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## **From Coursework Intervention to Fieldwork: Using video to support teacher candidates' enactment of scaffolding techniques in Language Arts**

### **Abstract**

Numerous studies have demonstrated that the use of video as a tool in teacher education can support teacher candidates' ability to notice important classroom events and reason about these events. Still, little is known about whether this leads to an improvement of teacher candidates' teaching practice in the classroom. This study aims to contribute in that respect by investigating how six teacher candidates enact and reason about scaffolding techniques, introduced during a coursework intervention, when teaching Language Arts during fieldwork. The coursework intervention made use of classroom videos to give opportunities to notice and reason around experienced teacher's use of three scaffolding techniques; strategy instruction, modeling, and feedback. This paper reports on data from the fieldwork intervention, where the candidates (a) video filmed their attempts to use scaffolding techniques with their students (N= 592 minutes), (b) selected clips for conversations with their mentors, and made screen captures of these conversations (N= 354 minutes). We analyzed the data qualitatively, relying on (a) the conceptual language in the Protocol for Language Arts Teaching Observation (Grossman, 2015) to derive codes that captured the characteristics of teacher candidates' enactment of scaffolding techniques and (b) Horn's (2007) episodes of pedagogical reasoning. Our preliminary analysis indicate that all six teacher candidates were able to enact the scaffolding techniques, although some more explicitly than others. We also found that the use of video in mentoring provided the teacher candidates with opportunities to reason around didactical dilemmas related to scaffolding techniques, which in turn helped them adapt their use of scaffolding techniques to the purpose of the lesson and the individual needs of students.

## Extended summary

### Aims and research questions

Practice-based teacher education (Hauser & Kavanagh, 2019; Ball & Cohen, 1999; Ball & Forzani, 2009) has given rise to new pedagogies for enabling teacher candidates to acquire the knowledge and skills needed to master ambitious teaching practices. Within this body of research, the potential of video as a tool to represent such practices has been highlighted (Borko et. al., 2011; Barnhart & van Es, 2015). Numerous studies have demonstrated that teacher candidates capitalize on the use of videos of teaching and that their ability to notice important classroom events and reason about these events increases (Borko et. al, 2010; Sun & van Es, 2015). Nevertheless, little is known about whether this leads to an improvement of candidates' teaching practice in the classroom (Gaudin & Chaliès, 2015). Research investigating the impact on candidates' teaching practice is called for (Cochran-Smith et al, 2016; Kavanagh & Rainey, 2017; Santagata et. al., 2021), and this study aims to contribute in that respect.

The present study is part of an overall intervention study set within an integrated 5-year teacher education program at a Norwegian university. The intervention was conducted both during the candidates' coursework in a methods course of Language Arts, as well as during their fieldwork. The coursework intervention made use of classroom videos to give opportunities to notice and reason around experienced teacher's use of three scaffolding techniques; strategy instruction, modeling, and feedback. This paper reports on data from the fieldwork intervention, where the candidates (a) video filmed their own attempts to use scaffolding techniques with their students, and (b) selected clips for conversations with their mentors, and made screen captures of these conversations.

A second aim of this paper is to examine teacher candidates' reasoning around their enactment of scaffolding techniques, as concerns have been raised that such increased attention to teaching practice might neglect the importance of developing pedagogical judgment and reasoning – and attention to the *purpose* of teaching – in teacher education (Kavanagh, Conrad & Dagogo-Jack, 2020; Kennedy, 2016; Philips, et. al., 2019; Zeichner, 2012). This two-fold aim is summarized in the related research questions: *What characterizes the teacher candidates' (1) enactment of scaffolding techniques during fieldwork, and (2) their reasoning around these episodes?*

## Methods

This paper reports on six teacher candidates who were strategically sampled because they had been assigned the same practice school and/or mentors that had participated in a professional development program targeting instructional scaffolding. Each teacher candidate recorded three lessons using the video-enabled professional learning platform IRIS Connect and engaged in three video-stimulated mentoring conversations. The data consists of teacher candidates' self-recorded videos (N= 592 minutes) and screen captures of the following mentoring conversations (N=354 minutes).

To investigate the characteristics of teacher candidates' enactment of scaffolding techniques, we coded the videos deductively using qualitative codes derived from the domain instructional scaffolding in the Protocol for Language Arts Teaching Observation [PLATO]; Grossman, 2015). Originally, PLATO stipulates to rate 15-minute segments on a 4-point scale, but recent research has argued that sequencing lessons may produce biases due to lack of context sensitiveness to different activity systems and instructional patterns (Luoto, Klette & Blikstad-Balas, in review). Thus, we drew on PLATO's conceptualization and operationalization of strategy instruction, modeling, and feedback and identified a set of deductive codes which we applied to every episode of strategy instruction, modeling, or feedback in the data set.

To investigate patterns in teacher candidates' reasoning, we used an inductive data analysis strategy developed by Horn (2007). Our unit of analysis was "episodes of pedagogical reasoning" (Horn, 2007); units of talk between teacher candidates and mentors in which teacher candidates describe issues in or raise questions about scaffolding techniques that are accompanied by some elaboration of reasons, explanations, or justifications.

## Preliminary findings

Preliminary analyses indicate that four of the six teacher candidates accounted for most of the explicit and nuanced strategy instruction and modeling. These teacher candidates typically decomposed models for writing literary or rhetorical analysis, introduced and modeled reading- and writing strategies, and provided specific and substantial feedback on students' writing. Their reasoning indicates that they came across several didactical dilemmas when enacting and later discussing the scaffolding techniques, such as structure vs ownership and dialogue vs. specific feedback. They also noticed that some low-performing students did not use the scaffolds and that some high-performing students were limited by the scaffolds.

The other two teacher candidates also had many instances of high-quality feedback, but did not decompose models nor introduce strategies as explicitly as the other four. Their reasoning indicates that they were concerned about decreasing the intellectual challenge when using models and that they struggled to identify appropriate strategies for their students in the last year of upper secondary school. As their students were already familiar with the generic strategies they provided (i.e., free-writing), the teacher candidates did not find it necessary to introduce them explicitly.

Overall, our preliminary findings indicate that the use of video created opportunities to reason around didactical dilemmas related to scaffolding techniques, which in turn helped the candidates adapt their use of scaffolding techniques to the purpose of the lesson and the individual needs of students. They also imply that the coursework intervention should put a stronger emphasis on discipline-specific scaffolds for older and/or high-performing students.

### **Theoretical and educational significance**

This study adds to previous research on the impact of coursework interventions and video viewing in teacher education (Borko, Koellner, Jacobs, & Seago, 2010; Sun & van Es, 2015) by investigating the impact on teacher candidates' *teaching practice* during fieldwork. Contrary to concerns raised by various scholars (Kennedy, 2016; Philips, et. al., 2019; Zeichner, 2012), our study suggests that foregrounding specific teaching practices provides opportunities to discover didactical dilemmas that foster pedagogical judgment and reasoning. In that vein, we argue that we are seeking is not "uptake" of teaching practices, but rather "critical uptake" (Kavanagh & Rainey, 2017). Finally, this study contributes methodologically by using PLATO in qualitative coding and by enabling teacher candidates to film their own teaching.

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