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Connections to Practice and Design

Tal is a sixth grader who enjoys writing and drawing and playing games, particularly Minecraft. She is also a student at Quest to Learn in New York City, a unique public school codesigned by educators and game designers, including one of the authors of this book, Katie Salen. Tal learned about Minecraft at school and quickly became attached to it because it allows her to build and be creative within a multiplayer social online environment. In Minecraft, players mine and craft items, use blocks to build structures, and organize a wide range of activities that are both collaborative and competitive in nature. Tal started playing Minecraft at her cousin's house and eventually helped start a Minecraft club at school. Given the school's support for games-based learning, educators embraced the club and set up a server so the students could play together and access their online world from both home and school. Unlike the other learners whose stories form the basis of the research for this book, we learned about Tal through an environment specifically designed to support connected learning, Quest to Learn.

In addition to being active in the school's Minecraft club and server, Tal was also part of the kinds of online affinity networks that we have studied for this book. She learned from open online resources for Minecraft, which include massive numbers of YouTube videos, forums, wikis, and other server communities. Based on ideas gleaned from these online resources, Tal was inspired to write scripts for her friends at school to perform and record as animated plays in Minecraft. One of her teachers, recognizing the creativity and learning potential of Tal's scriptwriting, encouraged her to share the work in class, and she was interviewed about it for the online school newspaper. With the support of her peers, family, and teachers, Tal continued to pursue her writing interest and began writing every day, eventually enrolling in a summer program for writers so she could continue writing during her break. For
Tal, online affinity networks were linked to a broader network of intergenerational, local, and institutional supports, resulting in powerful learning as well as expanding her educational opportunities.

Like Tal, millions of young people around the world are passionate about Minecraft and connect through online affinity networks, bonding with peers, engaging in creative production, collaborating, organizing, and developing school- and career-relevant skills. Some of these youth are growing up in high-tech and wealthy families who understand the learning potential of digital games and enroll them in summer Minecraft camps or help them advance their skills at home. Very few of them, however, attend a school like Quest to Learn, which embraces games-based learning and encourages links between recreational in-home gameplay and school achievement. Tal’s story offers us a glimpse into a world where parents, educators, and our public learning institutions work more explicitly, intentionally, and actively to connect with young people’s new media interests and leverage the power of learning with online affinity networks. How can parents and educators best recognize and connect with the learning in online affinity networks? What are barriers that keep us from tapping this potential, and what are ways we can address these barriers?

As part of a broader effort in researching and designing for connected learning, we have focused our investigation on the positive learning potential of online affinity networks in order to understand learning opportunities and challenges related to a changing digital landscape. Our focus was not on educational programs, policy, or parenting, but an important aim of our work has been to offer research and recommendations that can inform parents and educators who are seeking to support connected learning for all youth. We have celebrated the creativity, technical sophistication, civic engagement, and varied expertise that flourish in certain online affinity networks. At the same time, we are concerned about the lack of intergenerational connection in many of these online affinity networks, their disconnection from schools and career opportunity, and inequitable access to these learning opportunities. In this concluding chapter, we describe our design framework in relation to the findings from our case studies, and then we consider the opportunities and challenges in realizing the full potential of online affinity networks for connected learning. This chapter pivots from
reporting empirical findings to explicating opportunities for action and the social change agenda of connected learning.

Learning as Connection Building

Our research underscores a central insight of connected learning and sociocultural learning theory: Transformative and resilient forms of learning are embedded in a web of social relations, meaningful projects, and shared activities with which a learner feels a sense of affinity. Unlike the majority of learning research, our cases center on youth interests rather than educational institutions or school-related subjects. Thus collective action, social connectedness, and cultural relevance are central to the learning that we have seen in the online affinity networks we examined. Placing interests and affinity at the center of the investigation offers a different perspective on long-standing concerns about interest development and learning transfer. Our cases enable us to highlight how interest development is grounded in shared cultural identity and joint activity. In turn, this perspective enables us to consider how learning transfer can be reconceptualized as a process of cultural translation and connecting social networks rather than as a process located primarily in individual cognition and competency.

