

# Reflective Learning With Video-Based Annotations

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## EXECUTIVE SUMMARY

*The use of video-based interactive annotation and analysis with time-attached comments and reflection are on the rise in teaching and learning. Although video technologies are becoming more affordable, video annotation tools require sophisticated integration of database management, metadata mapping and retrievability, user management, data privacy, and storage. These issues have contributed to the limited application of these tools in educational settings. To understand the teaching and learning possibilities of these video annotation tools, the researchers conducted a case study with a purposeful sample of faculty from interdisciplinary backgrounds. The study took an inductive approach through comparison of two video annotation systems, exploratory applications as different user roles, observations, usability tests, and pilots with in-service teachers.*

## INTRODUCTION

Preparing pre-service and in-service teachers requires integrating knowledge and content into community-based practice through reflective learning (Yasin, Rahman, & Ahmad, 2012). With evolving technologies, video capturing of teaching and learning moments accompanied with on-the-timeline analysis and comments has been used for teacher education and professional development (Gibbons & Farley, 2019; Stoetzel & Shedrow, 2020). Video-based reflection and interactive annotations provide the joint merits of capturing real-time experience with visuals, audio, and context as well as reserving the replayed moments for self-reflection and mediated interactive comments at precise time points. These reflections

facilitate substantial possibilities for pre-service and in-service teachers in using time- and space-based practices and interactions. While powerful, video-based technology applications can also imply challenges related to ethics, power dynamics of usage, and affordability of technologies (Goldman, Derry, Pea, & Barron, 2014; Markle, West, & Rich, 2011).

A key component of teacher preparation is reflection. Dewey (1938, 1986) defines reflection as a mode of thought during which a person “look[s] back over what has been done so as to extract the net meanings which are the capital stock for intelligent dealing with future experience” (p. 110). Reflection works as a continuous interplay between inference and observation (Clara, 2015). Gelfuso’s (2016) study contends that reflection as related to preservice education requires that when professional understandings of content (in this case literacy) are not yet well-developed, one needs support from someone who does have well-developed professional understandings throughout the reflection process.

The potential of video-based annotation tools provides the opportunity for preservice teachers to share their content teaching with their content teachers who can then provide their support and advice through annotations on their pre-recorded videos. These activities can only effectively support teachers’ growth when “active and conscious engagement” (Yasin, Rahman, & Ahmad, 2012, p. 3839) is documented through instructor-student and student-student interactions. In online and blended learning environments, the usability, management, and communication functions of the technological tools play a critical role in facilitating reflective learning.

Exploring the possibilities of various video analysis tools, this study poses the question: “*To what extent does a video annotation system support reflective learning in terms of system usability, management, and communication?*” The researchers conducted a multi-phase case study of two video annotation tools with interdisciplinary lenses from the Cultural-Historical Activity Theory (CHAT) perspective. CHAT is a sociocultural learning theory that takes a learner-centered approach by taking into account the important roles that social relations, community, and culture play in cognition and learning (Wang, 2007). Using CHAT theory, researchers can view “pieces of a larger puzzle” (Grossman, Smagorinsky, & Valencia, 1999, p. 4) by focusing on the sociocultural elements of an activity.

## **MAIN FOCUS OF THE CHAPTER**

### **Reflective Learning**

Reflective learning refers to learners’ continual and active participation in their problem inquiry with a continuous and critical judgment of the inquiry process and outcomes for possible improvement (Farr & Riordan, 2012; Lyon, 2006; Rodman, 2010). Retrospective, anticipatory, and contemporaneous reflection (van Manen, 2008; Edwards, 2017) can uncover the paradigmatic, prescriptive, and causal assumptions (Brookfield, 1995) that inform decision-making. According to Yasin, Rahman, and Almad (2012), surface or non-reflective learning resides in learner’s habits, usually associated with minimal thoughts, and rote memorization. Reflective learning is considered favorable to deep learning, in which learners experience the learning process in touch with subject topics with rich resources from multiple channels (Cifuentes et al., 2011, Lai, 2013).

Learners can involve interactions with peers, teachers, related experts, and resources during their process of learning reflection, researchers also suggest that learners should concern the social dimension in their reflective engagement, with an awareness of learning dialogs and interactions (Atkinson, 2011;

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