



PROJECT MUSE®

Digital Tools in Urban Schools

Mahiri, Jabari

Published by University of Michigan Press

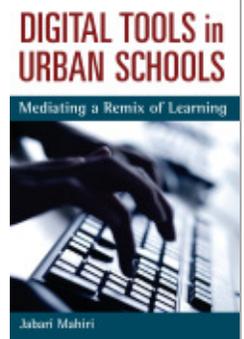
Mahiri, Jabari.

Digital Tools in Urban Schools: Mediating a Remix of Learning.

University of Michigan Press, 2011.

Project MUSE., <a href="

<https://muse.jhu.edu/>.



➔ For additional information about this book

<https://muse.jhu.edu/book/2393>



5 | A SECOND LIFE FOR LEARNING

With ever-expanding modes for making meaning, creating and enacting identities and social networking enabled by digital media, the roles and challenges of teachers are more crucial than ever. Consequently, the professional development of teachers has to activate instructional leadership that addresses the immediate dynamics of classroom practices and problems while simultaneously supporting and guiding teachers to imagine and implement new practices that effectively utilize appropriate, emerging digital resources for learning, communication, and creative production. This does not necessarily mean that earlier approaches and traditions will become obsolete. But the work of teachers themselves should make pivotal contributions to the new directions taken in the uses of technology for teaching and learning in order to best connect to, alter, or extend prior approaches to better serve the changing needs of students and society.

In line with these perspectives, the TEACH Project worked to facilitate and support teachers in leadership roles in their professional development. In the PD sessions, teachers were positioned not only to learn with each other but also to lead each other in learning about how to implement digital projects with students in their classes. In the process, with a particular focus on the classes of two teachers (Ms. Foster and Ms. Glide), we supported, observed, and documented ways that teaching practices changed through incorporating more technology into instruction. We also observed and documented ways that their students' learning changed in connection with these changing teaching practices. Additionally, we assessed a number of obstacles and challenges encountered by both teachers and students as they worked to improve the quality of teaching and learning in the intricate context of the continuation high school.

In this final chapter, I first review key obstacles and challenges in this school setting. Next, I consider the productive changes that occurred during the project with respect to the students' learning despite these obsta-

cles. Then I discuss vital aspects of the teachers' learning that occurred during the project. In addressing the learning of students and teachers, I make connections to principles of learning with new media (Gee 2004) and to principles of effective teaching from CREDE (Stoddart 2005) that guided the implementation of the TEACH Project. I also make connections to the National Educational Technology Standards for teachers and students that are emerging in the United States (see the appendixes in this book and International Society for Technology in Education 2008). Finally, I discuss implications for teaching and learning beyond the context of this unique urban school.

OBSTACLES TO LEARNING

At the beginning of the second week of the Second Life unit in Ms. Glide's World Media class, an African American male student who I had never seen in the class before walked into the computer lab. "Ms. Glide, how long do I have to be in your class?" he asked. She saw that he was already agitated. "From two to three," she replied. "Is that all we gonna do is be on the computer for an hour?" he continued. "I don't like that! That's why I be leaving. These classes are too long." Ms. Glide talked with the young man about what we were doing in the unit, and he settled down before long to begin working on the project. However, he soon became frustrated because the computer he was working on was moving very slowly.

Beyond problems with the technology itself, this scene marked issues of attendance and disaffection as clear obstacles to this student's opportunity to learn. Too often the typical practices of schooling define these problems as mainly residing within students themselves—the so-called oppositional personality that Ogbu (2003) and others have described at length. Yet we understood that critical challenges to students' as well as teachers' learning originated in larger structures and cultures of schooling in our society. I discussed some of the issues related to problematic aspects of schooling in this country in the first chapter, so here I will emphasize only a few things related to ways that students like those at V-Tech were pushed to the margins. I also address a bit more of the limits of teacher training in the effective use of technology.

In light of the myriad obstacles that their students faced, the teachers, administrators, and staff at V-Tech were committed to implementing its

“three R’s”: “relationships,” “rigor,” and “relevance.” Ms. Glide’s interaction with the disaffected student was a partial example of this. Yet the substance of many marginalized students’ experiences in schools does not reflect any one of these three R’s. Most often, they are not enabled through productive relationships with teachers and peers in conjunction with high expectations for rigorous work and productive behavior, though we know that high expectations of rigor for all students result in higher academic success. Students like those at V-Tech don’t usually see much relevance, particularly in terms of their cultural backgrounds, in much of what they have been asked to learn during their time in school. In many cases, schools primarily use discipline structures to address disaffection and defiance, despite their roots in other situational obstacles to learning. Then they create continuation schools that mainly work to isolate these students and further exacerbate the obstacles to learning they face. The work at V-Tech, as this book has shown, was exceptional in this regard.

Substantial research links low expectations for behavior and lack of cultural understanding to wide-ranging and frequently inequitable discipline practices (Gregory, Nygreen, and Moran 2006; Noguera 1995, 2003; Witt 2007). Witt (2007) analyzed comprehensive, state-by-state data collected by the U.S. Department of Education for the 2004–5 school year. He found that on average across all of the states in the nation, African American students are expelled at nearly three times the rate of white students. This expansive data also showed that African American students are not any more likely to misbehave than other students from the same socioeconomic backgrounds, yet they are punished more severely and more frequently than others for the same offenses (Witt 2007).

