Educators must think more about how to provide opportunities for students to experience and reflect on the outcomes of technology use.

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The dominant view of technology so far has been that it is a tool to help improve the teaching of traditional subjects—knowledge mostly about our local and physical world. But technology has created a new realm: the virtual world. It may not be physical or tangible, but the virtual world is indisputable and has a significant economy. If we consider the amount of time young, digital natives spend in virtual spaces such as Facebook, MySpace, video games, eBay, and YouTube, we cannot say that this part of their world is not real. Exploring what we do in the virtual world and how we do it there is one way to determine which skills we need to help students develop. Thus, one of the initial challenges educators face in preparing students for 21st century lives is understanding what knowledge and skills are needed to live successfully in the virtual world.

In the virtual world, we engage in activities associated with living and earning income there, as well as activities dedicated to re-creating and shaping it. Though not all of us engage in all activity categories, the physical and the virtual worlds are interconnected and each serves as an inseparable part of our lives. In addition to these three activities, we often perform three functions in the virtual world, either as consumers, citizens, or as community leaders.

As consumers, we make use of what’s available in the virtual world to meet our needs in both the physical and virtual worlds. We send e-mail to our friends, buy books on Amazon, sell used cars on eBay, watch YouTube, and search for information on Google. As citizens of the virtual world, we enjoy the privileges and shoulder the accompanying responsibilities of participating in virtual communities. We participate in online communities, debating and discussing issues concerning the virtual and physical worlds. As leaders, we use virtual tools to influence others, convincing other players to follow us in World of Warcraft, blogging to express our views and to influence others, and organizing community activities via Twitter, MySpace, and Facebook.

The virtual world has expanded since its creation, adding new features, services, and choices to meet our needs, and serving and re-creating the virtual world has resulted in the creation of large businesses such as Google and Amazon, as well as other smaller businesses. Some of us are also engaged in shaping the virtual world and earn income by developing new hardware, software, or virtual communities.

Consider, for example, Second Life, a 3-D virtual-world computer game created and operated by Linden Lab, a software company based in San Francisco. This game is different from most traditional PC-based games in that it is a vast online diorama in which players can re-create all types of objects encountered in daily life such as buildings, golf courses, cars, food, and clothes.

Second Life players, more often called residents, live in this metaverse as in the physical world. They can create objects and then sell or buy them with Linden dollars. Linden Lab has made it a policy that users own the intellectual property rights to the objects they create or purchase. Linden Lab also has made it possible for users to convert their earned Linden dollars into real U.S. dollars or to buy Linden dollars.
with their real money. Registration to play the game is free, but in order to have a place to “live,” the user must buy land or property. They can buy land from other residents or from Linden Lab directly.

Anshe Chung, a resident of Second Life, became the first person in the world to make more than 1 million Linden dollars by creating and selling virtual real estate properties in the imaginary virtual space. However, Chung does not exist in the physical world; she is the avatar, or virtual representation, of a woman named Ailin Graef who lives in the physical world. In 2004, Graef invested $9.95 for a Second Life account and created the character of Anshe Chung.

Chung, or Ailin Graef in real life, began to accumulate her fortune by making small-scale purchases of properties in Second Life. She subdivided them and developed them into themed properties such as oriental gardens and country houses. She then sold or rented them to other residents and in a matter of 2.5 years she has turned her initial $9.95 investment into seven figures.

Today, Graef continues her business at a much larger scale, operating Anshe Chung Studios, which, according to its Web site, “maintains offices in the real world where it employs more than 80 people full time, and is extended by a huge network of virtual reality freelancers world wide. It hosts thousands of residents on more than 40 square kilometers of gated communities in virtual worlds.”

Graef’s creation of Anshe Chung Studios highlights some of the most compelling issues about technology and education in the 21st century, illustrating both the transformation and challenges brought about by technology. Education leaders must consider how this transition affects our children and how we will provide them the knowledge and skills to succeed in this world.

**What Our Children Need to Know**

To properly prepare students for the future, we will need to broaden what is considered worth learning. To live successfully in the newly emerged virtual world, students will need to do the following.

**Understand the nature of the virtual world.** We need to help children understand the differences and connections between the physical and virtual worlds and develop the ability to tell fantasy from reality. The virtual world is connected to the physical world; we should teach students that what they do in the virtual world has consequences in the physical world.

Even though the virtual world shares certain norms and rules with the physical world, it operates differently. What happens in the virtual world is psychological, meaning that the people we meet and the things we do are often our mental creations, which can be dramatically different from reality. In addition, students should also understand that the virtual world is dependent on technology and that all technology is fallible. Children should understand how technology works, how data and information are represented in different forms of media, and how data are managed and structured.

Children must understand the global nature of the virtual world, that it is a constantly evolving and expanding global network of individuals and group participants, and it is constantly evolving and expanding. Citizens of the virtual world can be our next door neighbor or someone who lives thousands of miles away. Physical distance does not matter here.

**Develop a positive attitude toward the virtual world.** The virtual world is complex and full of uncertainties because it is new, global, constantly evolving, and dependent on technology. Entering this world is like entering a different country or culture and simultaneously can be disorienting, frustrating, and exciting.

