy bands in online forums. Very few of Maria's friends knew that she was also a passionate professional wrestling fan, and those who knew did not support her interest. Her parents thought professional wrestling was "an interest that [wasn't] fit for a girl," and her friends made fun of her and called her "tomboy." These attitudes caused her to seek out "a community that wouldn't judge [her] as a Wrestling fangirl." She discovered *The Wrestling Boards*, an online forum for professional wrestling fans. It offered Maria both a place to display her passion and vast opportunities for learning supported by fellow fans. She began participating in the community's fantasy wrestling federation, which is essentially a text-based role-playing game, where she wrote narratives of wrestling matches for the federation. After several months and with some hesitation, Maria decided to tell her English teacher about her participation and writing in the fantasy wrestling federation. To her relief, he supported her out-of-school writing on the professional wrestling forum. With her teacher's support, she pursued

writing for the school newspaper, and, as her graduation approached, she decided to pursue a medical-scholarship program because of her grades and to pursue writing as a second degree.

This paper explores connected learning of youth in informal spaces, such as Maria's writing activities on *The Wrestling Boards*. Libraries are a nexus for informal learning, offering interest-driven programming with the support of a librarian. Youth learning allows researchers to determine ways in which librarians can support youth connected learning.[1] Current research provides a rich source of examples of meeting youth learners where they are, the benefits of peer learning, the power of production and creation, and the importance of recognition. These are all tenets of the larger learning framework called "connected learning," and this paper demonstrates what this framework can offer to youth when augmented with the support of librarians.

Literature Review: Learning, Interests, and Libraries

To explore connected learning in libraries and what librarians can do to foster connected learning experiences for youth, it is important to have an idea of the context of formal and informal learning and of the challenges that face youth in terms of learning and achievement. This brief literature review will orient the reader to these issues and give an overview of the nascent area of study where connected learning and libraries intersect.

Learning and School

In-school education is beginning to change in its approach to include technology skills and interest, even if the change is happening slowly. Among U.S. K–8 teachers, 55% let students play digital games in their classrooms once a week,[2] and a majority of classrooms have some sort of Internet access, even if it is limited or slow. However, the level at which youth are able to use media or bring their interests into classrooms varies vastly. Even classrooms with relatively high access to technology have mixed levels of success when it comes to effectively supporting youth connection between interest and learning.[3]

Overall, despite the slow change that has begun, the state of education still has room for improvement. A majority of students fail to reach proficiency in math and science, and many are taught by teachers who lack content expertise.[4] One National Academy of Science report—which describes the deficiencies of public schooling in reference to twenty-first-century

preparedness and STEM (science, technology, engineering, and math) learning—supports a transition to inquiry-based learning, along with statewide specialty high schools.[5] The United States, despite having the largest population between five and nineteen years old, is outpaced by other G-8 countries in reading, mathematics, and science.[6] According to a National Assessment of Educational Progress report, less than one-third of eighth-graders are proficient in mathematics and science.[7] However, test scores do not tell the whole story,[8] and many challenges—including teacher preparedness, youth opportunity to develop interest, and school funding levels—all play a role in youth success in formal learning environments.

Challenges

Many challenges stand in the way of youth learning. School funding is one challenge that affects youth. School funding can affect class size, teacher quality and retention, access to learning materials and technology, and the type of curriculum offered.[9] Many students also face the challenge of having teachers who are ill-prepared to teach the subjects they are assigned. The National Academy of Sciences has found that one-third to two-thirds of teachers are not certified or did not major in the classes they teach in English, sciences, and mathematics.[10] Youth also disengage with school because it does not seem relevant or interesting to them. *The Silent Epidemic* reports that 81% of dropouts said that they did not feel that school was relevant to them,[11] and 47% of dropouts said that classes were not interesting.[12] Schools such as Quest to Learn, which is student-centered and game-based,[13] combines an in-school environment with contemporary approaches to learning. This school is an active learning environment, providing ongoing feedback and adaptive levels of challenge. However, schools of this type are still the exception.

