Video-Sharing Websites

Tools for Developing Pattern Languages in Children

Heejung An and Holly Seplocha

Photos courtesy of the authors

Heejung sits at the computer reading her e-mail, while her 3-year-old son Jay plays with his train set on the floor next to her. Jay puts the track together but gets a little frustrated when he cannot connect several sections to a plastic bridge. He mumbles, "It's broken," then tugs on his mom's elbow for help.

Heejung is not proficient with train set designs either, so she thinks, "I wonder if YouTube has anything about assembling trains." She goes to the YouTube website and types in the brand name of the train. A menu listing dozens of videos pops up. Some are clips from a PBS children's series, but many are videos that families made to demonstrate various train track designs.

For more than an hour, Jay sits on his mother's lap, intently absorbed in watching videos about train track design and construction techniques. Heejung knows this is not wasted TV time when not much thinking occurs. Rather, she suspects that Jay is developing new cognitive skills as he watches the videos.

Later that evening, after telling Jay goodnight, Heejung discovers that her son has indeed solved the problem. All the track is laid perfectly, and the train engine is on the bridge, awaiting the next adventure.

Situations similar to this one (involving the first author and her son) occur every day in thousands of households and early childhood programs. Children and their families and teachers use video-sharing websites (such as youtube.com, teachertube.com, ehow.com, vimeo.com, hulu.com, and viddler.com) for new types of learning and information sharing (Helft 2009). This article explores the pedagogical implications of this relatively new digital phenomenon in the context of pattern language development.

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Pattern languages

As noted by Alexander (1977, 1979), *pattern language development* is a process in which communities freely share information, with the intention of developing best practices. The process of exchanging and subsequently learning about new patterns has occurred for centuries, often through guilds of builders, weavers, stonecutters, and such (Alexander 1977, 1979). Through these exchanges of information, guild members or other communities of learners shared and thus enhanced the ways in which various tasks could be accomplished. For designing and constructing buildings, towns, gardens, and various other projects, the goal was to continually improve upon the quality while also enabling learners to feel like part of a larger community. According to Alexander, these practices did not have a profit motive, but were instead intended for the public good.

With the expansion of the World Wide Web, the ability to freely exchange pattern-based information has grown exponentially. For instance, in the 1990s, computer programmers wrote and exchanged code in online communities, and now web-based videos allow experts and novices alike to share information—for free—on thousands of different topics. Millions of people throughout the world can visually demonstrate new and traditional knowledge through online videos. The proliferation of no-cost, easily accessible video content is rapidly changing online video from a medium solely for entertainment and news into one that is also a community-based reference tool.

Web-based videos create a new type of pattern language in which online communities share best practices and continually develop add-ons or new ways to solve problems.

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This technology adds value, because video-based searching provides new ways of interpreting and relaying information that were not possible with just text (Helft 2009). Streaming videos allow a learner to see complex processes over and over again in a manner not easily conveyed with pencil and paper, through verbal conversation, or even by face-to-face demonstration (Bransford, Brown, & Cocking 2000). For instance, while a teacher can show a child how to tie his shoe, a video allows the learner to play the demonstration again and keep trying until he masters the task. Streaming video also allows the viewer to see something that he might otherwise not have access to.

Web-based videos create a new type of pattern language in which online communities share best practices and continually develop add-ons or new ways to solve problems. The cognitive processes involved in video editing and distribution also can improve the ways in which learners understand the world around them.

Reaching digital natives

Prensky calls today's children *digital natives*, a term for "native speakers of the digital language of computers, video games, and the Internet" (2001a, 1). Children born in the new millennium and growing up with these new digital technologies are likely to "think and process information fundamentally differently from their predecessors" (Prensky 2001a, 1; and Brown 2000; Prensky 2001b; Oblinger & Oblinger 2005).

Therefore, one good way to reach digital natives is through communication in their native language. Prensky (2001b) points out,

> Digital Natives accustomed to the twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, fantasy, quick-payoff world of their video games, MTV, and Internet are *bored* by most of today's education, well meaning as it may be. But worse, the many skills that new technologies *have* actually enhanced (e.g., parallel processing, graphics awareness, and random access)—which have profound implications for their learning—are almost totally ignored by educators. (p. 5)

Young children, even toddlers, are often very familiar with these types of technologies. Thousands of parents share their children's videos online with family and friends. Many children see family members using handheld devices like cell phones to gain access to YouTube. Children—as well as adults—want to share some of the things they've been constructing, from train tracks to block buildings. In other words, many children already consider online videos as a reference resource they can use and contribute to, not just a vehicle for passive viewing. This distinction is critical and will surely impact the ways in which today's young children conceive of video-based information as they get older (Prensky 2001b).

