

## Background and rationale

There is increasing recognition that teachers' learning should be understood not as participation in isolated professional development activities, but as an ongoing, situated, and socially mediated process embedded in practice (Webster-Wright, 2009, 2010). Such a learning-oriented perspective is particularly relevant in times of educational change, where teachers are expected to adapt their practice in complex and evolving contexts. One approach that has gained attention for supporting practice-based professional learning is video-based reflection, as video enables teachers to revisit authentic teaching situations and engage in collaborative inquiry grounded in their own practice (Sherin & van Es, 2009).

Reflection is often described as central to professional learning because it can challenge habitual assumptions and taken-for-granted practices (Dewey, 1991; Fook, 2009). At the same time, reflective processes may involve discomfort when teachers are confronted with discrepancies between how they understand their practice and what becomes visible through closer examination (Kelchtermans, 2005). Video can intensify such experiences, but when used in structured and dialogic ways, it may support teachers in moving beyond surface-level impressions toward deeper, learning-oriented interpretations of classroom interaction (Gaudin & Chaliès, 2015).

This study draws on the concept of **professional vision** (Goodwin, 1994), understood as a socially developed capacity to notice and interpret what is pedagogically significant. Developing professional vision involves learning not only *what* to notice in practice, but also *how* to interpret what is seen in relation to student learning.

## Aim and research questions

The aim of this study is to investigate how video-based reflection can nurture teachers' professional learning and the development of professional vision over time in an authentic work setting. The study is guided by the following research questions:

**RQ1:** How do teachers perceive observing and reflecting on their teaching during a professional development process?

**RQ2:** What do teachers perceive to be key factors for successfully using video as a tool for reflection and professional learning?

## Context and data

The study is based on data collected in 2022–2023 in a Norwegian Newton Room, an out-of-school STEM learning environment where teachers collaborate to design and enact full-day teaching units. The focal case involves two Newton teachers who co-developed and taught a full-day unit that was video recorded.

The empirical material consists of three rounds of video-stimulated recall interviews (VSRIs) conducted over approximately 11 months, and a retrospective semi-structured interview (SSI) conducted one year after the project ended. Video excerpts were selected collaboratively with the teachers and used as prompts for reflection. The researchers adopted a facilitative, non-evaluative role, supporting teachers' reflections through follow-up questions rather than instructional feedback.

## Analytical approach

All interviews were transcribed and analyzed inductively. The analysis was sensitive to the chronological sequence of the interviews, inspired by a narrative approach that emphasizes development over time. This resulted in five themes capturing shifts in teachers' reflections and emotional orientations: excitement, excuses, doubt, reconciliation, and retrospective reflection.

## Findings

Initially, the teachers expressed strong motivation and confidence in the teaching unit they had developed (**excitement**). However, during the first VSRI, watching themselves on video evoked discomfort and defensiveness. Teachers offered explanations and justifications for what was observed and questioned the representativeness of the video excerpts (excuses).

Following instructional changes, the second VSRI was marked by frustration and self-doubt. Teachers felt that their efforts did not lead to the improvements they expected to see and considered discontinuing participation (doubt). Despite this, they also described the process as meaningful, suggesting that discomfort was intertwined with learning.

After more substantial redesign of the teaching unit, the third VSRI marked a shift in teachers' reflections (reconciliation). Rather than focusing on justifying instructional choices, teachers increasingly oriented toward student learning and began questioning their own criteria for noticing. They asked what they were actually looking for in the videos, indicating a developing professional vision.

In the retrospective interview, teachers emphasized three key factors for successful video-based reflection: active participation in an authentic process, external facilitation that supported inquiry without evaluation, and collaboration with a trusted colleague. They also reported continued use of video-based reflection practices beyond the research project, suggesting sustained professional learning (retrospective reflection).

## Contribution and implications

This study contributes insight into how video-based reflection can support teachers' professional learning as a temporal and emotionally demanding process. The findings show that professional learning may involve defensiveness and crisis before teachers reorient toward student learning and revise assumptions about teaching practice. Video-based reflection appears most productive when embedded in authentic settings, sustained over time, and supported by facilitation that balances trust with critical distance. These findings are relevant for designing professional learning initiatives in both traditional and non-traditional educational contexts.

## References

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