Other issues of equity remain in terms of access and support for technology for many youth, such as access to high-speed Internet and computers in school as well as access to science and technology programming both in and out of school. A report released by the Girl Scouts of America indicates that girls who are interested in STEM and the potential of STEM careers are more likely to have participated in "hands-on science activities, gone to science/tech museums, and engaged in an extracurricular STEM activity."[14] This finding suggests that basic exposure can help youth realize entirely new interests and potential future paths. A report from the

National Women's Law Center offers several suggestions to help eliminate educational disparity, which include "increasing access to educational opportunities that promote diversity and reduce racial isolation" and "ensuring access to curricula that will help students build strong academic foundations . . . such as STEM courses and courses . . . that develop critical-thinking, reading, and math skills."[15] It also states that schools need to "improve extracurricular opportunities and participation among African American girls" and to "improve STEM opportunities and achievement for African American girls."[16] Here again we see the importance of supporting interests and out-of-school learning in creating academic and future success.

Youth and Learning

Youth exposure to a variety of experiences can have profound effects on youth interests and their approach to career and future pathways. Beach and Bruce suggest in an empirical study that youth use technology as part of critical inquiry.[17] Youth use the technology available to them to search for information that they need when information needs arise. This finding is reiterated in a study by Martin that uses information-horizon maps to illustrate how youth approach information needs.[18] Martin demonstrates that youth vary their approach and the resources they use depending on both their information needs and their level of expertise on a topic. Youth-initiated information seeking is tied to youth aspirations for learning and skill development, as Martin demonstrates among *World of Warcraft* players and professional wrestling fans.[19] In science learning, students had aspirations for learning that were tied to outcomes that directly affected them or inspired them.[20] These interests and aspirations for learning cross the lines between what would traditionally be considered formal and informal learning, and they highlight again the influence of technology on youth learning approaches.

Recent studies have shown that many youth participate in what would be considered traditional academic pursuits outside of school, such as reading and writing. About 81% of U.S. sixteen- to twenty-nine-year-olds read for work/school, 76% read for pleasure, 73% read to keep current with events, and 81% read to research topics on the Internet.[21] Youth dedicate the same amount of time to Internet usage for finding resources for interest and academics, as to reading in all formats, both analog and digital, which demonstrates the embeddedness of the digital in daily practices. On average, eight- to eighteen-year-olds spend 7 hours, 38 minutes using entertainment media across a typical day, which totals more than 53 hours per week.[22] Because

this demographic spends so much of that time multitasking—using more than one medium at a time—they are able to fit 10 hours, 45 minutes' worth of media content into roughly 7.5 hours.[23] Of this total media time, youth spend, on average, 49 minutes per day playing video games, which is nearly the amount of time they spend doing homework (50 minutes).[24] This research shows how deeply that technology and learning are intertwined in the lives of youth, not just in school but in academically relevant activities outside of school.

Informal Learning

Informal learning contexts change the nature of how people develop knowledge through individual agency, sociality, and temporal fluidity.[25] A large body of research exists exploring how and what youth learn in completely informal spaces such as fan fiction and video game communities. This research has demonstrated that youth develop math, science reasoning, literacy, reading, and information literacy skills through participating in the online communities around their interests because of access to peer support and online resources. Martin[26] found that in the online community of *World of Warcraft*—a massively multi-player online game—players develop and use a variety of information-literacy skills in order to navigate the vast *constellation of information*[27] that exists around the game, solving a variety of complex problems through use of resources and peer support. A reading study conducted by Steinkuehler showed that youth who struggled to read at grade level in school were able to read at and above grade level with accuracy rates in the mid- to high 90% range when given reading materials on topics they cared about for *World of Warcraft*.[28] Similarly, English language–learning youth used fan fiction writing as a way to improve their English through practice in a low-stakes, interest-driven situation with the support of peers who provided critical, constructive feedback.[29] Steinkuehler and Williams found that *World of Warcraft* players blended narrative and mathematics as a way to build "rhetorically persuasive models" to convince other players that their approach to a problem was the best.[30] *World of Warcraft* players also used scientific reasoning to validate their approaches and choices, social knowledge construction, systems-based reasoning, evidence-based reasoning, and evaluative epistemology.[31] Ochsner found that people used their online communities, such as those for video games and fan fiction, as places to try out and move forward with career paths.[32]