Learning in the online affinity networks we studied begins with attraction to and affinity with a shared culture and identity. Some participants go on to gain a deeper understanding of subcultural practices and form relationships with people in the network, and they develop a sense of belonging, eventually sharing work online, taking on roles in a community, and developing reputation and status in the network. Shared purpose is structured around activities such as competition, creative production, and community organizing, providing a context for ongoing activity that further bonds participants. The sense of belonging and bonding can be a powerful driver of participation and learning as young people earn recognition from others who “get it” and share a similar culture and values. Learning—gaining knowledge, developing expertise, collaborating, and community organizing—is a natural byproduct of this ongoing participation. As prior work in situated learning has argued, learning is part and parcel of participation in communities of practice (Lave and Wenger 1991; Wenger 1998). Unlike professional
communities of practice and formal education, however, online affinity networks are “intentional” communities that center on shared interest, affinity, and collective action, rather than being driven by primarily instrumental or achievement-oriented goals.

It is tempting to describe this learning and interest development as a pathway or pipeline. When we put interests and affinity at the center of the investigation, however, we see how journeys through interests, peer engagements, and achievement are meandering and undetermined. A young person might discover a new interest through a school-sponsored structured activity, a parent or a peer, or a serendipitous discovery in an online search or stroll through an urban environment. That young person might abandon an interest for quite some time, only to reactivate it when an opportunity arises to make a contribution to a family or a school project, or if he or she connects with a new friend who shares that interest. As we searched for “pathways,” “transitions,” and “trajectories,” we found these linear narratives to be elusive. When young people are pursuing interests through voluntary activities, their pathways are divergent and unpredictable, unlike what we see in formal education. Instead, we look more at broader ecosystems that they participate in, and we rely on metaphors of affinity networks, bridging social capital, and consequential connections. We see connected learning not as a journey of individual development that is transferrable across the different settings that a person moves through, but as building stronger, more resilient, and diverse social, cultural, and institutional relationships through time.

For some young people, online affinity networks are rich sites for developing unique forms of bonding social capital, sites where they feel a strong sense of affinity and belonging but in a way that can be compartmentalized from networks in their local community. These subcultural qualities and the compartmentalized nature of the relationships mean, however, that the majority of the learning in online affinity networks is not connected to local settings and communities, and it is difficult to translate into cultural referents that are relevant for academic and career advancement. Even in our cases, which were selected for their potential for connected learning, the online social networks rarely overlap with the social networks in school or the local community, or with career networks. Building these connections requires concrete forms of
sponsorship, translation, and brokering in order to connect interests to opportunity. We saw examples of young people connecting their interests to opportunity by deploying the writing, mathematical, creative, communication, and problem-solving skills developed in their online affinity networks to school, civic, or career-relevant settings, and vice versa. In other cases, they were able to directly connect their interests to opportunity by monetizing their creative work or finding a job in their interest area. Sometimes a parent, educator, or mentor helped broker these connections. While we saw great promise in these examples of young people being able to connect and bridge from interests to opportunity, they were rare.

This kind of productive network building requires the agency and interest of the learner, as well as the collective efforts of those of us invested in developing learning environments and opportunities. When we consider the resources and supports that young people need to connect their interests to opportunity, equity becomes of critical concern. Wealthy parents spend increasing amounts of money on supporting out-of-school learning tailored to personal interest (Duncan and Murnane 2011), and studies indicate that these children of higher-income families are much more likely to report having a wide range of informal adult mentors (Bruce and Bridgeland 2014). Research on family investments in enrichment activities indicates gaps and differences based on socioeconomic and other factors. Lareau’s fieldwork in the 1980s describes differences between middle-class families and lower-income families in the emphasis they place on enrichment and “concerted cultivation” (2003). More recent research, however, indicates that lower-income families also place a high value on athletics, arts, and other forms of enriched and specialized learning, though they may not have the resources or time to support these activities in ways that more privileged families do (Bennett, Lutz, and Jayaram 2012). While we may debate whether these differences are driven purely by economics or by values and preference, research is consistent in pointing to a gap in the relative investments of wealthy and poor families in structured enrichment activities (Weininger, Lareau, and Conley 2015).

Although some young people are able to advocate for and translate their interests into opportunity in school and career, most need the support of local programs, mentors, and parents with the relevant social
capital to broker these connections. If this process continues to play out as a private, market-driven process, the growth of informal online learning will exacerbate the equity gap, reducing the odds that lower-income youth will be able to pursue higher education and career opportunities in areas that they are genuinely interested in and passionate about. The responsibility of providing mentorship, brokering, and connection building to link youth interests to opportunity is a collective one and cannot be shouldered only by families, nor only by schools and other public educational institutions. It entails a broader cultural shift toward recognizing the new learning dynamics of a networked era, paying more attention to learning and equity in online communities and platforms, and providing more educational supports in both informal and formal learning environments. Here we can only scratch the surface of the complex, systemic change that is needed for a more equitable distribution of networked learning opportunity. In the remainder of this chapter, we describe some of the significant barriers that need to be addressed to realize fuller and more equitable access to the learning opportunities of online affinity networks, and then we describe some ways and design principles for addressing these challenges.