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As an example, children can share what they've learned, thereby contributing to others' knowledge. Consider a kindergarten class investigation of their town. After researching buildings that make up their neighborhood, the kindergartners build a block city, videotape it, and share it on YouTube. Another class may share puppet-making experiences, explaining the steps for creating the puppets. The ability to share a video makes it much easier for teachers to communicate classroom activities with families and caregivers. For instance, if a class were planting a garden to brighten a school's outside area, the children might receive more support for the initiative through the production and distribution of an online video, which stakeholders and others outside the classroom could see. Videotaping planned activities that include families at school (for example, a Healthy Heart Fiesta) may encourage more families to become involved in future events.

Assessing the benefits

Some early childhood educators remain unconvinced that video-sharing websites add any value to traditional educational processes (Hong & Trepanier-Street 2004). They "tend to consider technology as an 'artifact,' instead of regarding it in the light of 'knowledge,' 'processes,' or 'volition'" (Siu & Lam 2005, 355).

That said, there has also been a great deal of literature highlighting the benefits of incorporating digital technologies with young learners. Can this technology help children expand their understanding in different ways and on different cognitive levels (Hong & Trepanier-Street 2004)? It is important to consider the possible ways in which young learners understand video-based demonstrations and processes as they attempt to decipher the world.

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Technology and emergent literacy

Technology is now prevalent in many early childhood classrooms. Many young children have access to computers, and an increasing number of preschool and kindergarten classrooms have access to the Internet. Digital whiteboards are replacing chalkboards in some schools.

In discussing young children and technology, NAEYC's Technology and Young Children's Interest Forum (2008), along with others (Haugland 2000; Stephen & Plowman 2008), note that computers can be used in developmentally appropriate ways, but they stress the importance of integrating technology into class activities and using guided interaction rather than using computers in isolation. Clements and Sarama point out that "computer work can instigate new instances and forms of collaborative work" (2003, 36).

Many teachers use early education software designed to help children learn colors, letters, and numbers and gain dexterity in the use of keyboard and mouse. Some teachers

extend activities with CD-ROM books or interactive online books (see, for example, www.readinga-z.com and www.razkids.com) or through visits to educational sites with information about things of interest (such as butterflies, transportation, habitats, and so on). Clements and Sarama, after their review of research on young children and technology, conclude that computers, used wisely, "can make a unique and substantial contribution to the education of young children" (2003, 40); such technology can support teaching and learning in social and emotional development, cognitive development and learning, creativity, language and reading, and mathematics.

Visual media can help expand children's vocabulary as they hear new vocabulary while seeing the word or concept in action.

The connection between vocabulary and reading comprehension is strongly established (NICHD 2000). The National Early Literacy Panel (2008) identifies oral language, including vocabulary, as an important variable for future reading achievement. Words, however, are learned not in isolation but in context. Young children need multiple, varied, and rich experiences with words and rich vocabulary. Christ and Wang's (2010) review of research on vocabulary instruction highlights the need for purposeful exposures to new words in context. Visual media can help expand children's vocabulary as they hear new vocabulary while seeing the word or concept in action. As children watch a video clip on trains, they see and hear words such as *bridges*, *on top of*, *below*, and *caboose*.

Pattern language in early childhood education relates to children's interests, play plans, and units of study. Young children learn through active engagement with materials and interactions with others by building on prior knowledge to construct meaning (Vygotsky [1934]1986). By viewing developmentally appropriate videos related to their interests, play, and study topics, children can begin to incorporate the pattern language of play into their vocabulary. The intention is not for online videos to replace the learning of meaningful language and vocabulary through interactions, but for the technology to bring an added strategy and engaging vehicle for learning content and fanciful or imaginative words.

NAEYC (Copple & Bredekamp 2009, 315) recommends that teachers use technology not as a substitute for hands-on experiences but "to expand the range of tools with which children can seek information, solve problems, expand concepts." With this in mind, teachers can enhance children's learning by using visual media to *experience* what may not be possible or practical in the classroom.

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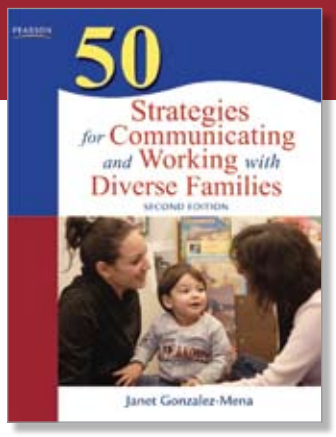

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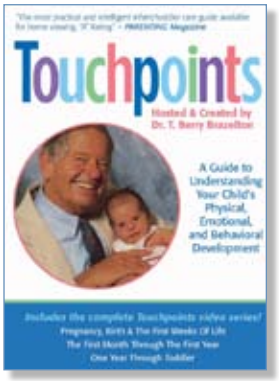

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Consider the preschool teacher who transforms the dramatic play center into a pizzeria. Most children easily play the role of customer and server, but many have not experienced making a pizza or what happens in a pizzeria kitchen. While a trip to a local pizza parlor can give a glimpse of pizza making, children need repeated experiences to solidify and internalize knowledge and vocabulary. Enter YouTube.