Noguera (1995) argued that the essence of many school approaches to discipline is the identification and segregation of “problem” students—separating the “bad kids” from the “good kids.” Yet, as Gregory, Nygreen, and Moran (2006) note, “such practices invariably reinforce stereotypes about ‘good kids’ and ‘bad kids’ and end up reproducing the same inequalities they were put in place to counteract” (145). They also remove responsibility from teachers and staff for reengaging these students in learning. Instead, teachers who may have begun their careers intending to be caring and stimulating fall into what Haberman (2006) described as a “pedagogy of poverty,” which includes acts of traditional urban teaching like giving information, asking questions, making assignments, monitoring seatwork, reviewing assignments, giving tests, assign-

ing homework, reviewing homework, marking papers, giving grades, and punishing noncompliance. The most extreme consequence of this kind of teaching, short of the students actually dropping out of high school, is their placement in continuation high schools that are prevalent throughout the country. According to Noguera (2003), these “punishment” schools become holding places for students who are deemed a threat to the education and safety of others, and he asserts that it is not coincidental that they come from the most difficult personal and social circumstances.

The predominantly African American and Latino students at V-Tech have experienced various combinations of these practices that have just been described. For compelling reasons, these students interpret and internalize their experiences with these schooling practices as being intricately linked to race—an aspect of inequitable differences in achievement that is simultaneously visible and veiled. So the obstacles to learning that are addressed in this section must be considered within this context of issues that have consequences for learning that can be at least as profound as the impacts of pedagogy and curriculum.

In addition to these structural issues, there were also a number of site-specific obstacles to students’ learning at V-Tech. Despite the school community’s commitment to its students, attendance was continually a problem for every class in the school. Not only would the students that were present on a given day not reflect the actual number in a class, but there would often be different groupings of the students each day. This problem was increased due to the fact that the main high school sent new students to V-Tech every week. Sometimes students would not attend due to lack of interest in what was going on in classes. They might even come and check on what was going on and then decide not to stay. As one student said after spending a few minutes in a class, “I’m ’bout to leave. I’m bored. School’s gettin’ boring.” On one occasion, this occurred even during Ms. Glide’s unit in the computer lab. A student that had not been present for a couple of days walked into the lab and said, “You all still working in Second Life. Why y’all doing that nonsense?”

But there were numerous other reasons for students being absent, due to problems they were encountering in their lives beyond school. For example, many would often change addresses frequently as their home situations changed. Many students had to work for a significant number of hours each week to help support their families or to support themselves. Sometimes there were traumatic events occurring in their lives,

as alluded to in some of the podcasts that were created in Ms. Foster's Hip-Hop Journalism class. At times, cell phones would ring in class, and students sometimes felt they needed to go out of the room to take the calls, because emergencies often occurred.

Problems with the use of technology itself also caused obstacles to learning and significant frustration for students and teachers alike. At times, the wireless connections would be down, or the MUVE itself would be down or moving very slowly or would require (as was the case with *Teen Second Life*) complicated processes for getting logged on. If a student was not able to complete the registration process all at one time, for example, she or he would have to start over from the beginning the next time. Telephone numbers were supposed to be used as part of the registration process, and some students did not have either cell phones or home phones. Additionally, as earlier noted, the principal had to initially get that site unblocked for use in the school before the program could be downloaded on the computers in the lab.

Some computers worked better than others, some would crash often, and some just needed repairs. Because of attendance or the uneven pace of digital work, students would be at very different places in their work on assigned projects. For example, one student exclaimed to the class, "You all building housing and stuff, and I can't even log in." Of course, at times, some students would get off task surfing to other websites or playing music or other games on their computers. Consequently, strategies were needed to harness students' creative divergences. Sometimes, however, music would be heard that was a part of a site in *Teen Second Life*. So music that was on task was sometimes hard to distinguish from other music that might be heard. On task or not, just the sounds of different music could cause dissonance during the unit. In one case, a girl tried to mediate between two others by saying, "Why don't both of you turn your music down? Let's act like we're in high school!" Because of the modular nature of work in the computer labs, there would also be multiple conversations going on most of the time, and the teachers could not completely monitor if they were always focused on the work.

Although, among other things, the project was designed to support the teachers' professional development with the use of technology, it was clear that they did not have effective training in this area in their teacher preparation programs. So another obstacle to learning with new media was the need to change the teachers' perspectives about teaching and to get beyond a certain amount of reliance on and comfort with more tra-

ditional methods. The teachers reported very little, if any, training from their teacher preparation or PD programs prior to V-Tech for integrating technology effectively into instruction. Getting beyond the reliance on page-based methods required more than just increasing the teachers' technological proficiency. It required a fundamental shift in their perspectives about teaching, and these kinds of shifts are often difficult to make. One reason that we began with the teaching principles from CREDE was to facilitate considerations of redesigning classrooms and instruction whether it utilized digital technologies or not. Use of things like activity centers, joint productivity activities, instructional conversations, and project-based learning were modeled and encouraged during the first semester to help teachers see possibilities for new dynamics in the nature of learning activities in the classroom.

So one way of thinking about the obstacles to learning had to do with the problems of changing the culture of schooling relative to how teachers have been prepared to teach, particularly with urban students. Stigler and Hiebert (1999) documented not only that the United States prepared teachers in less effective ways compared to other nations but that their preparation was also much more generic and did not give significant account to some of the unique challenges of urban schools. Consequently, in addition to structural issues noted earlier, the traditional culture of teaching, which often is not questioned or critiqued by those who transmit or enact it, was a pervasive obstacle to the transformation of learning in the school.

