

Leveling Up: Connected Mentor Learning in a Digital Media Production After-School Space

Nathan C. Phillips

University of Illinois at Chicago
phillipn@uic.edu

Virginia Killian Lund

University of Illinois at Chicago
vkillianlund@uri.edu

Abstract

This article introduces mirrored practice of leveling up as a model for educator learning grounded in connected learning and the connected mentor framework. Our purpose is to introduce this model and share examples of how it can be enacted. We argue that the model is a rich and successful way for youth development professionals to expand their capacities as educators and to support expansive possibilities for young people's learning. The model supports all educators' learning and growth, but it is particularly applicable to mentors working in interest-driven, informal learning environments like makerspaces and YOUmedia learning labs. The model is drawn from our analysis of 2 years of ethnographic observations in an after-school digital design studio housed in an urban public high school in Chicago. We describe mirrored practice as the mentors using the same principles and tools to learn that their students utilized. In the model, leveling up means that both students and mentors are supported in constantly moving towards progressively complex tasks, knowledge, and understanding. Methods of data collection include video- and audio-taped observations and interviews with digital media mentors.

Key words: mentor learning, connected learning, professional development, interest-powered learning environments, urban education

Introduction: Mirrored Practice of Leveling Up

While there is a significant body of research about teacher learning and professional development in schools (e.g., Wilson & Berne, 1999), far less research has focused on teacher learning and professional development for educators in out-of-school contexts (Woodard et al.,



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2017). Still less has focused on the strategic and ongoing professional development of mentors and educators in informal, interest-powered learning environments such as makerspaces and media labs. The past decade has seen a significant increase in these kinds of learning contexts (Halverson & Sheridan, 2014). For example, as of our writing, YOUmedia Learning Labs, digital media spaces for teens installed in libraries and community centers, have grown from one center in Chicago to multiple centers in 35 cities across the United States (YOUmedia.org, n.d.). Many other similar spaces have opened in high schools, community centers, museums, and libraries. Learning in these kinds of spaces has been theorized over the last 40 years as researchers have drawn on empirical studies of learning across people's lives. For example, researchers have theorized learning as social (e.g., Vygotsky, 1978); embedded in ecologies (e.g., Barron, 2006); drawing from culture, language, and community assets (e.g., Gonzalez et al., 2005); woven with identity constructions (e.g., Nasir & Cooks, 2009); and developing expertise (Crowley & Jacobs, 2002).

Less theorized is teaching in informal, interest-driven learning spaces, and contexts of media production (cf., Hobbs & Coiro, 2016). Makerspaces and media labs are typically staffed by mentors tasked with helping youth articulate and discover interests and passions. Mentors in these spaces also connect youth to resources, materials, and opportunities to explore and engage in their interests. Mentors are integral to young people's engagement in these learning labs (Barron et al., 2014; Liao & Sanchez, 2019; Association of Science-Technology Centers, 2014). These mentors are youth development professionals working in unique contexts that demand they create tailored, in-the-moment designs for learning and development. Such mentors are well served by ongoing, local opportunities for professional development focused on these kinds of pedagogies (Larson et al., 2015).

One setting where this kind of professional development is taking place is within networks of out-of-school educators influenced by the principles of connected learning (Ito et al., 2013). For example, Chicago youth development educators created the connected mentor framework (Ching, 2014) to support mentorship in informal, interest-driven, youth learning environments. In this paper, we describe the possibilities of one model of professional development rooted in principles of connected learning (Ito et al., 2013) and the connected mentor framework (Ching, 2014) for mentors who work in informal learning contexts. We call this model *mirrored practice of leveling up*. Although we have given this model a name, we did not create it. Rather, we saw it enacted by mentors working in an after-school informal learning space for digital media production as we were conducting ethnographic research there. In this paper, we call the informal learning space the digital design studio (DDS), which is a pseudonym. Our purpose

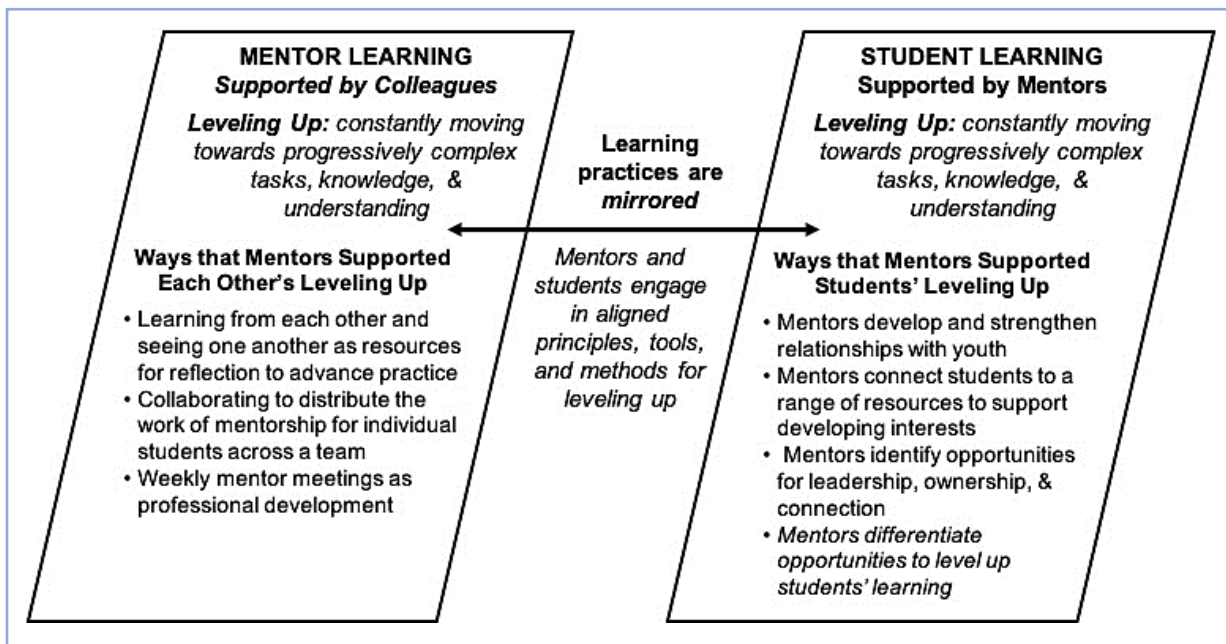
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here is to introduce this model and share examples of its enactments because we believe it is a rich and successful way for youth development professionals working in interest-driven spaces to expand their capacities as educators. First, we briefly introduce the model before describing our process for identifying it. We then flesh out the model with examples from our research. Finally, we identify how youth development practitioners might utilize the model in their own work.

