

Technological Pedagogical Context Knowledge (TPACK)

Discussions with Leaders in the Field: SIG-Instructional Technology

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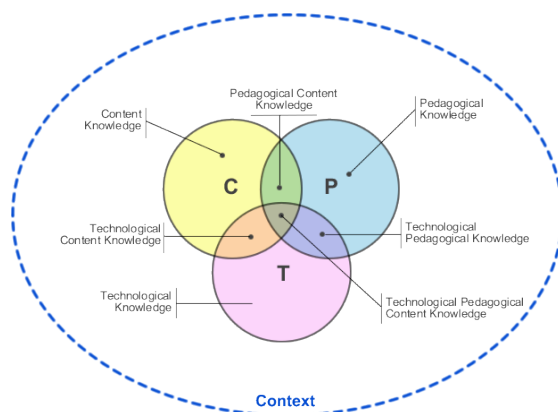


What is TPACK (formerly TPCK)?

Technological Pedagogical Content Knowledge (TPACK) attempts to capture some of the essential qualities of knowledge required by teachers for technology integration in their teaching. At the heart of the TPCK framework, is the complex interplay of three primary forms of knowledge: Content (CK), Pedagogy (PK), & Technology (TK) and their intersections with each other. Considering the intersections we get:

- *Pedagogical Content Knowledge (PCK)* – Taking P and C together, we get knowledge of pedagogy that is applicable to the teaching of specific content.
- *Technological Content Knowledge (TCK)* – At the intersection of T and C is the knowledge of the relationship between technology and content.
- *Technological Pedagogical Knowledge (TPK)* - the existence, components and capabilities of various technologies as they are used in the settings of teaching and learning.
- *Technological Pedagogical Content Knowledge (TPCK)* – The intersection of all three components characteristic of true technology integration and the negotiation of the relationships between these three components of knowledge.

True technology integration is understanding and negotiating the relationships between these three components. A teacher capable of negotiating these relationships represents a form of expertise different from, and greater than, the knowledge of a disciplinary expert (say a mathematician or a historian), a technology expert (a computer scientist) and a pedagogical expert (an experienced educator). Effective technology integration for pedagogy around specific subject matter requires developing sensitivity to the dynamic, transactional, relationship between all three components.



Discussion Issue I: How to Develop TPACK in Teachers?

The Learning Technology by Design (LT/D): In this approach, in-service teachers work collaboratively in small groups to develop technological solutions to authentic pedagogical problems. In order to go beyond the simple “skills instruction” view offered by the traditional workshop approach, the LT/D approach argues that it is necessary to teach technology in contexts that honor the rich connections between technology, the subject matter (content), and the means of teaching it (the pedagogy).

TPACK-based activity types as a technique for professional development of teachers. This technique emphasizes domain specific activity types and argues that this may authentically and effectively assist teachers' and teacher educators' technology integration efforts.

Others?

Discussion Issue II: How to Measure TPACK?

Understanding the development of TPACK through an analysis of Design talk: Qualitative and quantitative analysis of students and faculty engaged in a design task.

TPACK Survey: Past, present and future...

Others?

Key readings (more at TPACK.org)

AACTE Committee on Innovation & Technology (2008). *The Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators*. Published by AACTE & Routledge.

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A new framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.

Neiss, M. L. (2005). Preparing teachers to teach science and mathematics with technology: Developing a technology pedagogical content knowledge. *Teaching and Teacher Education*, 21, 509-523

Koehler, M. J., & Mishra, P. (2005). What happens when teachers design educational technology? The development of Technological Pedagogical Content Knowledge. *Journal of Educational Computing Research*, 32(2), 131-152.

Margerum-Leys, J., & Marx, R. (2002). Teacher knowledge of educational technology: A study of student teacher/mentor teacher pairs. *Journal of Educational Computing Research*, 26(4), 427-462.

Getting involved



*TPCK WIKI @ tpck.org
Participate & Contribute (free login)*



*TPACK Special Interest Group @
SITE, and SIG-TACTL @ AERA
(The TPACK friendly SIG)*



*Society for Information Technology &
Teacher Education (SITE)
! TPACK strand & now SIG*

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