

# The Magic of Emerging Technology



“Any sufficiently advanced technology is indistinguishable from magic.”

—Arthur C. Clarke, *Profiles of the Future*, 1961

What is an *emerging technology*? The Wikipedia entry on emerging technologies acknowledges that there does not seem to be an exact meaning other than new technology that is potentially powerful, such as genetic manipulation, artificial intelligence, and nanotechnology. From the Web site for the O’Reilly conference on emerging technologies (<http://conferences.oreillynet.com/etech/>), one could deduce that an emerging technology is one that is sufficiently advanced, which of course begs the question, “How do you know when it is sufficiently advanced?” I love the answer they suggest and the premise for their 2007 conference. They turn to Clarke’s Third Law (cited above) for a definition.

As the O’Reilly planners classify potential speakers for their conference, they further clarify what they mean by magic: “If your magic makes complex things simple or makes the impossible possible, we want to know about it.”

This makes sense to me, and I can understand this definition. Lots of technologies are magic to me, but the current show stopper is VOIP (voice over IP). That I can use Skype and my computer in Eugene, Oregon, to talk to Julie Lindsey, our curriculum specialist for ICT, in Dhaka, Bangladesh is magic. Never mind that her connection wasn’t working very well; we still communicated for a few minutes before deciding that it needed to work a little better. Their system was being upgraded, and it should work much better the next time we try it.

What is emerging educational technology? This answer seems obvious: If the magic has potential for helping students learn, then it is an emerging

technology. If it is also easy and transparent and cheap or free, then it is a sure-fire winner!

Happily for us, many of the new Web 2.0 tools and applications, such as blogs, wikis, audioblogs, and RSS, are just that. The tools also fit nicely with current theories on how students learn. Learning is a social activity. Student blogs can reveal student thinking and demonstrate growth over time and help with student metacognition or thinking about thinking. Wikis and blogs can help organize and manage knowledge. It is collaborative in that everyone can contribute. VOIP with or without built-in cameras can open the classroom to the world much more simply and cheaply than any previous technology.

Sometimes the learning curve is steeper with emerging technology, but it carries even greater learning rewards when students master difficult and complex concepts. I’m thinking of technologies such as Geographic Information Systems (GIS), probeware, robotics, 3D software, full-dome video (see p. 12), and serious games and simulations. Some of these technologies put real-world tools into the hands of students and allow them to work on real-world problems. Others allow them to create their own products and learn difficult concepts along the way. But they also demand knowledgeable teachers who must be able to use the tools and understand why they are magic and how the magic works. Many of these technologies are expensive, but open source software is emerging for some as well.

Our jobs are exciting but challenging. We need to be capitalizing on all these emerging technologies to make learning magic for our students and ensure that they understand that magic. ■

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