"New literacies" is one body of recent research that explores what youth do in their informal learning contexts.[33] In research on new literacies, Curwood describes how fans of *The Hunger Games* use online spaces to actively engage with the texts by comprehending, analyzing, and critiquing them.[34] The youth in these online affinity spaces engage with the texts in multiple ways, value multi-genre responses to texts, and use paratexts and parallel texts to extend and enhance their experience with the original text. New literacies research highlights three purposes: democratic participation, knowledge economy, and lifelong learning.[35] These three purposes are also the underlying concepts of connected learning, which is a framework that focuses on the valuation and bridging of informal learning to more formal spaces.

Connected Learning

For nearly a decade, a growing body of research has explored young people's learning in their peer and leisure spaces. This research has led to the development of a new framework through which to view a youth learning ecology,[36] which is the interconnectedness of the different parts of a youth's life through which they are learning. That new framework is connected learning. Connected learning "advocates for broadened access to learning that is socially embedded, interest-driven, and oriented toward educational, economic, and political opportunity."[37] It is about bringing together peer and community support for interest- and passion-driven learning, and translating and linking that learning to academic success and eventually to career success.

Although the agenda is not necessarily new, it is being approached in a new way. In the early part of the twentieth century, Dewey posed the idea of viewing education as seamless across all aspects of life.[38] For some youth, this seamless education is already a reality; however, for a majority of youth it is not. Fortunately, today technology allows Dewey's vision to be more in reach than ever before because technology can support inquiry-, interest-, and project-focused learning, as well as connections with those who have similar interests for youth across all walks of life. Access to technology alone is not enough; mentors and cultivated opportunities are needed as well. Learners need continual opportunities for positive experiences that add to or offer future trajectories.[39] Despite the challenges that this type of learning approach offers, it is achievable and librarians are situated in the perfect place between school and home to help youth achieve it. As seen with Maria and her teacher, a mentor helping translate between avocations and academics can have a positive long-term impact.