STUDENTS' LEARNING

For the TEACH Project, student learning was predicated on teachers effectively incorporating the students' backgrounds, experiences, interests, and cultural perspectives into the curriculum. We felt that the use of digital tools was a powerful and potentially exciting way to link these considerations to the students' learning and allow greater receptivity to diverse learning styles. This kind of learning occurred throughout the project despite the obstacles discussed in the previous section. In this section, I primarily use considerations of the work that took place in the classes of the two focal teachers to delineate essential characteristics of changes in the students' learning. I also illustrate how their students' learning was connected to a number of principles of learning associated

with new media (Gee 2004) as well as how it reflected key aspects of the emerging National Educational Technology Standards (NETS) for student work. These standards were published in June 2008, the month our PD sessions ended, yet they offer useful frameworks for considering our students' and teachers' learning with technology.

The most important thing that characterized the learning of the students as a result of changing teaching practices during the TEACH Project was reflected in the first learning principle that Gee (2004) put forth: active, critical learning. This principle was powerfully revealed through the digitally mediated, project-based work in the Hip-Hop Journalism class taught by Ms. Foster and Ms. Young. Enacting this fundamental change also engaged other key learning principles that Gee outlined. It encouraged the students to develop inquiry-learning processes that required “probing” the “semiotic domains” of “designed” environments to “discover” their built-in resources for learning and making meaning (i.e., their “material intelligence,” or what I called the “third participant”). In so doing, students could get the information, ideas, images, sounds, or animations needed to more deeply understand issues, problems, or challenges and to create ideas, digital objects, and products that reflected their learning. These characteristics of the students' learning were also highly consistent with ways that the six key NETS for students emphasize the use of digital tools to promote specific kinds of critical thinking, creativity, communication and collaboration, citizenship, research, information fluency, and skill in the use of technology systems.

Through Ms. Foster's use of project-based activities, her students created youth commentaries and podcasts, digital stories and PowerPoint presentations, photography projects and blogs, and digital beats and lyrics. During these activities, they learned how to make meaning in and critique a variety of textual mediums, including written texts, as well as how to go back and forth between writing and electronic communication. One example of the convergence of a number of the principles of learning outlined by Gee was in the magazine project, where students brought together multiple sign systems—words, images, symbols, and artifacts—in a complex semiotic domain that blended traditional literacies of essay and story writing with the construction of complementary digital images and objects. They developed expertise in computer applications like Photoshop and Photo Booth and learned to capture, manipulate, and repurpose visual texts from Internet sources like Google Images. In line with the NETS for students, these young people were encour-

aged to “create original works” using “a variety of digital environments and media” to “interact, collaborate, and publish with peers, experts, or others” and, in the process, used their “existing knowledge to generate new ideas” and “construct knowledge.”

Through being positioned as journalists, the students learned about the workings of the journalism field as one model for accessing and producing knowledge, and they learned ways that this field and others were being transformed by affordances of new media. For instance, they were able to conduct research and do Internet searches in the process of creating digital and written texts that reflected their voices, perspectives, and critiques on issues that were local, national, and international. Consistent with the NETS for information fluency, this required them to “locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.”

When some of these issues were potentially traumatic or hit particularly close to home for students, like racial profiling or the Jena Six situation, Ms. Foster felt that the students’ work with digital tools made discussions of the critical social issues and events more viable. She found that addressing and presenting on these issues with digital media changed the communication dynamic and allowed students to appreciate and gain comfort with new possibilities for telling their own stories and providing critiques about social issues and conditions that affected their lives. This was revealed in ways that students presented their projects to others in the class as well as to the larger community and, ultimately, the world by utilizing digital media to communicate unique cultural perspectives and material. At times, the effect was subtle, as with Rosa’s gaining confidence through her PowerPoint presentation to talk in front of the class about her family’s experiences with racial profiling. At times, it was more dramatic, as with Jalen’s podcast about how he suffered from something akin to post-traumatic stress syndrome as a result of the violence he had experienced in his life or DeShawn’s use of a blog site as his “world wide wall” to, among other things, honor a fallen friend. Students noted that they liked how the class was about real stuff instead of boring stuff that didn’t affect them. These kinds of class projects connected directly to the NETS for students to use appropriate digital tools and resources to “identify and define authentic problems and significant questions for investigation” and to employ “multiple processes and diverse perspectives to explore alternative solutions.”

Through the work in Ms. Foster’s class, students became excited and

highly focused about learning. There was often laughter and other signs of genuine enjoyment. Sometimes students stayed after class or worked through breaks on the projects. Some took on leadership roles or roles as peer pedagogues. Many found that they could be more independent as learners while also learning in collaboration and dialogue with each other, the smart tools, and their teachers. Ms. Foster was even able to use digital tools to keep students like Darius plugged in to class activities during periods when he was not able to come to school. In some cases, her students were stimulated to go beyond class assignments in order to learn more about things like the history behind computers or how to do higher-level graphic or sound designs. They also understood more about the processes and importance of doing research to inform themselves and others about social and global issues. They were being reconnected to learning through both the digital and the social supports that Ms. Foster employed. More and more, they came to appreciate their individual strengths and interests as they experienced how learning could be serious fun and also relevant to their present and possible lives.

