



Videos, pairs, and peers: What connects theory and practice in teacher education?



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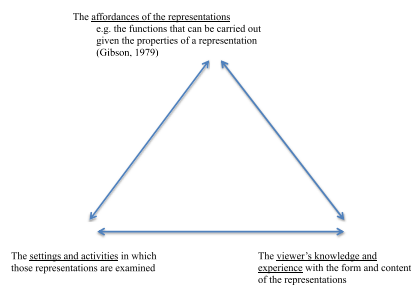
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HIGHLIGHTS

- Pre-service teachers connected coursework and observations of practice in videos.
- They also described ways in which the coursework could be applied to the classroom.
- Applications usually reinforced pre-service teachers' conceptions of teaching.
- Over half of reported transformations resulted from discussions with a partner.

GRAPHICAL ABSTRACT



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ABSTRACT

This article reports on the use of videos to address a long-standing problem in preparation for many professions: how to help novices bridge the gap between abstract bodies of professional knowledge and the “craft knowledge” of practitioners. The study focuses on the use of videos of experienced high school teachers to help pre-service teachers to deepen their understanding of key pedagogical strategies in social studies and to apply what they learn in a student teaching seminar to their classroom practice. The findings demonstrate the kinds of scaffolding needed to encourage pre-service teachers to challenge and deepen their initial conceptions.

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1. Introduction

Researchers and practitioners alike often lament the disconnect

between what student teachers do in their teacher education coursework and in classroom practice (Cochran-Smith & Lytle, 1999; Grossman et al., 2009; Shön, 1983; Shulman, 1987). While teacher education programs have long-used arrangements like observations and field experiences to help novices learn from practice, these arrangements frequently take place outside of teacher education coursework in ways that can make learning from practice a relatively individual and idiosyncratic experience

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(Feiman-Nemser & Buchmann, 1985; Lampert & Ball, 1998). Under these conditions, results, at best, are mixed (Anderson & Stillman, 2013) and alternatives to such conventional approaches to student-teaching and field-experiences are sorely needed (Baeten & Simons, 2014). One alternative approach is to use video, animations and other means to create multimedia representations of teaching (Herbst, Aaron, & Chieu, 2013; Herbst, Chazan, Chen, Chieu, & Weiss, 2011). Multimedia representations of teaching can serve as shared texts: common experiences that pre-service teachers, their mentors, and teacher education faculty can study and analyze together in a wide range of settings, including within their regular coursework (Cherrington & Loveridge, 2014). In this article, we report on one approach to using multimedia representations of teaching (in this case web-based videos of teaching practice) to help pre-service teachers to apply what they are learning in a student teaching seminar to their classroom practice. Below, we describe the conceptual framework and questions guiding the study, discuss our methods, and share our findings.

1.1. Background

Research on the uses of video in teacher education and professional development provides some indication of why the use of video and “virtual field experiences” might help both pre-service and practicing teachers connect theory and practice. In particular, in contrast to observations in classrooms, videos of teaching provide teachers with opportunities to step back from day-to-day practice and explore aspects of teaching and learning in depth (Gaudin & Chalias, 2015; Maher, Palius, Maher, Hmelo-Silver, & Sigley, 2014). Further, videos of teaching make it possible for teachers to see and revisit complex activities from multiple perspectives (Brophy, 2004; Spiro, Coulson, Feltovich, & Anderson, 1988; Spiro, Feltovich, Jacobson, & Coulson, 1992; Wetzel, Radtke, & Stern, 1994). Viewing videos also allows teachers to engage with more expert peers and mentors to develop new ways to look at what they are seeing and experiencing (Borko, Koellner, Jacobs, & Seago, 2011; Putnam & Borko, 2000; Sherin, 2004; Tripp & Rich, 2012; Zhang, Lundeberg, Koehler, & Eberhardt, 2011). Ultimately, the opportunities that videos of teaching afford for individual and collective reflection have the potential to de-privatize teaching practice and help teachers transform their understanding of teaching (Anders, Hoffman, & Duffy, 2000; Brophy, 2004; Cherrington & Loveridge, 2014; Jaffee, Marri, Shuttleworth, & Hatch, 2014; Koc, Pekcr, and Osmanoglu, 2009; Sanny & Teale, 2008).

