

## Video-Supported Teacher Reflection and Coaching

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**Abstract:** My work is focused on developing theoretical understanding and practical outputs on how to support productive teacher reflection (in video-coaching settings) to respond to problems of practice. Design-based (implementation) research is used as an approach to serve these aims. I plan to expand this research line and investigate how various technologies can support different types of teacher reflection to positively impact teaching and student outcomes.

### Theoretical framework

My research takes place in the domain of teacher development, and is specifically focused on supporting teachers' reflection in video-coaching settings. While a cognitive perspective foregrounds the focus on teachers' disciplinary knowledge and teacher expertise, a socio-cultural perspective emphasizes how learning is shaped by its contexts (Fishman et al., 2014). Often, cognitive and social-cultural views are regarded as irreconcilable, but there are examples of combining the two within the learning sciences (Danish & Gresalfi, 2018), and there have been calls for integration in the context of teacher learning (e.g., Kaiser et al., 2017). From a pedagogical standpoint (cf. Kirschner, 2009) one might argue that novice teachers still need to acquire knowledge about teaching, but when teaching commitments increase, developing knowledge about context also becomes increasingly important, and teachers need to learn how they can utilize disciplinary knowledge in meaningful ways to respond to problems of practice.

Reflection could be a key mechanism for developing these understandings, but requires support. Reflection is considered a mindful review of what is known, how this is known, and the implications it has (cf. Dewey, 1933). Technology-mediated artifacts of practice, like classroom video, can support connections to the teaching context and social support (i.e. coach) is an important facilitator of teacher learning (Fishman et al., 2014; Gaudin & Chaliès, 2015). Together, video coaching can be defined as an approach where teachers or coaches record teaching episodes and engage in video-based one-to-one or group discussions in a sustained manner (van der Linden & McKenney, 2020). While there is an important growing knowledge base on what coaches do (i.e. coach moves, Borko et al. 2014), the knowledge base on how to design video coaching for various school contexts, and flexible tools for supporting reflection quality are still limited. This is especially important as coaches often find themselves in intermediary positions between individual learning needs and school ambitions and vision, and insights from both can be leveraged to support development (Woulfin & Rigby, 2017). Coaches thus act as boundary spanners whose practices are influenced by both the school context and the needs of their teachers.

### Prior research and methods

I am working on expanding a research line on technology-supported teacher reflection that has originated during my PhD. During my PhD, I have worked on one design-based research project consistent of four sub-studies, specifically focused on developing support for coaches who use classroom video in schools. This project aimed to (a) conceptualize teacher reflection in video-coaching settings (study 1-3), (b) articulate support to improve reflection in these settings (study 2-4), and (c) reify tools for this aim (study 3-4). This project had an explorative approach, and qualitative methods were foregrounded, although mixed methods were also used.

First, empirical studies on in-service teacher video-coaching were identified and synthesized to understand video coaching design features, process, outcomes, and impacts, as well as possible relationships between them (van der Linden et al., 2022). Video coaching was found to hold much potential for various (but not all) teacher outcomes, but the evidence for impact on student learning was lacking. Moreover, this study has resulted in empirically derived theories of action for the way video coaching could support teacher outcomes. Second, a theoretical synthesis of teacher reflection literature was conducted to conceptualize teacher reflection in video-coaching settings. It was argued that various perspectives on knowledge development could shape the nature of teacher reflection, and that unifying perspectives be beneficial for teacher development (van der Linden & McKenney, 2020). This model was applied to a video coaching setting for early career teachers and using the four-components-instructional-model (van Merriënboer & Kirschner, 2017) support was articulated. Third, a Delphi-inspired study was conducted to further conceptualize and operationalize teachers' reflective dialogue in video-coaching settings (van der Linden et al., under review). Through a three-round survey and interview study, experts from teacher reflection research and practice validated the united reflection model, expressed that a formative instrument for observing reflection is most needed, and determined that a draft instrument was clear enough to be used. Finally, a proof-of-concept study evaluated the viability of an online formative assessment

tool (ReflAct) to improve teachers' reflective talk in video-coaching settings (van der Linden et al., under review). The study showed modest but concrete evidence for the viability of the tool, identified factors that can influence viability, and an evaluation framework for construction and evaluation of similar tools was created based on the study. Together, this project (a) conceptualized a model for teacher reflection in video-coaching settings that foregrounds attention to four essential components that shape the nature of reflection (b) articulated how the 4C/ID model (van Merriënboer & Kirschner, 2017) and formative assessment are suitable for supporting reflection, and (c) reified a formative assessment tool (ReflAct), as well as quality criteria for viability in terms of added value, compatibility, clarity, and tolerance for development and evaluation of similar tools.

## Future directions and contributions

Moving forward, I am interested in investigating how technologies can be leveraged to support (coaching of) various types of teacher reflection (on for and in), and how these in turn can impact classroom practice and student learning in real contexts. For example, formative assessment tools could help provide a window into the current state and desired states of individual coaching and reflection behaviors, as well as provide guidance how to close this gap. Creating knowledge that can be used in real contexts is increasingly seen as important challenge for the learning sciences, as teachers work in highly varied environments that are subjective to change, and design-based (implementation) research in research-practice partnerships is a promising route for doing this work (Ko et al., 2022). With regard to teacher reflection in video-coaching settings, questions persist about (1) the local viability, (2) conditions that support institutionalization, and (3) the effectiveness and impact on classroom practice and student learning. By integrating various theoretical lenses, I hope to contribute to a more nuanced understanding how teachers develop contextualized knowledge through reflection and how this can impact classroom practice and student learning, as well as practical outputs that align with the various contexts where reflection takes place.

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