In Ms. Glide's unit focused in *Teen Second Life*, student learning was also engaging and challenging. More so than in Ms. Foster's class, student learning during the unit took place in three-dimensional, virtual spaces. Also, the products of their projects existed primarily as digital texts. Students had to confront new considerations of identity, including their identities as learners, through novel connections between the virtual and the real, the mind and the body, space and place, and production and consumption that came into play in novel expressive modes. In fact, their acts of identity construction—their connection of the academic demands to personal interests—were central to the learning that took place during this unit. The *Doe Magic* and *BigO Footman* avatars were not only fun or culturally configured choices; their realization marked the development of beginning computational literacy skills that would be continually built on for more complex learning activities. Construction of avatars and eventually other objects required students to reflect on their multiple real-world and virtual identities as they traveled to virtual places that linked and overlapped subjective and collective digital realities. Lave (1998) noted how this kind of learning is stretched across mind, body, activity, and culturally organized settings, and a similar stretching occurs with digitized bodies, activities, and cultural settings.

With regard to the learning principles enabled by digital media as noted by Gee (2004, 207–11), Ms. Glide's students learned, by enact-

ing virtual identities, to “probe” the alternative realities and reflect on the consequences of their actions. This is how Terrance discovered that affordances in the design of Teen Second Life could also be used to create unique video games. The consequences of probing actions offered or required choices for subsequent actions that guided incremental increases in learning and skill development related to the challenges of the virtual environment. For example, Saysay Snoodie engaged in extended discussions with Ms. Canon to learn how to implement her selections in constructing a more visually nuanced avatar. Through the “incremental principle” in this virtual environment, learning situations were ordered in the early stages so that they built on “intuitive knowledge,” such that earlier experiences led to understandings that were fruitful for addressing more complex situations and challenges. From this perspective, the students’ learning involved developing increasing levels of mastery of the “semiotic domains” of Teen Second Life—the interrelations of meanings within and across multiple sign systems—through increasing levels of participation. This kind of learning was not only “distributed” across the learner, the virtual objects and symbols, and the digital tools; it was also able to be transferred to relatable situations, issues, conditions, or challenges in the real world beyond the virtual model.

Ms. Foster and Ms. Young modeled the production of digital projects for their students. In Ms. Glide’s classes, students’ development of understanding and proficiency with specific computational literacy skills was through a process of model building in which the initial objects that they had to build modeled the building of all digital objects and structures of varying or increasing complexity. In this unit, they experienced a process of learning in which performance occurred before (and en route to) competence. As Jada built more and more elaborate houses and as Terrance elaborated his loft space, their learning was linked to their increasing capabilities for system manipulations and to the just-in-time solutions they needed to face the changing challenges. The sixth standard of the NETS for students addresses exactly these competencies to effectively use technology systems and applications. Additionally, all of the students were learning more about specific real-world activities and professions that related to various activities in the virtual world, consistent with Shaffer’s (2006) argument about the epistemic possibilities of role-playing games.

As Ms. Foster’s students learned about social issues and events taking place in the physical world, Ms. Glide’s students traveled, learned in,

and ultimately built their own additions to the virtual world. Intuitively, they instantiated a sense of place in the objects and structures that they built, but they also had to confront the visible and visceral duplicity of identities, including their identities as learners, as they transformed into cyberbodies and traveled in cyberspace. In addition to learning computational literacies, Ms. Glide's students learned to ground their identities by creating imagined places that were nonetheless culturally defined. Yet they were also intellectually and culturally challenged by their travels and encounters with other avatars and other realities, in ways that were consistent with the NETS for developing understanding and global awareness by engaging other cultures. Along the way, they learned more about their strengths as they worked in unique situations, met unusual challenges, and had to manage their frustrations in order to complete their virtual projects. They also learned more about collaborative work, as they both needed support in their work and were able to give support to the work of others in the class, consistent with the NETS for utilizing digital tools to work collaboratively.

Students even saw one of their peers, Jada, emerge as a capable "expert" who could lead part of the instruction as effectively as their teachers could. This echoed the expertise of Deja in the magazine project, with her skills and instruction leadership with digital photography. It also echoed the work of DeShawn, who became a recognized expert through the creation of his blog that he called the "world wide wall." Despite some constraints and obstacles to learning in the unit in Ms. Glide's class, the students' work in Teen Second Life enabled a range of cultural content and connections to learning and activities that were complex and challenging. With the exception of a couple of students, she noted, "most students had really positive things to say about the experience."

Intense interest and excitement were also clear characteristics of the students' learning with digital tools. Although the work in Ms. Foster and Ms. Glide's classes was mainly focused on their class subjects, the students' enthusiasm also spilled over into other teachers' classes. For example, there were times when students asked other teachers if they could use blogs, podcasts, or other kinds of digital texts in conjunction with the work they were doing in other classes. At times, this caused teachers to collaborate with each other on assignments that went across specific disciplines in the school. It also motivated students to sometimes try to join in on classes in which they were not enrolled, because they had heard about or seen the digitally mediated learning that was going on.