Learning from multimedia representations of teaching, however, is a complex affair (Hatch, 2005; Pointer Mace, Hatch, & Iiyoshi, 2008). Using videos as a prompt for discussions in teacher education and professional development does not necessarily result in teachers thinking critically about what they are seeing, building their understanding, or challenging and deepening their initial conceptions (Brophy, 2004; Cherrington & Loveridge, 2014). In some cases, watching videos of teaching can interfere with desired learning outcomes (Beitzel & Derry, 2009) and may reinforce some teachers' current conceptions of teaching rather than encouraging them to challenge and examine those conceptions (Brophy, 2004; Erickson, 2007). In short, while videos of teaching practice may create opportunities for reflection, that reflection may be unproductive rather than productive (Cherrington & Loveridge, 2014; Davis, 2006). As Davis (2006) explains it, unproductive reflection is typically general, unfocused, and often judgmental. While no clear consensus exists on the precise character of productive reflection, researchers note that productive reflection goes beyond mere description of what is noticed, takes into account other points of view, makes comparisons, questions assumptions and reframes

individual perspectives on teaching (Cherrington & Loveridge, 2014; Fund, 2010; Jay & Johnson, 2002; Moore-Russo & Wilsey, 2014).

The goal of this study was to learn how to use videos to prompt such productive reflections and help pre-service teachers go beyond superficial reflection by questioning their own assumptions and consider different perspectives. To accomplish this goal, we drew from a larger study of the use of videos in teacher preparation course work to examine instances in which pre-service teachers discussed applying pedagogical strategies they observed in videos to their own classroom practice. We focused particularly on identifying the factors and conditions that encouraged pre-service teachers to apply strategies in ways that challenged their initial conceptions. Below, we outline the theoretical framework guiding the design of the study and review some of the factors that may encourage or discourage pre-service teachers from examining, challenging, and changing their initial conceptions of teaching.

1.2. Theoretical framework

In order to better understand the factors that can limit or enhance the educational value of viewing videos of teaching in promoting productive reflection, and as a means of connecting theory and practice, we take a situated perspective on learning that takes into account the physical, social, and cultural environment in which people learn (Brown, Collins, & Duguid, 1988; Greeno, Collins, & Resnick, 1996; Lave & Wenger, 1991; Sherin, Linsenmeier, & van Es, 2009). The situated perspective challenges the traditional notion that learning is an individual process of knowledge-acquisition. Instead, the situated perspective emphasizes that learning is shaped by the tools, resources, people and the properties of the settings within which it takes place (Greeno, 1997). The affordances of the materials and settings play a particularly crucial role in influencing learning. Affordances refer to the specific functions that can be carried out given the properties of particular objects and situations (Gibson, 1979). Thus, a cup creates opportunities for holding and drinking liquid, while a ball affords opportunities for kicking, throwing and catching. Similarly, a soccer field and a soccer game afford opportunities for individuals to learn to control a ball with their feet while a baseball diamond and baseball game, create opportunities to throw and hit. From this standpoint, it is impossible to gauge what someone has learned without taking into account the characteristics of the situations and settings within which learning activities take place.

Research from a situated perspective highlights three aspects of the setting in which video is used that may play a particularly important role in supporting (or inhibiting) what pre-service teachers learn (See Fig. 1):

- The properties and functions of the representations, materials, technologies and other physical resources used (Gibson, 1979);
- The knowledge and experiences that participants bring to the learning situation (Bransford, Brown, & Cocking, 2000);
- The social arrangements and activities in which participants examine those representations (e.g., the same video clip may be interpreted differently when seen on its own and when seen in the context of related clips) (Grossman, Smagorinsky, & Valencia, 1999; Koehler, Yadav, Phillips, & Cavazos-Kottke, 2005; Kosma, 1991; Salomon, 1979)

Below, we first describe the role that the physical, personal, and social aspects of the setting can play in shaping learning, and then we highlight the particular aspects that afford opportunities for pre-service teachers to reflect on and challenge their initial conceptions of teaching.

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