Risks and Challenges

We have described the features of online affinity networks that support connected learning as interest-driven, socially connected, and meaningful. This book has highlighted the compelling learning dynamics and features of the environments we examined, and how they differ from more traditional learning settings. While recognizing these positive features and their potential, understanding the barriers and challenges that accompany young people’s growing participation in online networks is also critically important. Many concerned with the rise of online communication have pointed out problems, such as loss of traditional reading and writing skills (Bauerlein 2008; Carr 2010), risky online behavior (Sales 2016), social isolation (Turkle 2011), or young people falling in with the wrong crowd online (Steyer 2012). We fully recognize that there are risky and undesirable ways that young people can interact online, but we have chosen a focus of investigation that points toward solutions and engagement with youth culture. Unless complemented with
positive alternatives, relentless critique and denigration of youth online life can create a divisive climate between adults and young people. Too often, digital culture and devices act as a wedge issue between generations. We seek to underscore the tremendous diversity in how young people are engaging online and the importance of highlighting and fostering learning dynamics that are often invisible or poorly understood by prior generations.

Our concerns center on the unrealized potential of connected learning with online affinity networks. We see young people from all walks of life highly engaged with interests, with strong motivations to learn and to communicate and connect with others with shared interests and concerns. Yet only a small minority of young people, those who generally have high degrees of family or local support for their interests, are connecting their engagements with online affinity networks to recognition and opportunity outside of the affinity network. If this is the case with the selective sample of positive online-learning settings that we sought out, it means that the potential for this kind of connected learning is largely unrealized. Of particular concern is how, just as with early forms of digital opportunity, more economically and educationally privileged youth are taking fuller advantage of the learning opportunities afforded by online affinity networks.

Inequitable access to progressive learning opportunity is not new, but digital networks have the potential to radically expand the equity gap. When we celebrate pint-sized YouTube celebrities and digital activists, tween coding savants, or youth who are many grade levels above their peers in math thanks to open learning platforms such as Khan Academy, we should pause to consider whether these opportunities for accelerated learning and recognition are accessible to all youth. Tech-savvy and “creative class” families have been the first to embrace an ethos of digital learning that values digital tinkering and geeking out online, and parents in these families are often well connected with their children’s digital interests. The internet gives superpowers to those youth who are either highly motivated and interest-driven or have a home and school environment that fosters and supports these forms of personalized, empowered, and specialized learning. This emerging dynamic is particularly distressing because today’s online networks offer learning supports that are freely accessible and cater to a diverse range of interests and
identities. In theory, this means that young people from diverse backgrounds and with less economic privilege should be able to capitalize on these opportunities. Unfortunately, existing forms of privilege and stratification structure access in powerful ways, even in the absence of economic and technical barriers (Reich and Ito 2017).

These long-standing forms of stratification are further complicated by the fact that online affinity networks are not commonly recognized as potential sites of learning opportunity, creating challenges in building intergenerational linkages and connections to opportunity. To tap the learning potential of online affinity networks, educators, parents, and technology and policy makers need to proactively engage with these forms of informal and interest-driven online learning. We are still a long way from having a shared understanding and public agenda for how the adult world can harness online affinity networks for educational opportunity and equity. We see two significant barriers that must be addressed: the digital culture generation gap and the lack of connection between online affinity networks and young people’s local communities. We describe these two barriers before turning to a discussion of how we can support learning environments that address these barriers and expand access to connected learning.