TEACHERS' LEARNING

At the end of the school year, the teachers were interviewed about what they felt they learned and gained from the PD project. Although they all gained greater understanding and considerable experience with the value, uses, and range of digital tools available for instruction (as reflected in chapter 3), their confidence and competence in actually mediating student learning with digital technology were uneven. To capture more of what was possible in terms of the learning of students at the school, I highlighted work in Ms. Foster and Ms. Glide's classes. In this section, I discuss key characteristics of the V-Tech teachers' learning with the understanding that there were differential levels of comfort in their attempts to implement what they were learning about uses of technology in instruction over the course of the academic year.

It was important that the teachers learned new perspectives about teaching as well as new teaching practices. Obviously, the two go hand in hand, yet the CREDE standards were important for teaching with or without high levels of technology use. Importantly, work with the CREDE standards helped change perspectives on teaching in ways that facilitated possibilities for greater use of digital tools. In other words, specific knowledge and skills with technology were only part of what was needed for effective instruction. The pedagogical knowledge that teachers needed to implement the CREDE standards was also crucial. For example, in his math class, Mr. Guy used joint productive activities and instructional dialogues for challenging and complex tasks in trigonometry that also connected across disciplines to his students' prior knowledge and experiences, all in conjunction with the digital affordances of Google Earth. The perspective on joint productive activities along with project-based learning, in fact, undergirded our PD approach and allowed us to focus the teachers' learning on their actual work in classrooms. Yet, since very little use of digital tools was going on in most of the teachers' classrooms, there also had to be a balance of addressing learning to use various digital tools in the PD sessions and then attempting to support their implementation in the teachers' practices. This was the key challenge—the actual implementation of what the teachers were learning.

In this regard, Ms. Church noted, "I feel like I'm that teacher who doesn't get any of this into the classroom. I still feel apprehensive. I just like to be in my classroom where I can control how things go." Yet she

did actively try some things to change her practice, as she indicated later: “Still, I use other innovations. I still feel like blogs are the most key things that we have tried, and I also had the senior project do some online components as one of the things that they can do to have different presentation modes. But I’m still reluctant to take that plunge into something like Second Life.” This last point was understandable since the use of that virtual environment for instruction required intensive support. Yet the principal captured the way we hoped we would help the teachers learn to change their practice when he said, in one of the PD sessions, that it really was not about learning isolated applications: “It’s really about imagining the kinds of things you want students to create and thinking about the design and intersection of the kinds of applications that will allow them to do these things.”

The following teacher comments reflect how they felt about their learning through the PD program over the course of the academic year. Every teacher was impressed by the capabilities of the wide range of digital media that they learned about and worked with during the PD sessions, and they were excited by many of the possibilities they held for mediating and motivating student learning. But at the end of the school year, a few of the teachers, like Mr. Roy, who taught science, still felt “technology challenged.” He stated, for example, “I’m still kinda intimidated by all the techno aspects of everything.”

The responses of the eight teachers ranged from Mr. Roy’s continuing sense of feeling intimidated by the use of technology in his classes to Ms. Foster’s eager embrace and experimentation with almost every digital tool that we introduced. She noted, “I’ve really gotten a lot out of the professional development. And I continue to bring technology into my classes and use techniques that I pretty much learned from this PD.” Mr. Elder remained closer to the position of Mr. Roy regarding technology. He felt that he had “gotten quite a bit out of [professional development]” and had “learned how to use [computers] more as an asset inside the classroom.” But his main uses in his math classes during the year were administrative. Ms. Rivers thought that even some administrative uses of new media could have pedagogical purposes. For example, she felt that her keeping a class blog to post course content and assignments really helped some of her students with inconsistent attendance keep up enough to get passing grades. Ms. Kim, one of the English teachers, tried some pedagogical uses of what she learned about a few digital tools, but she noted, “I have mostly done Internet research with the students when they have

to write a paper.” Her fellow English teacher, Ms. Church, worked to incorporate more of the digital tools that she learned about in the PD sessions into her instruction. She noted, “This year I’ve noticed that I just feel a lot more equipped. Um, all the different ideas that I’ve seen and some I tried, like using technology, using audio, GarageBand, podcasting.” Mr. Guy, the math teacher, also was quite comfortable using digital tools in his teaching, and he made an interesting breakthrough with the use of Google Earth to teach trigonometry. Although Ms. Glide started out quite intimidated by the thought of using technology in her classes, the PD sessions helped her gain the confidence to experiment with almost as many digital tools as Ms. Foster. For example, Ms. Glide stated,

I would say that I would be one of those teachers who was not tech savvy and not interested in using technology. But as I was going through the PD, I started incorporating a lot of the applications right into my classes while it was still fresh to me. I did a unit on child soldiers in Africa, and I had the students using Google Earth to kind of understand the geographical components of where all of this was taking place. Students would have to make critical judgments based on their use of the technology. For example, if we were looking for a particular village that child soldiers came from and couldn’t find it using Google Earth, students would have to figure out things like was the village so small that it couldn’t be seen, or did it get destroyed in the war? I had them set up blogs and make entries using the CIA *Factbook* and evaluating that as a resource. Using these different media helped the students, I think, see themselves more as global citizens.