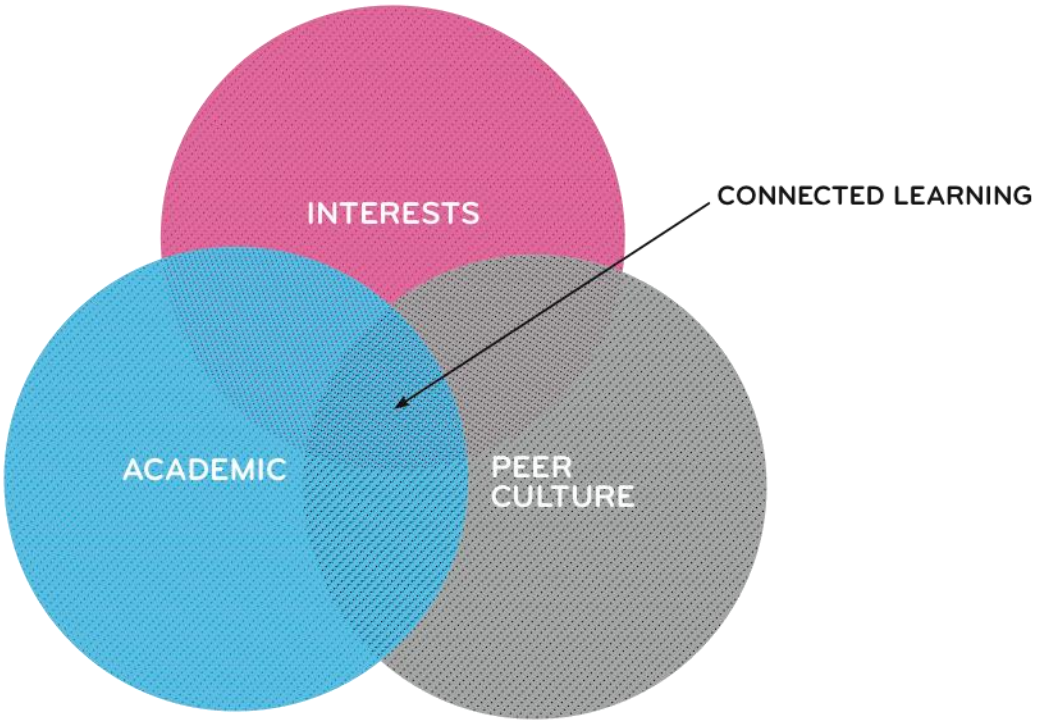

Figure 1: Connecting the Spheres of Learning[40]

Connected Learning and Libraries

The intersection of connected learning and libraries is just beginning to be researched. Only a few articles touch on different implementations of connected learning in library contexts. Ito and Martin briefly discuss results from a month of webinars that described the relationship between connected learning and libraries.[41] Another article, by Nygren, suggests changes that librarians and library administrators need to make to their current practice.[42] It proposes that librarians build a transboundary network; reach out to the local community; throw events of tinkering, learning, and making; and join a MOOC (massive open online course); and that library managers need to empower their staff; stop digital environments that block learning; start a Hive community; and find partners in academia, the public sector, and industry. The authors of the remaining articles offer design suggestions for library programming based on programs that they themselves had run. Bilandzic offers several design suggestions, including facilitating an open, collaborative, and interactive culture and increasing awareness of social learning opportunities.[43]

Gale suggests programming that includes content creation, problem solving, discovery, collaboration, and multiple literacies, such as interactive media teen book clubs and video blog workshops.[44] Ahn et al. offer a few challenges that they hope to address in their next iteration.[45] These include how to design experiences that allowed for continual growth and support of individual interests and how to weave interest-driven learning with specific curricular outcomes.

Objectives and Methods

As has been shown in the literature review, youth learn in a variety of places beyond school. What they learn in interest-driven spaces is not isolated, but instead is or can be connected to other parts of a youth's learning ecology.[46] As connected learning posits, learners need continuous opportunities to expand their learning. This paper seeks to illustrate how connected learning functions for youth in interest spaces. It also seeks to offer librarians concrete examples of ways in which they can facilitate connected learning for youth.

The data supporting this paper come from a larger body of research conducted by the Leveling Up team of the Connected Learning Research Network. It resulted from a two-and-a-half-year ethnography[47] conducted between 2011 and 2013 and undertaken by researchers across six interest-driven communities. Ethnography was chosen for data collection because it attempts to understand a phenomenon, seeks to remain open to new data, and connects observations and interpretations with a specific field.[48] In some online research, a process called "connective ethnography"[49] is used when the researcher is gathering both online and offline data; however, this study did not observe participants in both contexts. Ethnographic observations were conducted over several months at each research site and recorded through detailed field notes. Interviewees were solicited through posts on the forums of each site and through site gatekeepers.[50] In total, 1,517 hours of observations and 140 interviews were conducted across the six sites. The interviews included 94 youth, 39 adults, and 7 of unknown age, 77 of whom are female and 63 male. The interviewees represented an international group, with respondents from the United States, United Kingdom, Canada, Ireland, Philippines, India, Vietnam, Korea, Brazil, Mexico, Australia, New Zealand, and Europe (including Spain, France, and Denmark). Interviews were semi-structured. The research was approved by an ethics review board, and all names of participants are pseudonyms.

Sites were chosen to create a mix of high- and low-technology interests, as well as to garner a diverse sample of participants. Among the communities included in the larger ethnography were *The Wrestling Boards*, a professional wrestling online fan community; *Hogwarts at Ravelry*, an online Harry Potter fan knitting community; a One Direction fan fiction community (One Direction is a British boy band); the *StarCraft 2* community (*StarCraft 2* is a science-fiction, real-time strategy game that can be played individually or competitively); *Sackboy Planet*, which is the online fan community for the platform puzzle video game *LittleBigPlanet 2*; and Cali Design, a fashion camp in Southern California. Each of the researchers was responsible for a single research site, including field notes and interviews. Data were analyzed using qualitative coding by the team of researchers. The data were analyzed using an a priori coding scheme developed from the connected learning framework[51] as well as emergent coding. This paper demonstrates a condensed version of the framework[52] with a focus on larger, more tangible categories that can be of use to practitioners. The snippets of data for this paper were selected almost exclusively from the youth interviewees, and they were selected because they serve as exemplars for this framework.

