Chapter 74
Context and Teaching With Technology in the Digital Age

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ABSTRACT

Context is an essential aspect of educational research. In this chapter, the authors discuss how context has been avoided or has referred to different constructs among educational technology research, especially among research on the Technological Pedagogical Content Knowledge (TPACK) framework. The authors discuss the descriptive, inferential, and practical implications of the framework for the context of teachers' TPACK advanced by Porras-Hernández and Salinas-Amescua (2013). Then, they exemplify the power of this framework by using it to guide a descriptive study conducted to determine the extent to which the publications included context. They also describe what researchers meant by context as understood through the framework for context. The authors found that context was important but often missing from research about TPACK and that the meaning of context has differed widely. They discuss these findings in relation to the TPACK literature as well as for educational technology research.

INTRODUCTION

"Context" has had two meanings that make it difficult to discuss without being clear about which is used. Commonly, "context" means things in an environment that are not the focus. This idea is its first meaning with respect to educational research—context is *that which surrounds* the object of study. Context may also refer to the things woven together with the focus in this sense, the things surrounding the object of study are unable to be separated from it. This idea is its second meaning with respect to educational research—context is that which is *woven together with* the object of study. The former definition suggests context and teachers are independent and capable of being looked at alone, and the latter suggests context and teachers are dependent upon one another and not able to be looked at alone. Each meaning affords and constrains how teaching and learning with technology are conceived, measured, and enhanced.

Despite the essential nature of context in educational research, there are some signs that educational technology research has avoided context (Garrison, 2003; Kelly, 2010). Among research on the knowledge needed to teach with technology as understood through the Technological Pedagogical Content Knowledge (TPACK) framework (cf. Koehler, Mishra, Kereluik, Shin, & Graham, 2014), context is conspicuously missing (Kelly, 2010; Porras-Hernández & Salinas-Amescua, 2013). Indeed, Kelly (2010) described the "virtual absence of the fourth element of the TPACK model—context—in conceptual analyses and applications of TPACK as well as in research studies" (p. 3887). One effect of not considering teachers' context is theoretical: There are comparatively few frameworks or theories to guide the consideration of context in educational technology research and development. Another effect is that the field's understanding of how technology is used in the messiness of classrooms and schools is limited. In addition, educational technology has not made a "contextual turn" like the one that occurred in educational psychology as sociocultural perspectives were integrated into psychology (Cole, 1998; Rogoff, 2003). Finally, educational technology research has lagged in areas in which it could lead, such as how increasingly diverse students are (or are not) provided opportunities to become educated in increasingly diverse learning environments.

Considering this lack of attention to context, there is a need to bring together research about context and research about educational technology. We argue that considering context is essential to understanding teaching with technology in the digital age. We use this chapter first to define context and review the literature on prior research relating to context in different scholarly traditions. Second, we describe a conceptual framework as advanced by Porras-Hernández and Salinas-Amescua (2013) for thinking about context in the TPACK framework. Third, we discuss the value of the framework descriptively, inferentially, and practically. Fourth, we describe the design, results, and significance of our content analysis on the extent to which context is included in publications about TPACK, as well as what researchers mean by context as guided by the framework for context. Finally, we describe future research directions for TPACK and educational technology.

BACKGROUND

Although educational technology research has rarely included context, educational research broadly defined has a rather extensive history with context. In 1938, Dewey used the word "situation" in a way that aligns with present definitions for "context" and its stated importance. Around the same time, Vygotsky suggested that individuals' contexts mediate their psychological development. In this section, we review of more recent definitions as a way of introducing key ideas and research approaches relevant to considering context in educational research.

Definitions

Context has taken many different meanings across time and scholarly traditions. In modern usage, the meaning of "context" varies for researchers in different fields. In social psychology, for example, context implies the social environment, meaning the presence of others and their effects on individuals (Ross & Nisbett, 2011). In cultural psychology, on the other hand, context denotes the *cultural* context, the shared values of a group of individuals (Heine, 2011). In other fields, context has a broad meaning that is not specific to a discipline or topic. In such cases, context means the things in the environment

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