The Model, Introduced

The model can best be understood as a weaving together of its component parts: *mirrored practice* and *leveling up*. Figure 1 is a visual depiction of the model and includes a description of each of the component parts of the model.

Figure 1. A Visual Depiction of the Model: Mirrored Practice of Leveling Up



Mirrored Practice

The processes and practices of mentor professional development at the DDS were designed and enacted by the mentors themselves in collaboration with Don (his real name), one of the co-directors of the project that established the DDS. These efforts were intentional and thoughtful, and they were part of ongoing practice. In other words, the mentors didn't attend professional development workshops or bring in outside consultants or learn in ways that were external to their everyday practice. Instead, they created and carried out a process of learning for

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themselves that involved working to systematically grow and improve their capacities and strategies for teaching in the DDS.

We call their professional development process *mirrored practice* because it reflected what the mentors were doing in their work and teaching with the youth who came to the DDS. In other words, they learned utilizing the same principles and tools that their students utilized to learn. And they taught each other in the same ways that they taught their students. The mentors called these principles and tools of teaching and learning *leveling up*.

Leveling Up

When talking about what they were trying to do in their teaching, the mentors referred to their practice as *leveling up* or *progressive complexity* (throughout the piece, we use “leveling up” and “progressive complexity” interchangeably because that is how the mentors used the terms). At the beginning of the year, project co-director Don asked the mentors what aspects of their work they wanted to focus on for their professional development. Don proposed several areas of possible improvement included in the connected mentor framework (Ching, 2014). The framework drew on connected learning principles (Ito et al., 2013) applied to the work of mentoring and included “progressive complexity” as one of its “critical ingredients.”

The framework defined progressive complexity as “getting better.” The mentors understood it to mean meeting a student learner wherever they were in terms of interest, knowledge, and capacity and then supporting that student to reach the next level of interest, knowledge, and/or capacity. In other words, mentors supported students in constantly moving towards progressively complex tasks, knowledge, and understanding. There were no externally identified or pre-set definitions around what might constitute the next level for student learning and engagement. Rather, mentors assessed students’ interests and capacities, usually on the fly, and then looked for ways to support students in leveling up their interests and capacities. Mentors did this by identifying ways that they might introduce a tool, or a practice, or a method that would build on students’ interests or current knowledge. Mentors would then guide students towards whatever might be next steps in their learning—introducing progressively complex tools, practices, or methods. Mentors especially took up opportunities to move students towards production-oriented practices over consumptive ones.

In our observations, these practices of leveling up happened multiple times every day. The mentors were constantly keeping an eye on students’ interests and engagement as students moved among the multiple resources available to them in the DDS and tried out things they

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were interested in. For example, when a mentor observed a student playing video games, she would say, “have you tried coding to create games?” Or when a mentor saw a student listening to music, he would say, “do you want to create and record your own music?”

Because the mentors’ professional development mirrored their teaching practice, they also focused on their own leveling up. In weekly meetings with the mentoring team and co-director Don, the mentors would reflect on their teaching practices, citing specific examples from the previous week, and then identify ongoing goals that they wanted to reach with regard to their own teaching. These goals were based on starting where they were in their teaching practices and identifying the next step of growth, just as they did in supporting students’ leveling up.

Don visited with mentors in other locations and oversaw programmatic efforts across the larger project. This meant that while Don was present for weekly reports and goal setting, he wasn’t mandating nor instituting a particular professional development approach. And Don wasn’t there during the week when the mentors worked to level up their own practice. Both in the weekly mentor meeting and during the week, the mentors supported each other in working towards their goals. They would identify for themselves and others the ways they were leveling up. They would also note specific events that pointed towards missed opportunities or possibilities for improvement.

Methods

Research Questions

We conducted ethnographic observations at Mullen High School (a pseudonym), a neighborhood public school on the Southwest Side of Chicago. Mullen housed the digital design studio that was open every day after school for students to drop by and use available resources. As researchers, we have studied a range of interest-driven, drop-in spaces like the digital design studio at Mullen in order to better understand informal teaching and learning. Our goal in this and other studies is to deeply explore and describe what teaching and learning look like in order to broadly inform educational practitioners and more specifically inform those who informally teach and mentor youth.

Our initial research question focused on students’ individual learning in the DDS: What do young people do when they have an abundance of resources available to learn but no structured teaching? Because our research was intended to describe learning in its complexities as it took place day-to-day, we used ethnographic methods (Spradley, 1980). Ethnography is a

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research practice that involves long-term observations in order to describe cultures, and it has a long history and increasing importance in educational research (Beach et al., 2018).

Ethnography is not intended to generalize but rather to describe cultural practices after extended observations. Our observations took place over 2 school years, which we refer to here as Year 1 (Y1) and Year 2 (Y2).

Early in the 1st year of observations, as we sought to answer our research question through observations, we realized we were wrong about there being no “structured teaching.” While it wasn’t immediately obvious to us, it became clear over our first few months in the DDS that the mentors had a highly structured method of teaching. It was just that their method was flexible and adaptable to support each individual learner. Recognizing this, the locus of our exploration of learning moved away from student learning and towards mentor teaching and professional development. We asked new research questions: How do mentors in the digital design studio structure and tailor learning opportunities for each student? How do mentors develop and expand their individual and collective practices of mentorship?

Research Site

Convergence Academies

The DDS was built as part of a grant-funded university–school partnership. The community outreach arm of the university that partnered with Mullen High School secured federal funding to create a whole-school digital integration project. They called this project Convergence Academies (its actual name at the time of our research and now a research and design agency called Convergence Design Lab). Features of the Convergence Academies project included ongoing professional development for teachers and school leaders, the creation of the DDS, and partnerships with professional artists. As a research team, we were not involved in the design, implementation, or evaluation of the Convergence Academies model. However, we did share our initial findings approximately every semester with the Convergence Academies team in order to inform ongoing design and implementation efforts.

