

Effective Technology Integration



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The intersection of technology, pedagogy, and content knowledge (TPACK) is at the heart of effective technology integration. In this issue, Punya Mishra and Matthew Koehler discuss the TPACK framework and how teachers with this knowledge can creatively repurpose technology tools for educational purposes (see page 14).

Acquiring TPACK is an ongoing process that requires a constant examination of the interplay among the three areas. In this framework, technology is not an add-on but is truly integrated into the curriculum. What are some resources for developing TPACK?

Mishra and Koehler use a learning-technology-by-design approach where they work with small groups to develop technological solutions to authentic pedagogical problems. The examples from their article are from a course that Mishra taught at Michigan State University. See the TPACK wiki (www.tpack.org) for more information.

Mishra and Koehler have inspired others to pursue effective technology integration. Judi Harris, Mark Hofer, and their colleagues at the College of William and Mary are looking at each content area to determine the best activities to teach it. Then they look for technologies that support the activity type. It is very interesting to see the activity types for the various curricular areas and how they are organized. For example, the social studies activities are divided into knowledge building, knowledge expression, and specific knowledge expression for each of the following: convergent, written divergent, visual divergent, conceptual divergent, product-

oriented divergent, and participatory divergent. Each area has four or more activity types plus supporting technologies. Teachers look at the content they are teaching, choose a variety of activity types for exploring the content, and design curriculum using the technologies that fit with the activity types. This approach helps teachers choose from a variety of activity types and encourages them to use a greater variety of learning activities. The result is a richer learning experience with the potential of meeting more individual student learning needs. See the Activity Types wiki (<http://activitytypes.wmwikis.net>) for more information.

Another approach that looks at the intersection of all three types of knowledge is universal design for learning. UDL is a framework for creating flexible goals, methods, materials, and assessments that accommodate learner differences. It's a framework that depends upon the varied and flexible nature of new media. It embraces any curriculum design methodology that is based on research about how students learn and that acknowledges the individual differences between students. For more on UDL, visit www.cast.org/teachingeverystudent/ideas/tes. For more on UDL and Web 2.0, visit <http://udltech-toolkit.wikispaces.com/About+UDL>. Don't miss the UDL Playground at NECC 2009, organized by ISTE's SETSIG (www.iste.org/setsig).

None of these approaches is mutually exclusive. They all consider the three knowledge areas of content, pedagogy, and technology to provide tools for effective curriculum design to meet all learners' needs.

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