The Digital Culture Generation Gap

As we documented in our earlier work (Ito et al. 2010), many parents and teachers view young people’s online communication with concern and even alarm. Even in our selective sample of online affinity networks, young people seldom described parents and educators as actively supporting their online activities. The familiar tendency for young people to rebel against older cultural forms and develop youth-centered subcultures intersects with new digital technology in ways that expand the cultural generation gap. This gap is particularly evident with digital gaming, as nongamers struggle to understand and appreciate young people’s high levels of engagement, often portraying the games as addictive and antisocial. We also see a wide gap with fan-related activity around contemporary media and music, though it was less pronounced with more long-standing interest areas such as knitting or WWE. Gamers and fanfiction writers described how they hid their online activities from their
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parents, and they would not think to share with teachers and other adults. Even in the cases of parents who supported a gaming or fannish interest, it was rare to see shared engagement across the generational divide. Contrast this to, for example, athletic interests or more traditional arts, which are a site of intergenerational connection and a place for parents to celebrate the achievements of their children. If we are going to tap the power of online affinity networks and digital interests for learning, then we need to address the digital culture generation gap head-on.

We see two dimensions to this challenge. One is a genuine lack of understanding and visibility around what digital youth culture is about. For example, a parent or teacher who has not grown up playing complex digital games such as StarCraft, Minecraft, or LittleBigPlanet will be hard pressed to understand what is happening on-screen, much less support or guide a child’s learning in these areas. The second dimension of this challenge is one of cultural values and negative stereotypes. The negative assumptions that many attach to certain forms of digital culture are deep and challenging, particularly with digital cultural forms that are highly specialized or technically focused. Gamers and fans geeking out about specialized cultural referents and technical expertise can put off those who are not immersed in the subculture. Henry Jenkins wrote about the stigma attached to popular fan cultures well before the advent of the internet (Jenkins 1992). While more accepting of literary fandoms such as that for Harry Potter, the older generation tends to have a particularly negative view of digital gaming (e.g., “addiction”) and girl-centered cultures such as the One Direction boyband fandom (e.g., “frivolous”). These negative assumptions create disconnects between adults and youth interests and result in a lack of positive adult mentorship in relation to these interests.

Compartmentalized Social Networks

Young people who invested time in and attention to the online affinity networks we examined forged deep and specialized bonds with peers and mentors with shared interests and developed subcultural social and cultural capital. The subcultural and online nature of these relationships and cultural referents means, however, that they tend to be specialized, compartmentalized, and different from the layered and multifaceted
relationships that we develop in local community activities such as religious organizations, sports leagues, and schools. Further, because online affinity networks are far-flung and rarely have ties to formal organizations, there is little direct connection to opportunities and relationships in schools, workplaces, and civic institutions. When combined with the lack of visibility and appreciation of digital culture, this compartmentalization means that it is rare for parents, educators, and learning institutions to connect with the learning that is happening online. In other words, online affinity networks can support bonding social capital, but they have few avenues for bridging social capital between online relationships and local ones, limiting connections to academic, career, and civic opportunity.

For the cases we examined, these missed connections are a lost opportunity for linking the positive learning in online affinity networks to civic, career, and academic achievement. For online affinity networks with less positive valences, the disconnects could mean that young people are forming deep bonds of affiliation that create rifts with school, family, and community. In the most extreme cases, this means that young people could form deep bonds with others who reinforce negative behaviors and extremism. Again, we can contrast this to more long-standing and intergenerational interest areas and extracurriculars such as sports, performance, and the arts, which are appreciated by teachers and parents and will make their way onto a college application and a résumé. Further, the individuals and organizations that support these historic interests are well connected to schools and the life of local communities, increasing the likelihood of connections being brokered.

In our study, gaming culture and social networks emerged as examples of the growing connection between some online and professional networks. Unlike more traditional industries, gaming has relied heavily on the informal mentorship, peer learning, and professionalization that happen through player communities and digital networks. It has become normative for developers, screencasters, and other professionals in the industry to rise through the ranks of online affinity networks into professional jobs in the industry. We also see this phenomenon in other fast-paced digital specialties such as open-source software and cybersecurity. Further, platforms such as Ravelry, Etsy, and YouTube enable digital creators to directly monetize their creative work online.
In the absence of these direct social and economic connections, however, young people still need ways to connect the skills they are cultivating in their informal and interest-driven networks to social networks that open up opportunity for them. We turn now to some examples of how parents, educators, and technology and policy makers are actively engaging with ways to address barriers and support connection building among online affinity networks, learning, and opportunity.