Mullen High School

Administrators and teachers at Mullen High School applied together and were chosen as a site where Convergence Academies would install a digital design studio. According to school district demographic reporting (and using district demographic categories), during the years of study, of Mullen’s 300 students, 53% were identified as Black, 30% Hispanic, and 12% White.

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Students designated as low income comprised 94% of the school's population, 37% qualified for special education services, and 5% were considered limited English proficient.

The digital design studio was open to all students after school as a drop-in space. The studio was designed through a user-centered, participatory process involving students, administration, teachers, and mentors. The DDS was set up in an old teacher workroom. It featured furniture that could easily be moved and rearranged into a variety of configurations. It was equipped with resources for hanging out, messing around, and geeking out (Ito et al., 2009) with digital media. These resources included video game systems, a 3D printer, guitars, keyboards, turntables, illustration tablets, laptop and desktop computers, still and video cameras, greenscreens, lighting equipment, and robotics kits. The studio was open for 90 minutes every day after school and was staffed by at least two mentors who supported students' interest-driven work and learning. During that time, students could drop in to work on projects, hang out with friends, and utilize studio resources.

Participants

This paper focuses primarily on the professional development of mentors, co-constructed during weekly mentor meetings and through weekly mentoring practices. Don, the Convergence Academies co-director, generally facilitated these meetings, which were attended by all of the mentors. The meetings followed a familiar structure that made space for each of the mentors to share successes and challenges from the week and to collectively set goals. After the weekly mentor meetings, Don would usually stick around for a few minutes as students started to arrive in the DDS after school. He would then put on his bike helmet, pack his backpack, and leave to attend to other project duties.

In the Convergence Academies project, the mentors were referred to as digital media mentors or DMMs for short. The mentors were hired by the university partner and paid through grant funding. In Y1, we observed 5 DMMs: Luke, Sean, Dawn, Dina, and Ira. In Y2, we observed two returning DMMs (Luke and Sean) and one new DMM (Maria). Co-director Don and all of the DMMs have chosen to be named in this paper. Unless otherwise noted, all other people and places are pseudonyms. There were fewer DMMs in Y2 because of a decrease in funding. The mentors were all in their 20s and early 30s. Like the Mullen students they worked with, the mentors identified in diverse ways with regards to race; experience with poverty; ethnicity; sexual orientation; and family, language, and cultural background. We had extensive conversations with each of them about the ways they identified. They also spoke about how

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their identities intersected with students at Mullen. Unfortunately, given the space we have in this paper, it is not possible to report on all aspects of each of their rich, complex identities and cultural, linguistic, family, racial, and ethnic histories. Instead, we report identity shorthands that each of them felt were important for us to share in this piece:

- **Don.** Don is mixed race (Korean and White). His father is White and his mother is Korean. Don was born in Korea.
- **Luke.** Luke's father is from India and his mother is from the Philippines. He is Asian American but noted that he is often seen by others as racially ambiguous.
- **Sean.** Sean is White.
- **Dawn.** Dawn is Korean American. She is also queer.
- **Dina.** Dina is White. She was born in Poland and immigrated with her mother. Dina also noted that she faced economic hardship while growing up.
- **Ira.** Ira is African American.
- **Maria.** Maria is Latina and is bilingual.

All of the mentors worked as professional artists in a variety of modalities, including visual art, music performance and production, and poetry. Additionally, all of the mentors had prior experience working in youth development, and were well versed in core competencies of mentorship, including observation and assessment; building quality relationships with youth, family, and school; promoting youth engagement; creating rich and developmentally appropriate learning environments; and cultural responsiveness (National Afterschool Association, 2011). In spite of their prior experience in youth development, the context of elective learning spaces was new to nearly all the mentors.

Researcher Positionalities

Nate (first author) is a White man, and Virginia (second author) is a White woman. Both of us are former schoolteachers, and we also both have experience as youth mentors in out-of-school contexts. Nate primarily conducted ethnographic observations in Y1, and Virginia primarily conducted observations in Y2. When observing, we would sit in a conspicuous place in the digital design studio underneath a whiteboard. Because any student could drop by anytime, there were sometimes newcomers. To explain our presence to newcomers, we would draw a thought bubble on the whiteboard above where we were sitting that said something like, "I'm Virginia. I'm a researcher taking notes on what's happening. Come say hi!" We got to know the students we saw every week, and sometimes they or the mentors would draw us into conversations. Occasionally, we would step in to consult on a technology problem or to answer

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a student's question, but we mostly stayed on a couch or chair against the wall, taking notes. Over the 2 years we spent in the DDS, we developed closer working relationships with some of the mentors whom we saw more often. We still cross paths with a couple of them in our shared out-of-school learning networks in Chicago. Since our active observations ended, we have conducted follow-up interviews with the DMMs and asked for their responses to our analyses.

Data Collection

Our observations at Mullen High School were focused on student and mentor learning in the design studio. The 60+ hours of ethnographic observations in the studio that inform our findings span 2 years. Y1 (2014-2015) was the first year of the DDS's operation at Mullen High School. In both Y1 and Y2 (2015-2016), we typically conducted observations weekly for 2 to 4 hours. Each observation began with the weekly 1-hour mentor meeting attended by the DMMs and co-director Don. After-school hours for students in the studio immediately followed the meeting. Typically, our observations included the entire after-school session, during which we recorded field notes. We audio recorded all mentor meetings; segments of these meetings were video recorded.

Analysis

Following the ethnographic research cycle (Spradley, 1980), and utilizing qualitative analysis methods of constant comparison (Charmaz, 2006), we initially sought to answer our first research question. We wanted to understand youth learning in an interest-driven space when teaching is unstructured. As we observed and compared our ongoing data to our question, we came to understand that teaching in the DDS was structured and carefully designed. In line with ethnographic methods, we adopted new research questions and sought to understand the DMMs' practices of mentorship and the ways they constructed their own learning cycles.

In doing so, we compared our ongoing data collection to previous data and to relevant literature. We met together regularly to identify categories and themes across our data in order to understand and describe the structures of teaching and professional development. For example, we identified practices of leveling up, which we observed in mentoring and in professional development. Seeing this category in two domains—both the domain of teaching by mentors and the domain of learning by mentors—led us towards naming and describing the model of mirrored practice of leveling up. Through this process, we explored how the DMMs took up the idea of progressive complexity within the context of their weekly mentor meetings and in their practice with students during after-school time. We read across field notes and

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interview transcripts, attending to the ways in which DMMs reflected on their practice, supported one another's learning, and planned for opportunities to enact progressive complexity.