Findings: What to Do to Support Connected Learners

As shown in the example of Maria and in the existing literature, youth learn in their interest spaces. However, as also demonstrated by Maria, it takes a series of supports for that learning to occur and for it to be translated or connected to a youth's larger learning ecology. Each of the following sections will give examples from the data, with implementation suggestions for library practice following.

Where Are the Learners?

Youth are participating actively in communities focused around their interests. For participants in interest communities, it is more than just enjoying something. These communities often involve a high level of commitment, production, and passion.[53] Many do not see the skills they develop in their interest spaces as "learning" because the idea of learning, for many, has become inextricably linked with schooling.[54] In the interest communities studied as part of this ethnography, learning and supporting others' learning, whether recognized or not, was part of the

passion of the community. But how do youth discover the variety of interests in which they learn and participate?

Madison, a sixteen-year-old from Los Angeles, had been writing in school but had never really considered sharing her work with anyone beyond the teacher who had assigned it. Her first experience with publishing her story on the fan fiction website *Wattpad* began through a class assignment. She said she had been working on a story "for months for a school project. I liked it so much I kept writing it even after school ended." A friend, who was a regular contributor on *Wattpad,* suggested that Madison post her story. Although she was nervous about openly sharing her work, she found that it built her confidence in herself and her writing, and "most people gave positive feedback on it." For her, the entry point to writing was more than just a class assignment. It was through the intersection of a story she was passionate about and a peer who shared the passion. Her friend understood, at least to some extent, the importance of having a community with which to share a passion.

Like many participants on *The Wrestling Boards*, Jonathan, a sixteen-year-old from Europe, went in search of a community that shared his interest in professional wrestling. Many professional wrestling fans who are older than middle-school age face stigmatization for their continued interest in professional wrestling. It is seen as "immature" and "childish" by those who are not fans. He sums up his feeling for the community: "At the end of the day, we're all alike and we're like a family on *The Wrestling Boards.*" The fact that he and other professional wrestling fans were able to find each other across the globe created a strong bond between them. From his participation on *The Wrestling Boards*, he not only learned to understand professional wrestling more deeply but also was able to hone and share his Photoshop abilities.

Peers Helping Peers

Peer-supported help and learning is an important component of connected learning. These peer learning situations allow for anyone to be an expert and take the role of the teacher. They also allow individuals to move between the role of teacher and learner fluidly, and as the situation warrants. Online communities offer a host of new ways to make this happen by connecting learners to other learners and experts in their areas of interest and inquiry.

Jonathan, the sixteen-year-old from Europe and a member of *The Wrestling Boards* professional wrestling fan community, described how the relationships in the community supported his participation and learning: "I give and get feedback often about what I do. . . . I often help/mentor new members of the forum to the best of my ability." Many in *The Wrestling Boards* community took on the role of supporting the learning of others. This included Crayo, a nineteen-year-old from the United Kingdom who founded the forum. He described how new members sometimes come to the community as "marks," that is, people who do not know that wrestling is scripted and choreographed. The community takes it on as part of its mission to educate the "marks" and turn them into "smarks," or smart marks, those who do know that wrestling is scripted and choreographed. Cloud, a twenty-eight-year-old also from the United Kingdom, felt much the same: "We all try and help each other on here[;] it's a friendly community and we constantly give feedback and advice to each other and I know a lot of us give feedback and advice to Crayo about the site and things we would like to see." All three of these community members emphasize the importance of learning and support in these communities.