Opportunities and Design Principles

We have described how online affinity networks can support shared culture, practices, and civic and creative engagements that are rich sites for interest-driven and peer-supported learning. While the interest areas and practices we described are diverse, the online affinity networks we examined share a set of common features that support connected learning: They all have a shared purpose, are project-centered, and are openly networked. By highlighting these common features, we hope to inform efforts by educators, online community managers, and designers to foster positive learning dynamics and expand access to connected learning. Here we describe the core design principles for connected learning in relation to our findings, and we offer some examples of educator-supported learning environments that incorporate these principles. We draw on these examples to complement the case studies that form the foundation of this book by introducing environments where educators have explicitly designed programs to expand access to connected learning and to connect affinity networks to opportunity in education, civics, and careers. To illustrate these shared underlying design principles, we focus on three learning environments that the authors have participated in as researchers or designers: the Scratch online community, Connected Camps, and the YOUmedia Learning Labs.

Shared Culture and Purpose

At the center of connected learning environments are a common culture and purpose that drive participation. People are drawn to online affinity networks because of shared interests and identities, and they stay because they develop a sense of belonging and shared purpose. If they
choose to become contributors, they take on different roles, develop status, and earn recognition from their peers. Affinity networks that foster shared culture, purpose, and learning allow for diverse forms of contribution and participation, and they have community-driven ways of recognizing status and quality of work. Participants in these environments know who the newbies and experts are, and who is specialized in particular areas. They also have ways of showcasing and celebrating a range of positive contributions to the community. In other words, there is a shared understanding of how social and cultural capital operates in the interest area. Online affinity networks of the friendly variety that are successful in recruiting new participants also have practices and roles that center on welcoming new members and maintaining an inclusive ethos (Rafalow 2014).

These principles are evident in educator-designed online affinity networks as well as in the more youth-driven ones that we observed. For example, the Scratch online community, hosted by the Lifelong Kindergarten group at the MIT Media Lab, is designed to encourage coding, creative production, and positive learning dynamics. It has a clearly defined set of community values and actively moderates the site to maintain these values (Lombana-Bermudez 2017). The Scratch team has been intentional in how it has designed its reputational mechanics, encouraging positive commenting and enabling participants to “favorite” and “love” projects as well as remix other people’s projects. The team also features projects on the homepage, and along with remixing each other’s work, it enables participants to curate work into galleries and develop subcommunities. Together these varied activities and features have cultivated a growing community of computational creators in diverse interest areas (e.g., Aragon et al. 2009; Brennan et al. 2011; Kafai et al. 2012; Roque, Kafai, and Fields 2012).

Ito and Salen have been part of the development of Connected Camps, an online *Minecraft* community that fosters digital citizenship as well as specific STEM skills in disciplines such as coding and game design. The community is modeled on existing *Minecraft* server communities that center on collaborative production, but with an added layer of moderation and educator-designed activities. Connected Camps recruits teen *Minecraft* experts to be community helpers and instructors for its server and programs, and it enforces a set of community
standards that ensures safety, positive digital citizenship, and inclusivity. Because it is staffed by young people who grew up as gamers immersed in the culture of *Minecraft*, the network also values the subcultural referents and status of the gamer world. It seeks to strike a balance between being a youth-driven gaming community and one that is centered on adult-guided positive values, learning, and citizenship.

We see the focus on shared culture and purpose in many educational programs that center on youth media production, service learning, arts, and athletics, but it is less evident in most formal and standardized classroom learning. In learning environments that are less interest-driven, it is more challenging to develop this sense of shared community values, culture, and purpose. The teacher and other external authorities determine content and standards, and students tend to have fewer opportunities to contribute meaningfully to defining culture and purpose. Schools commonly support this sense of shared culture and purpose more in extracurriculars and electives in which students self-select to participate. These can be organized programs such as athletics or FIRST Robotics, or more informal student-run clubs, such as an anime club or *Harry Potter Alliance* chapters of Harry Potter fans mobilizing for social good. In these examples, the school-sponsored activity is interfacing with broader affinity networks such as regional sports and robotics leagues, or fan conventions and online networks. Participants in these activities gain status and recognition in their school as well as in these broader networks. These kinds of school-sponsored extracurriculars, particularly when they are connected to broader affinity networks, are prime sites for connecting learning across settings.

The YOUmedia Learning Labs, a growing network of spaces in museums and libraries that center on youth digital media production, are also designed around sponsoring interests that connect to broader affinity networks. YOUmedia spaces embody the principles of shared culture and purpose by focusing on popular youth interests such as music, spoken word, gaming, and digital arts. They are staffed by museum and library educators, as well as by teaching artists who embody the social and cultural capital of the interest area. Much as we see with online affinity networks, young people describe the powerful sense of connection they feel with mentors who share an identity and interest, and who really “get them.” The first YOUmedia Learning Lab, at the main downtown
library in Chicago, serves hundreds of teens who engage in varied areas of interest with peers, mentors, and librarians. It is a drop-in space that is designed to be accessible and inclusive, but it also supports young people leveling up in their interest areas through workshops, projects, and performances. At the core of the model are a sense of shared culture and affinity and a diversity of roles and ways of participating, modeling many of the principles of online affinity networks we observed, but centered in a physical space (Larson et al. 2013; Sebring et al. 2013).

