

Chapter 1

Thematic Considerations in Integrating TPACK in a Graduate Program

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ABSTRACT

The integration of technology into classrooms is an increasingly important issue in America's schools, and at the core of this integration is the training of teachers. Teacher educators seeking to impact teachers' use of technology should recognize the needs of these learners as well as their knowledge as practitioners, in order to expand their knowledge and help them think about technology in creative ways. In this chapter, the authors describe the design and implementation of the Master's program in Educational Technology at Michigan State University (MSU) as an example of an institution's attempts to improve their facility to incorporate technology into the classroom practice. The authors briefly define the concept of the TPACK and how that theoretical model is important in thinking about technology with teacher practitioners, and how it helped to focus the design of the Educational Technology program at MSU. The authors then outline central TPACK themes that run through each of the stages of this program, and how each level, in turn, informs the others. Finally, the chapter offers concrete examples of TPACK in practice at each stage of the Master's program in educational technology.

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INTRODUCTION

The professional development of teachers has historically focused on the development of teachers' knowledge of content along with pedagogical moves that might be implemented (Lawless & Pelligrino, 2007; Wilson & Berne, 1999). As computers, the Internet, video games, and other newer technologies have been infused into the lives of students, so too have they been added into the educational repertoire of schools and other educational institutions. As new technologies have emerged, educators have sought the best path towards implementation, both in terms of the educational value gained by the learner as well as the development of a teaching force that is able to fluently navigate this changing educational landscape (Lawless & Pelligrino, 2007).

In some cases, that path to implementation has been met with resistance on the part of teachers unfamiliar with the technology and thus unwilling to utilize the full potential of the tools (Bauer & Kenton, 2005; Cuban, Kirkpatrick & Peck, 2001; Ertmer, 2005; Keengwe, Onchwari & Wachira, 2008). Administrators, support staff, and IT professionals have had a role as well, as they have often been unwilling or unable to offer the support and infrastructure necessary for the success of these initiatives. As a consequence, technology integration plans ranging from Interactive Whiteboards to 1-to-1 laptop initiatives have floundered. It is not the technology itself that is at issue, but rather the theoretical grounding of the implementations. In the end, the infusion of technological tools and innovations into the classroom must be firmly situated to both intersect and inform the teachers' existing pedagogical and content knowledge.

Why TPACK for Professional Development of Teachers?

The TPACK framework (American Association of Colleges of Teacher Education, 2008; Koehler & Mishra, 2008; Mishra & Koehler, 2006), initially

described by Mishra and Koehler (2006), helps to conceptually ground technology-integration initiatives by anchoring the issues in the context of teacher knowledge. Building on the work of Lee Shulman (1986) on Pedagogical Content Knowledge (PCK), the framework conceptualizes how teachers' pedagogical and content knowledge interacts with technology.

In this framework (see Figure 1) three areas of teachers' knowledge are depicted: content knowledge (CK), pedagogical knowledge (PK), and technology knowledge (TK). What is most important about the framework is the ways in which these areas intersect and inform one another, so that one might focus on teachers' technological pedagogical knowledge (TPK), or the ways in which the knowledge of best practices and the knowledge of the technology combine so that a teacher implements the technology in a way sure to impact student learning, for example. When all three are combined for TPACK, what we have is a framework in which the teacher's knowledge is combined to produce strong teaching of the content that utilizes technology in a way to ideally produce and enhance student learning (Harris, Mishra & Koehler, 2009; Koehler & Mishra, 2008; Koehler & Mishra, 2010; Mishra & Koehler, 2006; Mishra & Koehler, 2008; Mishra & Koehler, 2009).

The Master's program in Educational Technology at MSU has been designed with TPACK in mind in two key ways. First, the program allows teacher practitioners an opportunity to grow in their own TPACK. Second, the TPACK framework inspires the design of the courses themselves, so that the instruction models the very ideas that we would like the teachers to utilize in their own practices. In this way, TPACK is both part of the learning outcomes and the way in which those outcomes are met. This mutually informative cycle not only improves the ways in which the teachers gain TPACK, but also meets their needs as adult learners in a graduate program.

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