

School-wide Technology Integration



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How do we reach the holy grail of school-wide technology integration in the curriculum? An interesting framework for technology integration coming out of the teacher education community is called Technological Pedagogical Content Knowledge (TPCK)—the intersection of technological, pedagogical, and content knowledge. It is easiest to grasp in a graphical form as the overlapping area of three circles in a Venn diagram (Figure 1).

Presumably, teachers know their content area, pedagogy, and the pedagogy for teaching their content area (Pedagogical Content Knowledge—PCK). Technology may or may not be a new area. But the framework highlights the idea that it is also important to know how technology affects your content area (Technological Content Knowledge—TCK) and how technology adds to your pedagogical toolkit (Technological Pedagogical Knowledge—TPK).

The successful integration of technology into teaching and learning requires a successful interweaving of all three (PCK, TCK, and TPK). According to researchers Punya Mishra and Matthew Koehler,

it requires an understanding of the representation of concepts using technologies, pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be

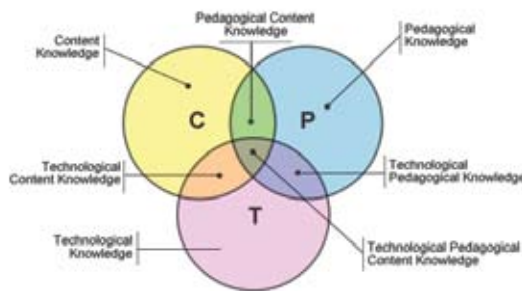


Figure 1. Technological Pedagogical Content Knowledge is the intersection of technological, pedagogical, and content knowledge. Source: <http://www.tpck.org>

used to build on existing knowledge and to develop new epistemologies or strengthen old ones. (*Teachers College Record*, 108(6), 1017–1054.)

The framework highlights the idea that it is not enough to have general technological knowledge, and that staff development focused only on technology will not accomplish much. You can't separate out content as it is affected by technology, and technology affects what is important to know and be able to do as well as providing tools.

It does make sense for teachers to work in groups based on subjects they teach or possibly the essential questions they want to address, but we also need to examine the complex relationships and begin to understand the interactions. The curriculum design process certainly encourages thinking about these relationships. Engagement in curriculum design perhaps through a curriculum mapping process that includes PCK, TCK, and TPK could involve all teachers and lead to school-wide technology integration. ■

By Anita McNear

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