Findings

In our analysis, we found that supported by Don's questioning in mentor meetings, the mentors built their own structured professional development opportunities to improve in their chosen area of pedagogical practice: leveling up. In their practice, the mentors applied principles and tools of connected learning and connected mentoring. They applied these principles to their own learning while simultaneously employing those same structures and tools in support of students' progressively complex practices. In particular, in weekly mentor meetings and in our observations of mentors working with youth after school, we saw the connected mentoring principle of progressive complexity mirrored across the mentors' personal professional development and in their teaching practices. Across field notes, audio, and video data, we saw mentors approach their work with youth as an ongoing and ever-unfolding practice of leveling up youth interests. The practices of leveling up were mirrored in the mentors' professional development structures. They enhanced and refined their individual and collective capacity to "level up" mentoring in an interest-powered context.

In order to flesh out the mirrored practice of leveling up across mentors' teaching and learning in the DDS, we begin by offering some examples of leveling up as it was expressed in the daily mentoring practices of the studio. We will then explore the mentors' orientation towards leveling up through and with their own teaching practices. Finally, we will detail some of the organizational and practical structures of professional development in the studio that supported mentors in understanding and enacting opportunities to level up learning.

Leveling Up Student Learning Opportunities

The DMMs' focus on progressive complexity attuned them to leveling up the learning opportunities of students at the studio. We observed several ways that the mentors learned to level up student learning, including developing and strengthening relationships, connecting students to a range of resources, seeking out opportunities for student ownership and leadership, and issuing challenges to groups of students as well as to individuals.

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Developing and Strengthening Relationships with Youth

Leveling up learning opportunities in the ways we describe in this model requires mentors to understand students' interests at any one moment. Mentors must also track how those interests change and develop across days and weeks. In order to attend to where students are and where they might go next as they level up their learning, the mentors have to know them well. The mentors worked to support students in leveling up their learning from the moment they arrived for the first time. As examples, a student who came into the DDS and started listening to music was asked if they wanted to try out the keyboard. A student who came in and started fidgeting with Legos was asked if they wanted to try building something with digital drafting software.

However, the pedagogical power of leveling up is built on relationships that the mentors developed and strengthened over days, months, and years. In weekly mentor meetings, the mentors talked about students by name. They identified what regularly attending students were working on in the DDS and how these students might be challenged to level up. Only two or three mentors would be in the DDS each day after school, so their conversations served to inform each other about students' engagements in the studio when any of them were not present. Every day we observed the mentors developing and strengthening their relationships with youth. This allowed mentors to build trust and support leveling up.

Students and mentors laughed together. Students shared challenges and experiences that included family and peer relationships, interactions with teachers and administrators, and difficulties with schoolwork. Mentors listened and offered encouragement and insights. Mentors tracked the daily and weekly progress of regularly-attending students so that they could suggest the next level of engagement for whatever tool or skill currently captured each student's interest or curiosity. The mentors also monitored long-term possible pathways for students. Leveling up relationships meant that when students accomplished something in the DDS, the mentors tried to help them see horizons of opportunity opening up ahead of them. For example, one afternoon, a sophomore regular, Kiara, worked on building a small circuit to activate different colored lights. DMM Luke continued to encourage her as she worked at it—sometimes frustrated, sometimes laughing. When she completed the circuit, she excitedly called to Luke to let him know. Luke said to Kiara, "See what you can do when you stick with something? You could do anything. That's engineering. You could get a job doing that." Kiara smiled wide. "I could work [here] at Mullen." "Kiara," Luke replied, "you could work at NASA."

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Connecting Students to a Range of Resources to Support Developing Interests

When one student, Manny, was interested in DJ-ing, the mentors connected him to another media arts organization with a vibrant DJ community. In the DDS, the mentors shared tools to advance his skills at beat-making, and they introduced him to a student who shared his interest in using music to explore loss and grief. When Kevin, a junior, was interested in designing 3D printed models, the mentors made sure he had modeling clay available so he could make tangible test representations of his designs as he worked to develop them in Tinkercad (3D modeling software). As Kevin's work progressed, the mentors made sure he was enrolled in art classes at school. The mentors also connected with Kevin's mother about other art classes available in the city.

The ways the mentors came to understand and enact progressively complex opportunities for student involvement moved beyond their initial approaches. At the start of Y1, the DMMs had incentivized student participation by offering "points" for completing activities. The mentors also issued one-size-fits-all pre-set challenges. During Y1, and continuing in Y2, the mentors learned to consider a range of resources—resources that were relational, spatial, digital, and material, and that existed both within and outside of Mullen High School. These shifts in mentoring practices were directly connected to the mentors' mirrored practice of leveling up. As they built relationships with students who came into the DDS, they worked together in mentor meetings to describe next steps for those students. They set goals to improve their own mentoring practices by focusing on leveling up students' learning opportunities.

In this paper, we largely detail the trajectories of mentors and students whom we observed over weeks, months, and years. But the mentors' growth in methods for offering resources to support students' developing interests was also evident when a student arrived in the DDS for the first time. While mostly regulars visited the DDS each day, it was not uncommon for a student to peek into the room and say, "What is this place? What's going on here?" Regulars also brought friends from time to time who had not previously visited the DDS. At the beginning of Y1, when mentors met students for the first time, they would suggest generic challenges or activities. But as they leveled up their own mentoring capacities in the DDS, they would greet newcomers with a more tailored question, "What do you want to do today?" In this way, leveling up students' learning based on their interests could begin immediately, even if the mentors saw a visitor only once.

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Identifying Opportunities for Leadership, Ownership, and Connection

As Kevin progressed in his use of 3D printing equipment, the mentors gave him the role of teaching new students to use the software and equipment. When Lamar showed an interest in and talent for fixing phones, they directed students to seek his help when their devices weren't working. When Lamar seemed to be looking for ways to connect with the mentors when there were fewer students in the space, DMMs began welcoming his help in cleaning up the DDS at the end of the day. Lamar used this time to talk with the mentors about his day and his interests. Mentors used these opportunities as ways to motivate students as they developed increasing expertise in areas of interest as well as ways to support the advancement of skills by offering increasing independence and responsibility.