The teacher searches "Pizza Making 101," and a menu pops up, listing almost 200 videos made by various restaurants and homes. The children begin to add pattern language (*bon appetit, dough, toppings, stretch, knead,* and so on) to their play. While the teacher can scaffold children's learning in the dramatic play center, with the online videos she has another vehicle to explore pizza making from various visual and auditory dimensions.

From building with blocks to learning dance steps to exploring simple machines, from counting to making lemonade, video-sharing sites foster children's understanding of concepts as well as vocabulary. With supervision, children also gain hands-on experience in researching on the Internet to find out more.

Teachers can include video clips as part of a circle or small group activity using an LCD projector or whiteboard, enabling all to see. With smaller groups and individually, a computer monitor is sufficient. Most clips last only a few minutes and capture children's attention. Watching a video of pumpkin picking before a class visit to a pumpkin farm can introduce the experience and begin the process of exploration, questions, and inclusion of new vocabulary. Seeing a clip showing how to make a block tower stand tall may help children who have yet to master this skill. The key to developmentally appropriate use of online videos is thoughtful, intentional planning on the part of the teacher.

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Using caution

To ensure appropriate and meaningful experiences, teachers need to create video playlists, narrowing the scope of the vast online library of videos. Video clips depicting play with varied materials can provide children with models of critical thinking and vocabulary. Following the children's interests, needs, and topics of study, teachers can create playlists that children can access through classroom computers or whiteboards.

However, rather than searching for specific video clips in front of young children, teachers should prepare in advance, creating their own playlists. For instance, before a class begins, a teacher could copy and paste the web address for a particular video into a Word document and then play it in a web browser simply by clicking on it.

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Taking this concept further, it is now possible for educators to provide relevant YouTube video clips as part of an online blog. The website http://childrensyoutube.blogspot.com provides an example. To learn how to include specific videos on your own blog, see "Resources for Using Online Videos in the Classroom."

Initially, teachers need to be proactive and facilitate children's use of videos. As children learn how to find and click on the playlists, they can operate independently. Although the benefits of using online videos in the classroom are wide ranging, this new technology is certainly not without its limitations and potential concerns. After all, since the medium is predominantly democratic, anyone can participate, sometimes in a manner that violates guidelines. As a result, submissions of video content that is not appropriate for young learners have been rising.

To address these challenges, Google has hired hundreds of reviewers to monitor video uploads on a 24/7 basis, while also relying on its online community to report offensive postings, which Google then removes. In addition, the company uses web crawlers, or search bots, to automatically search for and remove offensive content (Rosen 2008). Teachers and parents can consult various articles that address the risks of using technology. In particular, an online article by Shields and Behrman (2000) provides many insights.

In short, video-sharing sites are a mixed bag of educational as well as inappropriate content. While some may argue that the existence of the latter makes this particular

Resources for Using Online Videos in the Classroom

Why YouTube is an educational tool: www.webpronews.com/topnews/2008/11/13/top-reasons-youtube-is-a-great-educational-tool

How to put a video on YouTube: www.youtube.com/watch?v=e-r5cKzjwB0 or http://answers.ask.com/Consumer_Electronics/Portable_Audio_Players/how_to_put_a_video_on_youtube

To add video playlists to a blog:

- www.google.com/support/blogger/bin/answer.py?hl=en&answer=80767
- www.youtube.com/watch?v=ZnehCBoYLbc

Sample Videos for the Early Childhood Classroom

At a Shoe Store (dramatic play): www.youtube.com/watch?v=eU3Wc5r1KSU

Let's Go Shopping! (English lesson): www.youtube.com/watch?v=Q-1tfWzHgOA

Making Dough for a Homemade Pizza (demonstration): www.youtube.com/watch?v=72oe_j-0gwE

Stacking Boxes and Cylinders (demonstration): www.youtube.com/watch?v=q7pX2fCJpmI

Transportation: www.youtube.com/watch?v=tqtcH6K3w54

"Just Wash Your Hands" (Bill Nye the Science Guy): www.youtube.com/watch?v=3ELm7VjrFg4

technology useless as a teaching tool, we argue that it is the role of adults to leverage its benefits.

Conclusion

When technology is integrated in a meaningful way into early childhood curriculum, the possibilities for learning are endless (Hong & Trepanier-Street 2004). With the rise of video-sharing sites, teachers and children have the opportunity not only to view existing videos but also to create their own. Online videos are becoming ubiquitous, readily available on millions of computers, cell phones, and now, even televisions.

The challenge is leveraging this technology so that it can be used for educational purposes. Within the realm of early childhood education, it is clearly the role of parents and educators to foster learning opportunities. One potential frame for doing so is to consider the exchange of video-based information as being like the development of a new pattern language in which a community of learners shares ideas and builds on them.

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