All of these efforts are addressing the digital culture generation gap by building environments where young people and adults can build shared purpose and activities centered on new media interests. By shedding light on some of the positive and underappreciated dimensions of online affinity groups, this book has also sought to destigmatize these forms of digital culture and to suggest that they can be sites for more intergenerational tolerance, if not joint engagement. This effort to connect youth interests and education is not unique, and it is part of a longer history of efforts that rely on culturally relevant approaches to addressing equity and inclusion. For example, some educators have embraced hip-hop culture for fostering literacy and political engagement (Hill 2009; Morrell and Duncan-Andrade 2002; Prier 2012). Progressive teacher networks such as the National Writing Project have long focused on engaging youth interests, and they have embraced fanfiction as a stepping-stone for developing literary skills (Bahoric and Swaggerty 2015). The movement toward bringing esports into high school and college settings is also promising, as is the growing effort among educators to bring Minecraft into learning settings (Dezuanni, O’Mara, and Beavis 2015; Dikkers 2015; Farber 2015; Overby and Jones 2015; Petrov 2014). In our earlier work, which involved a study of family contexts, we found that some of the most productive family engagements around digital culture happened when parents and youth were both bringing expertise to the table and when the parent was also learning, such as engaging in a shared photo or web-development project (Ito et al. 2010). A growing number of published guides offer ideas for shared tech projects to bring families together (Buechley et al. 2013; Denmead 2010; Frauenfelder 2014; Wilkinson and Petrich 2014). Projects such as Family Creative Learning, designed by Ricarose Roque and sponsored by the MIT Media Lab, bring tech-making workshops to less resourced communities for parents and
children to learn together (http://family.media.mit.edu/). We hope that the stories we have shared and books such as these will help parents and educators understand, appreciate, and connect with their children around new media interests.

**Project-Based and Production-Centered**

Connected learning environments generally center on community-generated projects and activities. In the online affinity networks we studied, shared purpose and practices include competitions, creative production, and civic engagement. In all of these cases, participants are motivated by community impact, the value they provide to others, and recognition from others in their affinity network. In our online affinity networks, we saw knitters, writers, and game and video makers all organize competitions and contests as a way of driving creative production. Online affinity networks also organize around shared causes and campaigns. These projects and activities define community standards, and they provide an opportunity for people to develop collaborative relationships and roles in the network that are about supporting others, such as community organizer and coach. Shared projects and competitions are also contexts in which peers give one another feedback that drives improvement. Developing skills and expertise is a by-product of engaging in these shared practices and is not the primary purpose of participation. The learning benefits of participation are similar to those we have seen in educator-designed, project-based, and service learning: developing creativity, agency, and collaboration skills as well as domain-specific knowledge and competencies. More recently, the movement toward integrating makerspaces in schools, museums, and libraries has used new technology to reignite appreciation of hands-on, project-based learning.

Educators have successfully incorporated competitive and project-based dynamics in diverse subject and interest areas through math and robotics competitions, and through arts competitions such as those we saw in the Bollywood dance case. In addition to the competitive element, these challenges foster collaborative practices as participants contribute to shared projects. In Connected Camps, counselors organize design challenges and minigames in which campers hone their skills.
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through teamwork and friendly competition. Programs in coding and design support campers in pursuing creative and technical projects that benefit the community convened on the *Minecraft* server. For example, youth can program robots in the game environment that clean up, deliver mail, and build structures. In the game-design program, counselors and campers build games as well as play each other’s games, earning feedback and appreciation from the wider community.

At the YOUmedia Chicago space, creative production and performance are at the center of teen engagement. The mentors and librarians engage participants in shared projects such as developing a record label or a gaming podcast, or taking part in spoken-word competitions as a way of engaging youth in ongoing challenges. Participating in these projects provides a focus for engagement and collaboration as well as a setting where young people showcase their work and receive feedback and recognition.