Differentiating Opportunities to Level Up Students' Learning

Over time, the mentors came to understand the ways individual students responded to different methods for leveling up student learning. The DMMs were observant and mindful of students' motivations for being in the DDS. For example, mentors noticed that when they directly challenged Keith to level up, he could be "a little combative," but when he saw a mentor engaged in a printmaking activity that interested him, he joined in. As DMM Maria got to know him, she attended to his motivations. Keith was drawn to the printmaking activity because he wanted to bring something home to his elementary school-aged sister. In mentor team discussions, Maria resolved to introduce more "analog" art materials for Keith to experiment with. In the following weeks, she introduced other art projects that Keith could make for his sister, including vinyl decals and buttons. Maria never directly challenged Keith to engage with these materials. She simply set up the materials in a visible place and began to make things on her own. She offered an open invitation to engage.

Seeing and seizing opportunities to level up individual students' engagement and exploration of interests in varied and creative ways were central to mentors' teaching practices. In a space where learning is instigated by students' interests and curiosities, formal curriculum means something different. Informal, interest-powered learning environments would betray their purpose if learning designs centered on pre-ordained lessons and pathways. At the DDS, leveling up student learning began with developing meaningful relationships with youth while embarking on an ongoing process of conversation and observation to establish learners' passions and skills.

Every student who walked in the door was greeted warmly by name, and if their name was unknown to the mentors, they quickly went over to introduce themselves and welcome the

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student to the DDS. Students were asked about their interests. Mentors demonstrated care in the seriousness with which they took students' concerns about school, relationships, or other elements of life; they were playful, thoughtful, and encouraging as the mood and moment demanded. They noticed things that students cared about, recalled students' aspirations, and introduced new possibilities based on those observations. Through this ongoing process of conversation and observation, mentors engaged in the leveling up practices described above: they developed and strengthened relationships, they connected learners to a range of resources and supports, they sought out opportunities for leadership and ownership, and they designed and issued opportunities to learn that were specific to students' interests and needs.

Leveling Up Mentors' Practice

The mentors at the digital design studio were experienced teaching artists and youth development professionals. Throughout our 2 years of observation, mentors actively and intentionally sought out ways to improve their approaches to teaching and mentorship. They challenged each other to align practices with youth-centered ideologies and critically considered their broad and specific interactions with their students and their students' learning. They saw each other as valuable resources and reflective partners and were creative and strategic in both formal and spontaneous collaborations with one another. A primary setting for their collaborative reflection was their weekly hour-long meetings. These meetings were loosely structured but explicitly focused on improving practice. Don facilitated most meetings, and reflective structures developed over time as the mentors worked to improve their practice around their chosen area of focus--progressive complexity in their mentoring. While the primary setting for reflection was these weekly meetings, mentors also looked for opportunities to learn and reflect together across their moment-to-moment activities. What follows are descriptions of mentors reflecting on and collaborating around leveling up their practice in more formal (e.g., in weekly meetings) and less formal (e.g., everyday moments of mentoring) ways.

Learning From Each Other and Seeing One Another as Resources for Reflection to Advance Practice

Through their focus on progressive complexity and their application of progressive complexity to their own practice, DMMs came to see one another as resources for reflection to advance their mentorship practice. Just as their relationships with students developed and strengthened during their time in the DDS, the mentors' relationships with each other built and allowed them to rely on each other as reflective instructional coaches. Each week, the mentors would begin their meeting with a structured reflection on the last week. Don would go around the table and

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ask each of them to share “roses, buds, and thorns.” Roses were successes during the prior week. Buds were new possibilities that were not yet realized. Thorns were struggles.

Maria, a new mentor in Y2, took on the role of documenting teaching and learning in the studio by writing reflective blog posts. This public documentation gave the whole mentoring team an opportunity to review and reflect on her documentation in weekly meetings. Maria was initially quiet during mentor meetings as the DMMs reflected on their practice and shared insights into possible improvements. Over time, however, Don drew Maria into the conversation by highlighting her role as documenter in the DDS. In mentor meetings, Don shared the digital photographs and short descriptions Maria had posted to the DDS’s process blog as a way of probing her to reflect on her own practice. He also used these blog posts as a way to hold up a mirror to the practice of more experienced mentors.

The DMMs expressed an appreciation for informal feedback provided by their colleagues. In Y1 and Y2, Luke was aware of the tension between providing a space where students could be themselves and a space where all students felt safe and comfortable. He often experienced this tension around the language that students used. Luke learned ways of guiding students away from homophobic language from Dawn in Y1 and taught that practice to others in Y2. Dawn had observed Luke stopping a student from using homophobic language in Y1. After programming had ended for the day, Dawn suggested that he could use those moments as times to foster empathy in students. Luke then began adopting the practice of taking students on a short walk, asking them to think about someone they cared about—a brother, sister, little cousin—and asking them to think how they would feel if someone made that person feel bad about who they were.

A Nuanced Understanding of How Mentors Can Work Collaboratively, Distributing the Work of Mentorship for Individual Students Across a Team

Keith, a Mullen student, had been coming to the studio fairly consistently since it first opened. He often expressed frustration with school. In Y2, Keith, then a junior, typically entered the DDS, said hello to the mentors, and then hung out on one of the high-backed couches. In mentor meetings, the mentors mentioned wanting to engage Keith, especially as he had been talking openly about dropping out of school. As described above, the mentors noticed that Keith did not respond well to direct “challenges” like the ones the mentors often issued to other students. In a meeting, Sean noted, “I think us challenging him to do things actually has adverse effects.”

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Luke noted that during Y1, he and the other mentors had come to a way of responding when Keith became “a little combative” when challenged. “Sometimes last year Dawn, Dina, and I would bounce kids around.” Luke meant that when a student wasn’t responding to offers of support from one DMM, another would step in. The mentors planned to adopt that approach with Keith in the coming weeks. Maria, who was new to the DDS at that time, stepped in to encourage Keith’s interest in art and got to know him better.

Similarly, the DMMs coordinated efforts to support Manny, a sophomore, in his effort to record a mixtape. Sean worked closely with Manny on his technical skills, bringing in records from Sean’s personal collection and teaching Manny to use beat-making software. Luke connected Manny with other students who were interested in rapping and came regularly to the DDS. Luke arranged space and equipment in an adjoining storage room where these students could work on their freestyle skills in a semi-private setting. These efforts at distributed mentorship were coordinated and discussed in mentor meetings. Distributed mentorship reflected progressively complex enactments of the kinds of personalized learning opportunities the DMMs were learning to provide.