I include Ms. Glide’s extended statement here to connect the uses of technology by some of the V-Tech teachers to key considerations from the five NETS for teachers. One of these new technology standards for teachers was to “design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.” Another related technology standard was for teachers to “develop technology-enriched learning environments that enable all students to pursue their individual curiosities.” I selected these two standards from the NETS because they go to the core of teachers’ need to utilize technology to support the diverse needs of learners, on the one hand, and to maximize the learning of all students, on the other. Ms. Glide’s work as she described it (as well as the work of most of the teachers in the yearlong project) was definitely moving toward the goals of these standards in how technology was being incorporated into instruc-

tion. Another one of the standards addresses the need for teachers to use technology with their students to enhance their global awareness. In Ms. Glide's work as well as in the work of other V-Tech teachers that has been reported throughout this book, various digital tools were used to extend the students' learning to global issues and events. These were clear ways that learning to use technology helped the teachers change their teaching practices and perspectives to more effectively engage and increase the learning of their students.

Critical challenges that the teachers faced as they learned and worked to utilize more technology were dramatically portrayed as they reflected on the school year that was ending and projected on the new year coming. For example, although Mr. Roy did not feel he had been successful in implementing things he was learning in the PD sessions, he was nonetheless enthusiastic about increasing his use of technology in the next academic year.

I was able to accomplish a few things, and I really enjoyed it [the professional development]. What really inspired me is that some of the students took some of the things that we did in class with the other teachers, who were better with the technology than me, and the students really enjoyed it. And it really hit home that I have to get my act together as far as technology is concerned if I really want to be a twenty-first-century teacher. So I'm taking this to heart, and over the summer I'm going to improve on my Second Life, and improve on a lot of other things so that I can inspire the students. A lot of them have a lot of issues. And one of the issues that they don't have is dealing with technology. So I really need to get it together, and I hope to encourage them and inspire them to become better science students.

All of the teachers saw that the learning of V-Tech students was being revitalized through the use of technology, even when it was occurring in classes other than their own. Ms. Kim, for example, felt that it was great to be exposed to so many new ideas about teaching while, at the same time, having a continuing forum for learning how to implement these ideas and link them to teaching standards.

Working in professional development with the technology is good. It's good to think about how you could use technology. It's always nice when you have new ideas. It's kind of a challenge, because then you think, well,

there are all these standards you have to meet, and how can the two merge. . . . But I think it will be cool next year to have more web resources . . . and also having the students have a blog and having them comment on maybe a book that we are reading at the time. So I definitely think that it's been useful to have that time in PD to bounce ideas off of people when the ideas strike.

Ms. Kim's comments indicate the challenges of making the work with technology connect to traditional teaching standards, yet the V-Tech teachers were able to make those connections in interesting ways. I have also shown how their work directly connected to key emerging standards that are being adopted for teaching with technology, although these standards were not published early enough to be incorporated into our PD project. Ms. Kim also touched on one of the most important things that the teachers understood from their experiences of working together during the year—the value and vitality of their close, extended collaborations with each other in facilitating and motivating their learning. Another example of a new vitality for the learning of V-Tech teachers as well as for the learning of their students was provided by Ms. Church as she reflected on the closing and coming school years.

I will say that this year has been dramatically better for me than last year. Last year was my first year of teaching. Teaching at this school in particular. And it was really difficult. At the end of last year, I was a lot more stressed and a little disappointed in myself. But this year I've noticed that I just feel a lot more equipped. Um, all the different ideas that I've seen and some I tried, like using technology, using audio, GarageBand, podcasting—I feel like those are really cutting-edge things. And I feel like if we can make them work here at this school, then we have some limitless possibilities before us. . . . And I just feel, like, a lot more energetic about teaching. And I don't feel the same way that I felt before when I was questioning if I would even come back. Like right now, I'm in there. I'm excited! Just the kind of energy and motivation that I have gotten from some of the ideas I've gotten this year. And the talk about collaborating with the game school on the East Coast. So I appreciate all of these kinds of conversations that we have been able to have.

Obviously, teaching in a continuation school was extremely challenging, and these challenges exacted tolls on teachers and students

alike. Yet, like Ms. Church, the teachers at V-Tech finished the school year feeling quite encouraged about their work to change their teaching practices and with high hopes for going further with this in the coming year. For example, Ms. Rivers noted that she felt much better about her experiences during the school year and her future teaching prospects at the school than she did about all of her former teaching experiences.

This is my fourth year of teaching, and it's been the first year that I have enjoyed teaching. So this has been a great year for me. The collegiality, the administrative support—I felt very supported, and for that reason it's been fabulous. And I actually now look forward to next year. I've never looked forward to the next year before. Having professional development centered around technology and giving us tools to become better teachers, I actually fell in line with the whole objective of supporting teachers. So I appreciated it. Even if I'm not going to be able to implement everything right now or if I don't use everything that we learned, I implemented some of the things. . . . But I like the fact that we were offered these technologies as our professional development, because it obviously has the potential to relieve our pressure and help us be better teachers.

Clearly, teachers are most often under intense pressure in nearly every educational context. The use of technology alone will not mitigate that pressure or necessarily result in effective teaching. However, insights from the teachers at V-Tech regarding their experiences in learning to incorporate technology into their instruction, albeit at widely varying levels, illustrated that despite the pressures and obstacles of teaching, new life was brought to the learning of students and teachers that was relevant and rigorous but also predicated on productive relationships. Ms. Foster, a sterling teacher and leader at the school, provided one final, powerful consideration of the PD work and collaborations over the year.