Engagement in the Scratch community centers on creating and sharing creative work online, which includes games, animations, simulations, music, art, and stories. *Scratchers* interact and collaborate as part of their production through feedback and collaborative creation. Scratch is designed so that there is no direct messaging; all conversation takes place in public. The Scratch platform does not allow for collaborative accounts. However, *Scratchers* still create collaboratively using two main approaches: One approach is for the collaborators to discuss the collaboration on the publicly viewable comments and have the person who owns the project make the changes; another approach to creating a collaborative project is for one collaborator to create an initial project, and then each collaborator takes a turn creating a remix of the previous version, with other collaborators offering feedback and suggestions. Both approaches create vibrant discussion of aesthetics and technique, moments for growth and development, and implementation of a shared vision, with all activity focused on the product. In collaborative creation and individual projects, feedback is an integral part of skill development and creating social bonds. Because of Scratch’s community values, feedback is given in a positive way, often describing a path forward for the *Scratcher* and the project. It is rare that a *Scratcher* receives feedback that is negative or that points out an issue without someone in the community offering suggestions for how to fix the problem. The community
recognizes quality projects using the social nature of the community by giving the project “favorites” or “loves,” leaving comments, remixing, or recommending it to be featured on the Explore page.

**Openly Networked**

An important feature of online affinity networks that support connected learning is their openly networked quality. A significant proportion of the activities of the online affinity networks are visible and accessible online, which lowers the barriers to access to specialized communities, subcultures, and expertise. Casual participants can lurk and pick up knowledge without exposing themselves. For more experienced participants, online affinity networks provide a space to connect with fellow creators and experts, publish and distribute their work, and gain a following. Communities with positive learning dynamics all have norms and mechanisms to guard against bad behavior, trolling, and the unproductive forms of criticism and feedback that often accompany open online communication.

The Scratch online community has grown to nearly 13 million registered users and more than 16 million shared projects (Scratch 2016). Aspiring creators can view the work of fellow *Scratchers* across wide-ranging interests and with varied levels of expertise. Community leaders work actively to encourage positive peer communication and collaborative design work (Aragon et al. 2009). The Scratch team has also designed a set of features that encourages remixing of projects so that *Scratchers* can build on each other’s work. They are able to download the work of others, and edit and repost in ways that acknowledge the work that they are drawing from (Monroy-Hernández 2012). Connected Camps takes a similar approach in encouraging participants to build in a shared online world while at the same time enforcing positive community norms that guard against some of the risks of participation in an openly networked space. Counselors intervene in “griefing,” which is when players destroy each other’s creations or steal from one another.

The growth of digital interests (such as gaming, social media, and the digital media arts) and online affinity networks offers a broadened palette of possibilities for educators to interface with affinity networks. For example, the Connected Learning Alliance organized a youth art
and writing challenge in collaboration with the National Writing Project, the Young Adult Library Services Association, Wattpad, and the online visual arts platform DeviantArt to encourage educators to connect their students to online affinity networks. The “Twist Fate” challenge (https://clalliance.org/twist-fate/) prompted young writers and artists to develop a story or piece of artwork that transformed a hero into a villain or vice versa and submit it on one of the online platforms. Educators and artists selected and curated finalists into a book that is being circulated through public libraries around the country. We also see a growing number of educators connecting their local programs to online affinity networks by encouraging students to post their work on YouTube, blogs, and other channels. At YOUmedia Chicago, all the programs make an effort to share creative work outside of the physical space. For example, a group interested in gaming produces a game-review podcast that it posts online. The YOUmedia fashion program ran a public showcase and documented the work on a Tumblr blog. In this way, even locally run programs can benefit from participating in openly networked spaces and connect with specialized affinity networks.

We see some emerging examples of schools recognizing online portfolios in platforms such as DeviantArt for the visual arts, or students aspiring to be video- and filmmakers seeing Vimeo and YouTube success as a stepping-stone. Some universities have taken the bold step of offering esports scholarships. As engagement with online affinity networks and digital networks becomes more commonplace and crosses generational lines, we expect that achievements and social connections from the online world will increasingly play a role in institutionalized forms of opportunity. We look forward to the day when One Direction fanfiction will make its way onto an application for college or for a job in the publishing industry. While we still have a long way to go to connect the engagement and learning in online affinity networks to the lives of diverse families and to our educational institutions, we see promising trends and inspiring efforts across a wide range of organizations and communities. We hope this book contributes to supporting and fueling the momentum of these efforts.