The sorts of community-supported learning seen in *The Wrestling Boards* is also seen among the community members of *Sackboy Planet*, a fan community for the video game *LittleBigPlanet 2*. Jeremy, a member of *Sackboy Planet* and level-design enthusiast from the United States, said, "Whenever I needed help I just go on there and almost instantly someone would be there and help me. When *LittleBigPlanet 2* first came out, I posted a couple of questions and they all got answered fast and stuff." PonyPal, a seventeen-year-old from the United States and also a *LittleBigPlanet 2* level designer—a person who creates locations in video games—reiterated this, saying, "Anytime someone would check out my stuff I'd check out theirs and anything else I happened to play from there I would offer feedback on it as well." The community encourages this reciprocal interaction between community members, just as in *The Wrestling Boards*, because it not only develops social ties, but it also creates an atmosphere in which members can problem solve and learn together.

Production and Creation

In connected learning environments, production and creation are common activities among those who participate. The activities across connected learning environments vary greatly, from writing to digital storytelling to photography to coding. All the cases in this ethnography offered

participants the opportunity to create a product. The digital world has offered a host of new tools for making and sharing things with others who share a similar interest. These online interest-powered communities become resources for production-based learning. Production and creation offer an opportunity to socially connect around activities that the community members feel are relevant.

Within the forums of the online Harry Potter fiber-crafting group *Hogwarts at Ravelry*, participants found tutorials on a variety of different subjects that support learning and creating new things. The available resources were often created by participants. For example, knitreaver, an expert spinner from New Jersey, created a thread in which she and other spinners of all experience levels share spinning tutorials, "how-to's," tips, experiences, and favorite resources. In her thread, knitreaver's initial post said:

> Hello, spinners! I've been seeing some lovely handspun around the castle, and I thought it time that we spinners have our own lounge to chat and learn about spinning. I'm hoping this will be a place to share our experiences and ask questions. I'd like to start a list of links in the header for great learning sites/videos and even fiber vendors. If anyone has recommendations for links, please post them.

Here production and creation are supported by the members of the community. They pool their resources and expertise to help one another.

Another member of *Hogwarts at Ravelry,* Isabel, a nineteen-year-old from Canada, described what production and creation mean to her participation. She said, "I also love the final product. Nothing gives me more satisfaction than wearing homemade socks." She uses production and creation as a means of expression by "being able to flaunt something fabulously unique and perfectly personal." She also sees her participation as a means of communication, saying, "Another facet of my adoration is definitely from the communicability of the art." And her production is recognized by other people, through which she finds fulfillment. "People appreciate the thought, effort and love that went into a handmade gift."

The Importance of Recognition

Previous research has made it apparent that youth often do not see how to translate what they do in their interest spaces into recognition in their academic or career pursuits or into contributions to communities outside of their area of interest.[55] As was demonstrated with Maria, caring adults can be essential to helping youth make this connection. Recognition, by both peers and mentors, is a necessary element for allowing participants to embody their interest and to see the value in what they are doing.

Alex, a fifteen-year-old from Florida, is a *StarCraft II* player and an organizer for the *High School Starleague (HSL),* a competitive *StarCraft II* league for high school teams. For players, *StarCraft II* is an "all in" commitment in order for players to achieve a high rank. Alex described a "passion" for *StarCraft II,* but being in an intensive high school program, he did not have much time to practice. He said, "The people that are Grandmasters and that are in high level in high school aren't in IB [International Baccalaureate] and have more time to commit to StarCraft." Alex used coaching "as a way of extremely efficient practicing" for *StarCraft II* and decided that because he did not have the time to commit to be a Grandmaster, it was more worth his time to develop and organize the *HSL,* helping defeated teams figure out which strategies worked and which did not, sharing his passion for the game. He was recognized for his work and leadership by the larger *StarCraft II* community. The adults in his life also supported him in his interest and learning about organization management.