It's been a hard year professionally, but even more so for me personally. [For one thing, her laptop was stolen during the second semester.] Yet I've really gotten a lot out of the professional development, and I continue to bring tech into my classes and use techniques that I pretty much learned from this PD. I'm excited about Word. Sound. Life [a new application that Mr. Cameron developed]. I think that's going to be a good addition to my classes. So I'm really looking forward to using that next year. I really have enjoyed working with the other teachers and staff. I love each and every one of them. That's been what's kept me grounded. I think some collaboration has started to kinda pick up, but it's kind of been organic. When we

come together even more purposefully in a more organized kind of way, I think it's going to be even better. So I look forward to collaborating with my peers.

Ms. Foster was essentially saying that the personal and professional relationships and collaborations were key and that the school community needed to continue developing in this area as the foundation for achieving other goals, including our goals for increasing the use of technology. She concluded that in her own quest for professional development, “I just feel like it’s those personal transformations for me as a teacher that make the technology so worthwhile and so important.”

IMPLICATIONS FOR SCHOOLING

The TEACH Project’s PD work with V-Tech teachers and the teachers’ concurrent work with students had a number of implications for changing perspectives and practices of schooling. These implications not only relate to reengaging students who are having critical academic or discipline problems in schools; they also reflect ways to effectively prepare students in general to meet the complex, mercurial challenges of learning and living in this century. Despite many obstacles, the structures and cultures of U.S. schools can be changed. Beginning with considerations for instructional designs and moving to a reconceptualization of the “place” of school in society, I here discuss implications of our work for increasing the efficacy of teaching and learning—particularly through more effective utilization of digital tools. Assessment of digital learning is also an important issue, but the TEACH Project was not able to significantly address this during the year of this PD work.

Some recent scholars have argued that the design of computer games offers compelling models for other educational and instructional designs. For example, the Federation of American Scientists noted that video games can help reshape education by teaching skills that employers want like analytical thinking, problem solving, multitasking, and team building (Feller 2006). Similarly, Shaffer (2006) noted that epistemic games modeled on the skills used in various professions would be a more viable way to design teaching and learning in schools. Ms. Church’s excited statement in the previous section about talk going around the school of a potential collaboration with a new school on the

East Coast alluded to the ideas of modeling on computer designs that were central to the vision of the principal. Instruction in this East Coast school was being completely organized around principles for the design of computer games.

I remember receiving a long e-mail from the principal during the middle of the academic year that exuded his enthusiasm for moving in a similar direction at V-Tech. “For the past two nights I haven’t been able to sleep,” he wrote. “I came across this school in New York opening in 2009. . . . I want us to create this school on the West coast.” He went on to elaborate his sense of the significance of this way of framing schooling.

This new school has been conceived as a dynamic learning system that takes its cues from the way games are designed, shared and played. This means learning to think about the world as a set of interconnected systems that can be affected or changed through action and choice, the ability to navigate complex information networks, the power to build worlds and tell stories, to see collaboration in competition, and communicate across diverse social spaces. It means that students and teachers will be empowered to innovate using 21st century literacies and engage in their own learning in powerful ways. . . . Imagine a school like this serving our students.

The TEACH Project did not go as far as the vision described by the principal, but some of the implications for redesigns of schooling that linked to our collaborative work did address key considerations in his e-mail. First, in order for students and teachers to be “empowered to innovate using 21st century literacies,” the digital technologies that enable these literacies have to be incorporated into instructional designs. This is obvious, of course; yet a fundamental issue addressed in this book was how teachers can gain access to appropriate digital tools in conjunction with how they can best learn to employ them. The project attempted to help teachers see and experience viable ways for new media to be central to their designs for student learning. This required strategies to help some of the teachers get beyond their apprehensions in order to see the use of technology as a resource rather than a threat.

A primary implication from our approach was how the structure for teacher professional development needed to be set up to allow sufficient time and opportunities for teachers to explore and experiment with using digital tools in ways that can help them directly implement their curricular goals. Within the school structure, we created 90-min-

ute bimonthly PD meetings that facilitated caring, collegial relationships as a context for professional development that was seen as relevant to the needs and goals of the teachers. The focus on relationships and relevance was already a part of the school's motto, and the third element of rigor was approached by engaging increasingly complex media, starting with blogs ("If you can do e-mail, you can do a blog," Mr. Cameron told them) and moving to experiences in 3-D virtual environments like Second Life. This process was consistent with the model-building design of learning in Second Life and other digital environments in which the initial structures for learning acted as models for learning other structures that continually increased in complexity and where continual practice was performed en route to competence.

Through the TEACH Project, the participants also experienced how learning with digital tools was "distributed across the learner, objects, tools, symbols, technologies, and the environment" (Gee 2004, 211). In other words, teachers were able to see how their traditional roles as leaders of instruction needed to change to exploit the inherent capabilities of digital media. They could no longer see themselves in relationship to their students like a kind of cue ball in a game of pool, for example, where every animation of student learning had to be initiated by and through the teacher. Students came to be considered as active participants in the learning process, setting some of their own learning goals and experiences. Designs for learning that leverage Gee's distributed principle reflect multiple sites and multimodal ways of learning connected to the material intelligence of the various digital devices. Consequently, new forms of collaboration between and among teachers, students, and the wealth of digital resources were brought into the classrooms. This also suggested the need for redesigning the physical spaces of classrooms, and the use of activity centers provided a good framework in this regard. So the importance of educators coming to appreciate the nature of distributed learning with and through digital tools was another important implication from the work at this school. At the same time, it must be realized that some of the digital tools that we used, like Google applications and Teen Second Life, are privately owned and have commercial purposes that could cause some problems when brought into the context of public schools. Educators will want to think these issues through before building instruction around these particular kinds of tools.

