

# Adapting the TPACK Framework for Online Teaching Within Higher Education

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## ABSTRACT

There are ongoing obstacles in accurately assessing and effectively applying TPACK within online higher education contexts. In this study, we adapt the original TPACK constructs for application within online higher education, and share the results of a case study using this adapted analytical framework. This qualitative case study investigates and describes one experienced instructor's practice within a graduate-level online course. The instructor enacted a high-level of TPACK proficiency through combining content, pedagogy, and technology as well as masterfully using these knowledges within her online teaching practices. This research demonstrates one way the TPACK framework can be used as an analytical tool by researchers to investigate instructors' online teaching practices. In addition, the modified TPACK descriptions and evaluation criteria can be used to better assess TPACK and further support higher education faculty's online pedagogy development.

## KEYWORDS

Online Higher Education, Online Pedagogy Development, Qualitative Case Study, Qualitative Content Analysis, Student-Centered Learning, TPACK

## INTRODUCTION

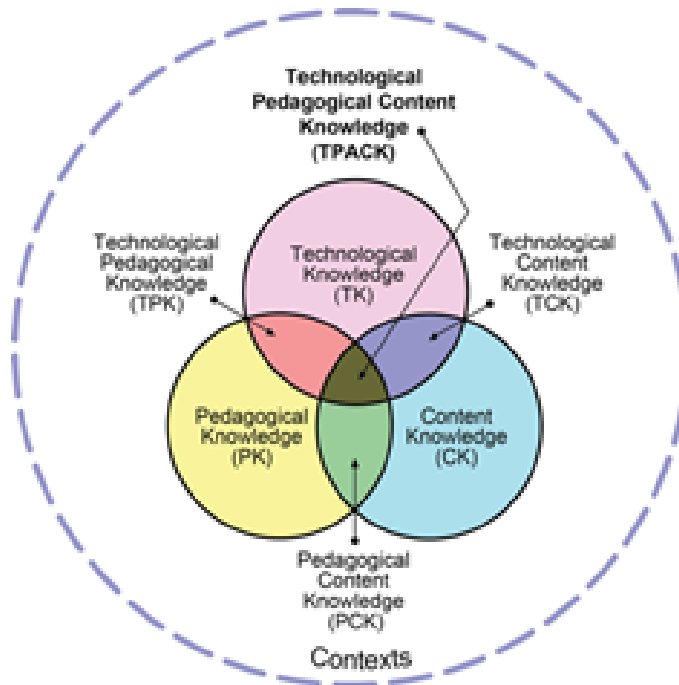
Within the discipline of K-12 teacher education, the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) is a guiding concept that illustrates the interdependency between instructors' technology (T), pedagogy (P), and content (C) knowledge that comprises effective teaching practices (Koehler, Shin, & Mishra, 2011; Mishra & Koehler, 2006) (see Figure 1). While TPACK continues to have important theoretical and practical impacts in pre-service and in-service teacher education, to date, this framework has had very limited impact in other areas of higher education including online higher education (Herring, Meacham, & Mourlam, 2016; Kushner Benson & Ward, 2013; Meyer & Murrell, 2014). However, with 33% of higher education faculty having taught at least one online course, and 40% teaching at least one blended course (Straumsheim, Jaschik, & Lederman, 2015), there is an urgent need for guiding frameworks related to supporting effective online teaching practices within higher education contexts (Meyer, 2014).

In both theoretical and empirical research related to online higher education, the importance of pedagogical approaches (Meyer & Murrell, 2014), the effectiveness of technology integration (Sun, 2016), as well as the understanding of online instructors' roles (Baran, Correia, & Thompson, 2011;

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Figure 1. Illustration of the TPACK framework (Mishra and Koehler, 2006, reproduced with permission of the publisher, © 2012, <http://tpack.org>)



Bawane & Spector, 2009; Chang, Shen, & Liu, 2014) have been widely, yet separately, investigated. Notably, these research emphases are consistent with the distinct concepts that comprise the integrated TPACK framework. There remains, however, very limited research on the use of TPACK itself as a guide within online higher education outside of teacher education (Herring et al., 2016) despite researchers continued call that TPACK holds promise for guiding the development of effective online teaching practices (Meyer, 2014). According to a national study conducted in the United States that documented the theories used for faculty development in online higher education teaching, TPACK is used by only 13% of institutions and is ranked 11th among all theories shared by respondents (Meyer & Murrell, 2014). Wu (2013) conducted a systematic review of published empirical TPACK research from 2002 to 2011, and results revealed that among 24 TPACK studies, only 2 focused on the university or college teacher's use of TPACK.

We aim to support researchers and practitioners in further understanding the TPACK framework's usefulness in online higher education from theoretical, methodological, and practical lenses. To address the research purpose, we first review relevant TPACK research within online higher education contexts. Next, we adapt the TPACK constructs for application within online higher educational contexts, and share the results of an experienced higher education instructor's TPACK practice within a graduate-level online course. We conclude by proposing a modified TPACK description for researchers and practitioners to better assess TPACK and support online pedagogy development in higher education contexts.

## TPACK-RELATED RESEARCH WITHIN ONLINE HIGHER EDUCATION

There are several studies that shared explicit, detailed investigations of instructors' TPACK knowledge and teaching practices in online higher education contexts, such as a novice online

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