Structuring Mirrored Practice for Educators and Learners

The leveling up that mentors did for students, and the leveling up they applied to their individual and collective teaching practices, were enabled and enhanced by the professional development structures that Convergence Academies and the mentorship team put into place. The professional development structures mirrored the kinds of structures and practices mentors leveraged in developing progressively complex learning opportunities for their students.

From the outset, Convergence Academies co-director Don used connected learning principles (Ito et al., 2013) in his design of and supports for mentor learning by structuring professional development in a way that was interest-powered, peer supported, and built on shared purpose. Early in Y1, Don began a mentor meeting by introducing the DMMs to a hypertext interactive fiction game he had created using Twine (see Figures 2 and 3). He created the game to introduce the mentoring team to the four pillars of the connected mentor framework (Ching, 2014): connection, reciprocity, progressive complexity, and empowerment.

Figure 2. A Screenshot of Don's Interactive Fiction Game

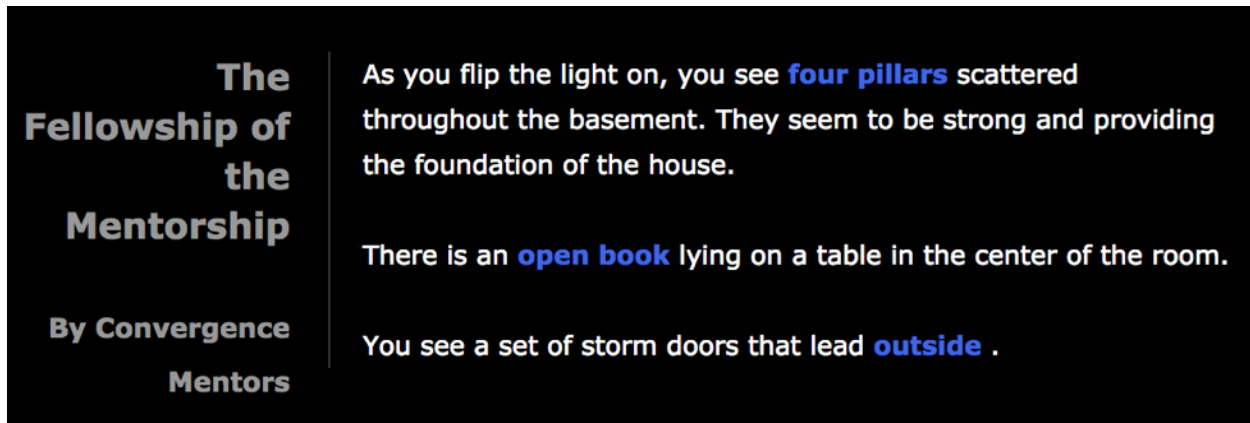
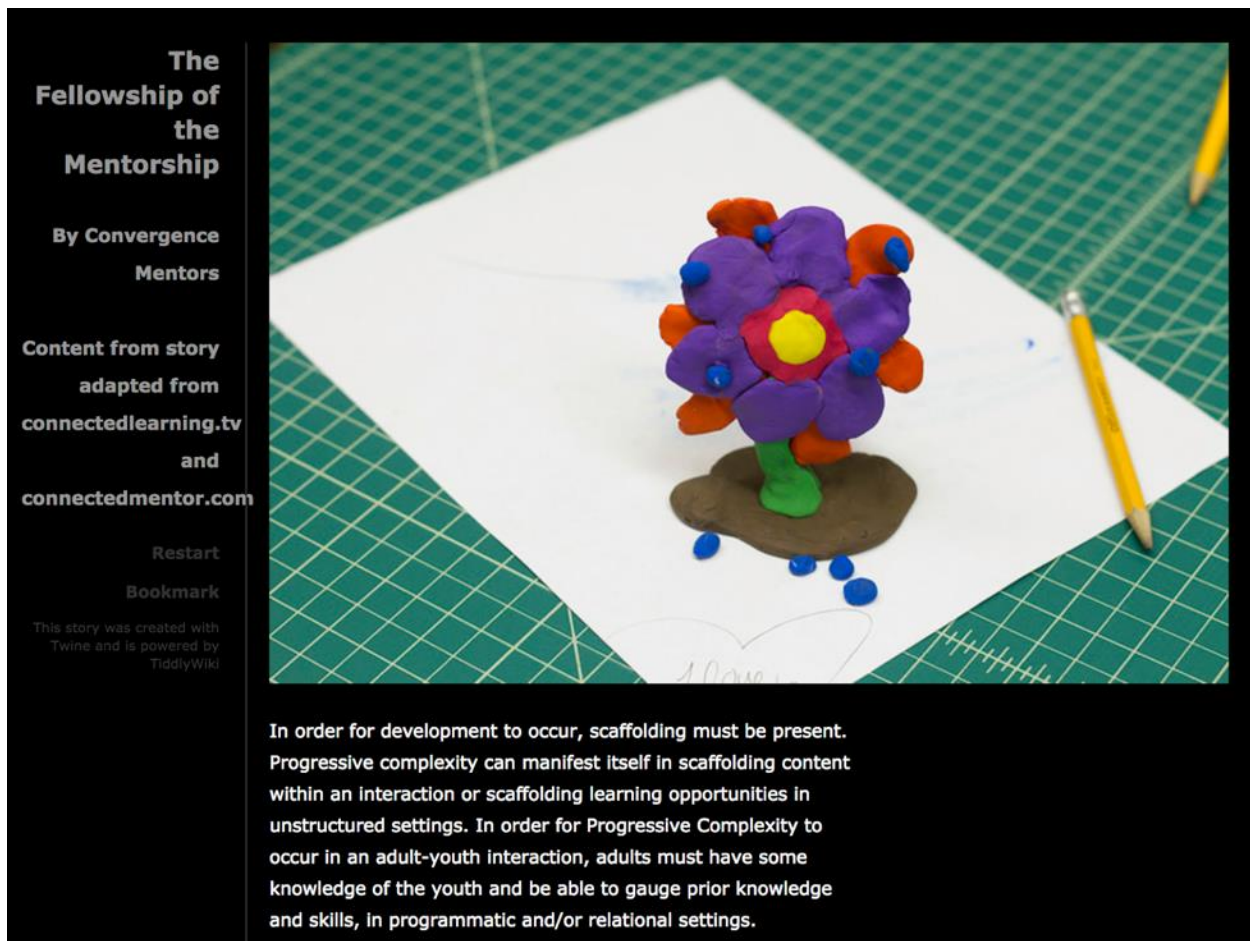