Briana, a twenty-five-year-old from Utah and a member of *Hogwarts at Ravelry,* was able to gain recognition for her knitting and crocheting through selling her fiber crafting on Etsy, an e-commerce site for handmade and vintage items. She started by selling knitted baby shoes and headbands on the site. However, it was not long after starting her Etsy store and learning to crochet that she discovered pattern selling was a more lucrative source of income than selling finished items. The difference was that the time invested in making and selling baby shoes typically comes out to less than minimum wage. For patterns, though, once a pattern is written and published, an infinite number of copies can be sold. At the point Briana learned to crochet, she bought a pattern from an Etsy store and looked at the number of sales for that shop, which totaled 7,450 sales in less than one year. Briana estimated that the shop owners made more than $80,000 from pattern sales. This motivated her to turn away from selling finished items and to

begin designing and selling patterns. When Briana was interviewed a year after she opened her shop, she was making more than $1,600 a month in pattern sales. Her store had become a staple for the members of *Hogwarts at Ravelry*, and they celebrated her success.

Sixen, a twenty-one-year-old from Arizona, is the founder of the *StarCraft II* modding site SC2Mapster.com, which is hosted by Curse. When he was about thirteen years old, he realized that players could make their own maps for *StarCraft I* using the Staredit level editor. This map editor, as he recalls, was "very, very simple" and "nobody really liked using [it]," so third-party tools started to pop up in the community. He used both Staredit and the third-party tools to step through creating a variety of maps with different difficulties, starting with a one-versus-one melee map, and then flush with that success, he moved on to more difficult maps, such as RPGs. He was "getting a little bit more into it" with each map. By the time *StarCraft II* came out, about seven years after he started making maps for *StarCraft I*, he had been so active in the mapmaking community, developing a widespread reputation as an expert, that he decided to create his own *StarCraft II* mapmaking website. Sixen was able to start with an interest in the games and through that interest developed a specialization in mapmaking for Blizzard games. Through recognition by his peers and administrators within the community of his abilities, Sixen was able to make a career out of an interest.

Theory into Practice: Co-Creating Learning in the Library

Connecting to Youth Interest

It may be difficult immediately to see the applicability of the data presented in this paper to libraries. Librarians do not need to search the Internet to find where the youth they serve are hanging out, which would be a complex and nearly impossible task. For youth librarians, the task is to find out which interests local youth participate in and what their participation looks like. The examples of Madison and Jonathan are meant to demonstrate journeys that youth take to find an interest. To reach youth in their interest spaces requires reaching out to them, in and out of the classroom, bringing their interests into focus in academic contexts. Librarians can use several methods to discover youth interests. The first approach is to ask individual teens directly as one encounters them in practice; obviously, this method is not the best way to get an overall picture, but it is a way to build stronger relationships with individuals. Librarians can connect

with youth through the building of trusting relationships developed without judgment of their interests. Librarians can do this with casual conversation starters, such as commenting on book selections youth have made, probing about musical interests if they often wear headphones, and other such approaches based on contextual clues. Second, asking members of the teen advisory board or teen volunteers about their interests is a way to potentially discover a broad set of interests, if only among the most motivated and engaged youth. Third, librarians can run a survey, online or on paper, to ask youth about their interests. Whether choosing a paper or digital survey, keep it simple, with just one or two open-ended questions, such as "What are you interested in?/What do you do for fun?" and "Would you like to see programming around this interest?" Also make sure youth are able to answer privately; teens are often reluctant to reveal their most passionate pursuits.

Supporting Peer-Supported Learning

Peer-supported learning, another part of the framework mentioned above, is not confined to online communities. However, online spaces are places where peer-supported learning can happen naturally because in communities where it is supported, expertise matters most. For youth librarians, peer-supported learning may seem to be one of the most difficult supports to establish, yet the way forward is to strategize how to implement peer support in practice. Three main approaches help in this effort. First, have youth help design or run programs in which they have expertise, whether their interests are in book or video game clubs, fiber crafting, or computer programming. This not only allows peers to teach one another, but such programs can also offer the youth who are instructing an excellent opportunity to develop confidence and leadership skills. Second, allow programs to be flexible enough that peers are able to ask one another for feedback and advice. This works well in programs that involve creativity. Give the youth scaffolds and, potentially, parameters to work within, and then let them make projects on their own.