A further implication for instructional design was also revealed in how the teachers engaged in learning in and beyond the PD sessions.

We tried to structure their learning to exemplify ways that the teachers could also design instruction for their students. Aspects of this model have been variously described in this book as “joint productive activity,” from CREDE standards; a “pedagogy of collegiality,” from Youth Radio principles; or “peer pedagogy,” in my own terminology. These approaches to learning move toward being forms of critical pedagogy to the extent that the outcomes and products they create have impacts that help ameliorate inequitable conditions in schooling and ultimately in the world beyond schools. The examples of each of these approaches all revealed the teachers and students collaborating with, modeling for, and learning from each other through production and presentation of and dialogical reflections on digital projects.

This model was seen in the work in our focal classrooms as students’ learning took place through project-based activities that often reflected the development of critical perspectives on local and global topics and issues. This occurred, for example, in the blogs, PowerPoint presentations, and podcasts of youth commentaries on topics like racial profiling, post-traumatic stress syndrome, prejudice, and the inequities of institutional power that were developed in Ms. Foster’s class. It occurred in the processes of constructing identities, building objects, world traveling, and communicating with others in the virtual world in Ms. Glide’s classes. The possibilities for schooling from these kinds of activities were captured in the principal’s vision of students developing abilities “to navigate complex information networks” and having “the power to build worlds and tell stories . . . and communicate across diverse social spaces.”

Implicit in these new forms of learning was that teachers needed to have a much better understanding of the actual experiences, interests, and skills of the young people in their classrooms in order to create effective instructional designs. Fueled by rapid technological change, youth interests and skills are highly mutable. Consequently, even teachers who are under thirty cannot use their own backgrounds as templates for the digital experiences of contemporary youth, because many of the online social networks and other digital spaces youth currently inhabit barely existed a decade ago. It is estimated that between one-half and three-quarters of U.S. teens have a profile on an Internet social networking site. So a clear implication was that teachers have to work to understand the nature of young people’s experiences as they are “hanging out, messing around, and geeking out” with new media (Ito et al. 2009). In their book, Ito and her colleagues synthesized three years of extensive collaborative,

ethnographic work from a project funded by the MacArthur Foundation entitled “Kids’ Informal Learning with Digital Media.” The descriptions draw from a wide range of case studies by a large team of ethnographers to document key “genres of participation”—essential ones being “friendship-driven practices” and “interest-driven practices”—that characterized how young people live and learn through activities that are increasingly mediated digitally.

As our work at V-Tech showed, however, teachers could also use the projects in their classes to gain insights into what their students already know and are able to do with digital media. Teachers were able to design activities to help them better understand the digital intelligence or the digital capital their students possessed. For example, when Terrance was building his virtual presentation space and when DeShawn was building his “world wide wall,” they both had photos and music already stored online that they were able to utilize for these class projects. This could happen with traditional class work like essays and other assignments, but an implication from this work was that more modes and mediums were able to be digitally accessed and utilized by students to provide richer and more expansive insights into their experiences and interests. Additionally, the technology offered more extensive and expressive ways for students to share their learning with teachers and other students as well as with communities beyond the school.

V-Tech, in fact, reflected an expanded view of a school’s role in the larger community. With the work of students being continually presented beyond their classrooms in community forums, on college campuses, and in online venues, agency and advocacy were given to important issues. The principal consciously worked to make the school function as a viable social unit, and each classroom was also supported to function in the same way. These integral units were focused on the quality of social relationships as the context for engaging in relevant and rigorous learning activities. These were constituent elements of a sense of “place” at V-Tech that was increasingly shared by students, teachers, parents, administrators, staff, and the larger community.

Another implication from the work at V-Tech is that in light of new possibilities for learning with technology, the role of teachers is magnified rather than diminished. Feuerstein et al. (2004) indicated how learning with various tools and materials is significantly extended when a mediator intercedes to systematically modify the learners’ interactions and increase their levels of understanding. In these mediations,

teachers and students become active, co-constructors of meaning, yet the instruction still guides students in using tools to link their experiences and understandings to new and deeper knowledge. At each level of understanding, teachers must know when and how to release students to more independently internalize and actualize their learning with the various tools.

The TEACH Project brought considerable resources to V-Tech to support the teachers' learning and work to enact new perspectives and use new tools, so aspects of what was achieved might not be immediately reproducible in some educational settings. Yet the descriptions of teaching and learning that occurred at the school indicated the value of instructional designs that utilized unique affordances of new media tools to motivate and facilitate student learning. This learning was active, critical, distributive, multimodal, probing for discovery, and transferable across academic disciplines and social settings. The material intelligence and collective intelligence enabled by the media could also activate a "third participant" and establish a sense of "place" in the process of extending learning into alternative realities. These designs accessed and utilized a significantly wider range of student resources for learning while building on their identities, interests, and culture to expand their understandings of the world. This wider range of resources included an array of multitextual mediums converged in semiotic domains that interrelated and animated actions, images, symbols, and sounds as well as words to make meaning.

Rather than modeling on computer games specifically, the broader implication is for educators to conceive and decide how to implement the emerging possibilities of a wide range of continually changing new media and online resources. New media permeates the lives of young people, and it can bring new life to learning. We must define its place for learning in schools or watch it take the place of schools.