Figure 3. A Screenshot of the Introduction to Progressive Complexity Mentors Encountered in Don's Game



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To play the game together, Don read a story out loud that included choose-your-own-adventure-style choices that the DMMs might make for that year's professional development focus. Don read descriptions of the four pillars of the connected mentor framework and prompted them to choose one pillar as the focus of their professional development for the next year. After some reflective discussion about which pillars of mentorship they were already collectively comfortable with, the mentors chose progressive complexity as an area they wished to improve. Here, at the outset, Don mirrored the mentors' own practice with youth by working with the mentors in an interest-driven and digital environment to identify strengths and self-select an area of interest as a focus for development.

Weekly Mentor Meetings as Professional Development

In the 2 years that followed, the weekly mentor meetings served as regular points of reflection and strategizing for mentors learning to employ progressive complexity in their teaching. Don invited the mentors to reflect on the previous week and to set actionable goals for the coming week. Don modeled using reflections and goals as opportunities for mentors to level up their own practice. These meetings were rarely used for tasks like event or workshop planning; this was typically taken on by mentors during other planning times. Only very small portions of the meetings were dedicated to reminders or relaying messages from other stakeholders (e.g., "make sure you're updating the blog," "please ask students to complete a survey," "visitors will be coming on Wednesday").

Designing professional development in an interest-driven way and supporting that professional development through ongoing meeting structures that prioritized group time for improving instructional approaches created conditions that allowed mentors to level up themselves and their students.

Discussion and Implications

By focusing on ways to level up their pedagogical practices as they worked to level up the learning of their students, DMMs at the digital design studio at Mullen High School adopted complex, nuanced ways to support students' opportunities to learn in a connected learning environment. Conscious, continuous, reflective practice was peer-supported and interest-driven. Mentors enacted in their own professional development what they aimed to offer students: constant challenge (Ito et al., 2013) driven by interest in specific areas of improvement and supported by reflecting with and alongside others.

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By identifying a connected mentorship principle that they wished to enact for both themselves and their students, the mentors created a supportive space for strategic professional growth. Across multiple years of mentoring work, the DMMs intentionally put themselves in a place that allowed them to experience the types of learning opportunities they structured for their students. Though the mentors never explicitly talked about the connections between their own efforts to level up their practice and their efforts to level up students' learning, what we have called the mirrored nature of these two planes of practice were clear during our data analysis. We don't believe the mentors recognized the interwoven and reflective nature of their own learning and their teaching practice, but we have chosen to highlight the centrality of this mirroring because we believe in its power to support professional development and teaching practice in interest-driven spaces like the DDS at Mullen High School. And if youth development professionals are aware of the power of mirrored practice of leveling up, they can consciously apply this model to their own professional development in whatever settings they work.

How can youth development professionals working across many contexts, and especially those working in these free-choice, interest-driven spaces, put this model to use for their own professional learning? Innovative learning contexts such as the interest-powered drop-in space described here require innovative teaching and mentoring practices. The range of activities, needs, relationships, and possibilities in such a space can make implementing systematic, ongoing professional development for educators working in such spaces a challenge. By approaching professional development for mentors in such spaces in the same way that research suggests student learning should be approached in such spaces, mentors have the opportunity for constant improvement no matter their entry point, talents, interests, or connections with youth. Mentors have the opportunity to form collaborative, reflective communities around their own self-identified areas for growth. Just like their students do when mentors guide them repeatedly through leveling up, mentors gain practice in self-reflection and self-extension, learning to notice areas of potential and identifying actions they can take towards meeting new goals.

As ethnographic researchers who spent many hours observing mentoring practices in the digital design studio, we saw that the role of the mentors' intentional work to level up their own learning and practice as they worked to level up learning for youth in the studio—in other words, their mirrored practice—resulted in visible and concrete change and growth. Not all teaching and learning spaces for youth will allow for this exact type of just-in-time mentoring practice, but professional development for mentors working in all types of mentorship contexts can and should be interest-driven, peer-supported, and progressively complex. Our goal in

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sharing the model for professional and pedagogical growth we saw enacted by digital media mentors in the design studio has been to identify and flesh out a method for improving mentoring and youth learning that we believe is sustainable, actionable, and efficacious wherever it is implemented.

Mirrored Practice of Leveling Up: Principles of Professional Learning Across Contexts

Below we offer seven principles of professional learning within the model of mirrored practice of leveling up. These principles are intended to synthesize what we have learned from 2 years of observations in the DDS about mirrored practice of leveling up. We hope these principles will be useful for anyone engaging in educator learning and growth. We hope they will be of particular use to mentors, designers, and educators working across many contexts of youth learning including in schools, in out-of-school-time settings, community contexts, one-to-one mentoring, and tutoring.

Principle 1: Mirrored Practice

Offering professional development for educators in a way that mirrors the type of learning educators are facilitating for their students provides educators with opportunities for empathy, reflection, and insight. Mirrored practice can be distinct from leveling up. What methods are students engaged in for their learning? Are they connecting to online communities for feedback or affiliation? Are they creating digital or material artifacts? Are they building skills through practice? Educators' professional development could mirror any of these methods. For example, whatever the context for learning, educators can connect to online affinity groups aligned with their teaching interests to gather feedback and find collaborative partners. One model of mirrored practice for professional development is the Summer Institute in Digital Literacy at the University of Rhode Island. Hobbs and Coiro (2016) describe the ways this summer institute brings educators together for collaboration and creative production, mirroring the practice of young people in the libraries, schools, and youth-serving programs where these educators work and mentor. Whatever methods of teaching educators enact for students can be enacted in their own professional development.

Principle 2: Leveling Up

By incorporating leveling up in their professional development, educators adopt the mindset that there are always opportunities for expansion on current strengths and interests as well as opportunities to discover new paths for growth. Finding those opportunities and paths requires reflection, individually or within a community, on what is presently happening in one's teaching

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practice, what is needed by students in a given teaching context, and what next steps are possible.