To competitively live in the virtual world, children need to have a positive attitude toward the uncertainties and difficulties they will encounter. It helps if they also develop effective strategies to approach technical problems as well as learn new technologies. As such, we should teach children where and how to get help to deal with problems.

**Develop the ability to use different tools to participate and lead in the virtual world.** Students must develop a positive attitude about the virtual world in order to flourish in it. They also need to have the skills and knowledge to use different tools to engage in online communities, seek opportunities to learn and work in the virtual world, and obtain and share information. Technological tools have become increasingly easier to use and children often do not need explicit instruction in this area. For example, Web tools such as Twitter, Facebook, MySpace, and many blog sites are easy to use. However, schools should still provide resources so students can have safe places to learn how to use new tools.

**Develop the ability to create products for the virtual world.** Ultimately, we want our students to become productive members of the virtual world, not just consumers. Therefore, we should teach them how to create and market multimedia products, to express themselves online, and to establish, manage, and promote online enterprises. For example, they should be taught how to produce high-quality music videos, small computer games, and 3-D objects.

**Develop the ability to interact with people from different cultures and countries.** The virtual world is automatically global. Thus, students also need to have global competence, that is, linguistic and cultural competence in the virtual world.

**What We Can Do**

The Anshe Chung Studios virtual real estate example also suggests how to prepare children to develop new skills to live successfully in the virtual and global world. Graef’s success in developing Anshe Chung Studios illustrates that what seems to be simply playing games is actually of economic value. The skills
and knowledge that helped Graef to become a successful virtual real estate developer are actually valuable as well. We should accept the fact that our children will need to develop new skills beyond what we traditionally teach.

Second, the example tells us that 21st century learning and teaching can be more authentic and entrepreneurial. Graef acquired her skills as she played the game. She was able to use the available online resources and take advantage of the evolving situation as she progressed.

Similarly, educators should use technology to create more authentic learning experiences for children. Should they want to learn a foreign language, we can connect them with students in other countries. If they are interested in exploring other cultures, we can send them on virtual field trips. To help them develop skills in creating multimedia products, we can help establish a TV broadcasting service on YouTube. What we need to do is trust our students and enable them to learn to become entrepreneurial learners.

The virtual real estate example also shows that technology can provide global resources to our students. Graef built a global enterprise in the virtual space; schools can, too. With today’s technology, any school can become a global enterprise in the sense that it can have access to educational resources, be it information or human experts. As such, a school can provide experts from anywhere in the world as mentors and teachers via technology to meet their instructional needs. In the 21st century, we should no longer consider distance as an obstacle to student learning. A 2009 U.S. Department of Education study, Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies, shows that distance education, when blended with face-to-face teaching, can be more effective than traditional modes of education.

Finally, the virtual real estate example illustrates that technology is not only a tool to help us do old things better, but it is also a way of living. Graef actively lived the virtual world—and that is why she was able to creatively use it. Thus, it is much more important to teach children the moral, social, cultural, and economic elements of technology and its consequences than it is to teach the mechanical skills alone. Although technology has become easier to use, it is its applications that have become the real challenge.

Therefore, educators do not need to fear using technology or whether we have the same technical skills as our students. Instead educators must think more about how to provide opportunities for students to experience and reflect on the outcomes of technology use.

Using Technology in Schools

Schools can no longer ignore the importance of digital competencies or what children are already doing in the virtual world, with or without the involvement of educators. To develop virtual technology competencies, schools must take a number of actions to change their mind-sets, policies, and practices about technology. We should acknowledge that technology is not only a tool teachers can use to raise test scores and improve academic achievement. It is also an important tool for students to develop digital competencies, be creative in art and music, develop social skills in virtual worlds, and stay engaged with school. Instead of banning MySpace, blocking Skype, and forbidding the use of cell phones in schools, we should actively create technology-using experiences for students, under the supervision of teachers for productive purposes. The best way for students to learn to avoid being taken advantage of by pedophiles online or cyberstalkers is to teach them how to recognize and deal with the criminals, not hide them behind a blocked network.

Schools should change their policies about student technology use in schools, allowing students to use their own technological devices for learning and more importantly, giving them opportunities to learn how to use technology across the curriculum, for handing in assignments, communicating with friends and teachers, developing multimedia products, and designing video games. Schools should consider digital products as valuable and authentic indicators of student learning for assessment purposes. Schools should help students acquire digital competencies. These practices should move beyond teaching basic technology skills and include experiences that are effective in motivating students such as creating products that can be used by others or have personal meaning. For example, students can build a virtual school or community in Second Life, operate a radio or TV station online using podcasting, or maintain the school’s Web site. Schools can also organize video game clubs that foster design skills. The way we make use of digital technology and treat our digital native students has significant implications for their future.

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WEB RESOURCES

School leaders can use the Pew Internet and American Life Project as a resource to learn how the Internet is affecting society.

www.pewinternet.org

eSchool News is an excellent source for school leaders and teachers to stay up-to-date with issues around technology in schools.

www.eschoolnews.com

Christy Matte’s article, “Virtual Worlds for Kids,” lists some of the virtual world games for children.

http://familyinternet.about.com/od/websites/tp/virtualworldskids.htm