Finally, librarians can position themselves as co-learners, instead of as pure experts, and be willing to try programming that they have not already mastered. For instance, in one library program that Martin et al. describe in a paper on mentorship, a youth says that one of the best aspects of the space is that the adults in the space are always ready to dive into any new topic a teen is interested in, even if they do not know much about it.[56] These three approaches change

the dynamic and the power structure of the relationship between youth and librarian, allowing for youth to benefit from a peer-supported learning environment.

Fostering Production and Creation

Production and creation are more than just hands-on experience. They are hands-on experience in a challenging activity that requires learning new things. Many resources that are part of "making" can carry an expensive price tag for library programming. But there are great free options out there. For example, check out Scratch (http://scratch.mit.edu/), which is an online programming language. It has a strong online community with active forums, more than 8 million existing projects that can be remixed as a way to learn programming, and accessible example projects. Scratch has a relatively low bar to entry, and it can be used for creating games, animations, and animated narratives, as well as for creating interactive art and music. Programming such as Scratch requires only that youth have access to computers. And the activities and workshops that are created around a program such as this do not have to have coding as their main focus. Instead, youth can explore creating music with coding, graphic novels through coding, or images to go with a story. In all of these cases, the connection between making and learning is valuable. Youth can actively pursue the creation of products while learning in their pursuit of expertise. The value of creation and production lies in the sense of accomplishment and the development of expertise that goes along with skill improvement and mastery. Peer-supported learning requires asking someone else for help to develop a skill. Programmatically, it is about offering a challenge that is open-ended, in which those participating have the option to choose their own product and create what they feel passionately about while seeking support when needed from those around them.

Valuing the Expertise of Youth

Development of expertise that brings these participants recognition within their respective communities is essential for personal development, learning, and a strong sense of belonging. Maria was able to see the overlap between school and her interests through the support of a teacher. For youth, personal interests offer the opportunity to be recognized as an expert, which is often unavailable in other settings. It is important that youth be recognized for their abilities outside of their interests. As mentioned earlier, many youth do not see the importance or value of

the skills they use and learn in their interest spaces. It often requires a mentor or caring adult to help them make that connection.

These mentorship roles are an excellent opportunity for librarians because libraries are a "third place"[57] for youth: an anchor of community life that offers a sense of place. This facet of the connected learning framework can be met through a couple of different approaches. One approach is that described above for peer-supported learning, encouraging youth to lead workshops or programs on their own topics of interest, which puts them in the position of being experts and recognizes them for this accomplishment. Another way to support youth is to openly recognize that what they learn in their interest spaces has value and potentially links back to their academic and career pursuits. Librarians can achieve this goal by offering workshops on topics of interest and including local professionals who can help explain the path between the interest and an academic or career pathway. The librarian can also accomplish this by filling the role of the professional, explaining how a student can take an interest in something such as video games, fashion, or design and turn that interest into a career. Librarians can offer youth support in connecting their interests to academic and future outcomes. Connected learning is a framework, so no blanket solution will work across all settings. But one hopes that through the examples of connected learning in online communities and potential programming ideas, what the framework can do for youth becomes apparent.

Conclusions

The connected learning framework seeks an approach to education that is "socially embedded, interest-driven, and oriented toward educational, economic, and political opportunity."[58] For librarians, who have a long history of interest in service and education, the connected learning framework is well aligned with the mission of organizations such as YALSA (Young Adult Library Services Association) that advocate for the equality, interest, and support of teens.[59] Each of the supports described—finding the learners through their interests, peers helping peers, production and creation, and the importance of recognition—is a pillar of the connected learning framework. Connected learning is not just a way to describe learning that is happening in interest spaces, but it is also a model for design, intervention, and policy.[60] It is at these intersections where librarians can be the most effective. Connected learning is not about a technology or a

technique; it is about focusing the learning on the learner. Each situation must be approached and considered individually, because there is no single approach to connected learning. If libraries create programs that focus on the things about which youth are passionate—their interests, cultures, identity, and social relationships—the relevance and impact of learning is magnified. In previous research, when asked, highly resourceful problem solvers and successful, engaged learners almost always point to a connected learning experience supported by a caring adult or peer. [61] This mentorship role is one that librarians are uniquely situated to fill and one where youth need them the most.

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