Educators focused on leveling up might choose to follow one path of expertise as far as possible before exploring another. Educators might find that some opportunities for growth won't "unlock" until they have improved other interrelated areas. For example, "I can't increase student engagement until I earn student trust," or "in order to make better instructional decisions based on data, I need to learn more about observational assessments." In leveling up there is space for choice, adaptations, and iterations while pursuing ongoing improvement.

Principle 3: Interest-Driven Opportunities to Learn

In our research, we were impressed by the DMMs' commitment to their professional development and continuous improvement, especially in light of the fact that they were not bound by mandates or licensure requirements. Their commitment was evident in the enthusiasm they brought to conversations in their weekly mentor meetings as well as in the ways in which they reflected with one another throughout each week. Consistent with research on interest and engagement in other areas of learning research (e.g., Azevedo, 2013), the fact that DMMs were empowered to pursue their own interests in the course of their professional development enhanced their engagement with and commitment to that professional development. Creating interest-driven opportunities to learn could similarly support educators' motivation to engage with professional development.

Principle 4: Develop and Nurture Relationships With Colleagues and With Youth

Although the mentors in the DDS became skilled at offering opportunities for leveling up to any student who walked through the door, the students who identified and developed interests and expertise over time were those students whom the mentors knew the best. It may seem an obvious observation to note that as they spent more time with students, the mentors were better able to support learning, but time spent does not always equate to a trusting relationship that allows educators to gain meaningful insights into students' capacities, hopes, needs, and future visions for their lives. The mentors never took for granted the time that they spent with youth. They were always asking questions, checking in, hanging out, and listening closely.

To nurture these kinds of relationships with other educators requires the same kind of time and effort. Colleagues have to be scheduled to work together in order to get to know each other and develop relationships. Educators who work on their own (e.g., tutoring or training) have to seek out colleagues and communities with whom they can develop relationships.

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One aspect of these relationships that is perhaps underappreciated but potentially life-changing is the role of social capital. In their reflections on a decade of connected learning research and practice, Ito et al. (2020) note that in their research, relationships and social capital were central to expanding opportunities for youth. Mentors can broker social capital for young people, making connections to networks, experts, and friends, just as DMMs Sean and Luke did for student Manny when he was interested in DJ-ing. Mentors and educators in interest-driven learning contexts are sometimes not in roles that can lead towards advancement in their current organization or job. For example, there might not be a way to become chief tutor or head mentor. In these circumstances, relationships and social capital are invaluable to identifying and supporting the next steps of professional advancement. Colleagues, supervisors, and communities of practice can give recommendations for future employment opportunities and connections to social networks.

Principle 5: Supportive Reflection

Communities of practice, whether local to a teaching and learning context (e.g., co-workers) or distributed geographically (e.g., networks of fellow librarians, youth mentors, tutors, and coaches), can be particularly helpful to educators identifying next steps for leveling up. It is certainly possible to set goals for oneself and recognize, upon reflection, where improvement can come next. But it is tremendously helpful when colleagues can co-reflect or be on the lookout for points of possible improvement. Just as Dawn gently identified a way that Luke could improve his communication with students in the DDS, trusted colleagues can suggest areas of improvement and available resources.

Vulnerability was essential to the DDS' mentors' willingness to support each other. During the weekly mentoring meeting, they were safe to identify areas of failure that led to growth. There was not a presumption that everything would work out, but rather the recognition that they might try things that wouldn't work, and they could come back together to reflect, give new methods or ideas a shot, and set new goals. Educators working on their own or with colleagues can develop individual or collaborative practices of supportive reflection that operate within safe-to-fail learning environments.

Principle 6: Shared Purpose

The Convergence Academies project certainly had priorities and non-negotiables when it came to teaching and learning in the DDS. The project was focused on moving students towards building, producing, and creating. One way this was prioritized was by hiring mentors who were

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each working artists. Shared priorities ensured that everyone was on the same page with regard to the mentors' leveling up their own and students' learning. But shared purpose in the DDS also allowed for individual mentors to develop and cultivate purposes that fit within the larger umbrella. For example, DMM Luke established a purpose in his own mentoring to help young men recognize, develop, and deepen empathy and emotional growth. This purpose could be enacted only if other mentors picked up the slack in the DDS when Luke would leave for a walk with a student through the Mullen halls. Shared purpose for educator learning can recognize the unique roles different people are taking on for themselves with colleagues backing up those roles.

Principle 7: Educator Learning is Ongoing

Sometimes models for professional development in schools and other formal contexts involve a consultant or outside expert giving a presentation in the days before the school year begins or on a lone day set aside in the middle of the year for professional development. Mirrored practice of leveling up cannot work this way. Professional learning in this model must be ongoing and interest-driven. The model allows for stops and starts, changes of direction, new commitments, and trying the same idea again. When educator learning is interest-driven and ongoing, there is a shared commitment to growth. Leveling up takes on meaning in the contexts of day-to-day interactions and across years.

Conclusion

In this paper, we have introduced a model of professional development for youth-serving educators called mirrored practice of leveling up. Although the model is especially applicable to educators who work in informal and interest-driven learning environments, we have identified seven principles drawn from the model that apply to all educators. The model is grounded in connected learning (Ito et al., 2013) and the connected mentor framework (Ching, 2014) and comes out of our analysis of ethnographic observations over 2 years in an after-school digital media production studio, the DDS, housed in a public high school in Chicago. We are privileged to have spent 2 years with the mentors and youth who worked in and visited the DDS. Our hope with this paper is twofold: First, this paper can bring to light the thoughtful and impactful mentoring and professional development practices of those who worked in the DDS. Second, that sharing the mentors' practice can support educators working in wide contexts of learning to improve their own practice and level up learning opportunities for the youth they serve.

Author Note

This work was funded in part by the Hive Chicago Fund for Connected Learning at the Chicago Community Trust. While conducting this research, we had a design research partnership with Convergence Academies (now a research and design agency called Convergence Design Lab) that involved sharing findings to inform ongoing design decisions made by Convergence staff.

The authors are grateful to the youth, mentors, Convergence Academies staff, and school administrators who graciously invited us into the digital design studio and shared their space, learning, and mentoring with us for two years. We are also thankful for insightful and thoughtful reviews that helped us significantly improve the manuscript.

Virginia Killian Lund is now at University of Rhode Island.

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