

Title: Teachers' Professional Learning: A Focus on Reflective Practice and Collaboration in Authentic Environments

Abstract

The current study explores implications for teachers' professional development, advocating for continuous learning in authentic settings, shifting the focus from traditional professional development to teachers' learning. By using video recordings in collaborative environments, we try to foster reflective practices and facilitate pedagogical refinement. In this study considerations about teaching roles, collaboration dynamics, verbal communication, and task design emerge as crucial topics. The lesson study approach employed guides teachers through a transformative process, transitioning from initial surprise and frustration to curiosity and appreciation for video-based reflections. By acknowledging the significance of authentic learning environments and innovative methodologies like video-based reflections and lesson study, the study may offer insights for educators, policymakers, and researchers seeking to enhance teaching and learning practices in today's ever-evolving educational landscape.

Keywords

Professional development, authentic professional learning, reflection, lesson study

Extended summary

In an ever ever-evolving landscape of education ongoing professional development of teachers is thought to be essential for high-quality education. To navigate the complex challenges of teaching and adapt to the changing educational landscape teachers must continuously refine their pedagogical practices and engage in reflective processes that foster growth and improve professional practice. To improve practice teachers need to collaborate, but collaboration in itself does not necessarily lead to improvement of practice (Horn & Little, 2010).

In her meta-analysis of research on professional development Webster-Wright (2009) criticizes how the concept of professional development is defined in research and proposes that instead of focusing on teachers' professional *development*, we must focus on teachers' *learning*. Furthermore, she states that many development processes are decontextualized and takes place outside the classroom. This creates challenges for teachers when they try to transfer knowledge to their daily practice. Instead, Webster-Wright (2009) promotes learning that takes place in authentic environments and a community that supports learning processes, what she defines as authentic professional learning (Webster-Wright, 2010)

The current paper uses video recordings of lessons to support teachers' professional learning in an authentic work environment. The aim is to investigate how and what teachers reflect about, and how their reflections develop and result in changes being made. The context is a so-called Newton room (a learning arena with state-of-the art equipment for STEM teaching) where two teachers cooperate to develop a Mathematics lesson, using a lesson study inspired approach (Munthe, Helgevold og Bjuland, 2015). The teachers plan and teach the lessons while researchers video the activity, with a particular focus on tasks where students

work in groups with problem-solving tasks. Teachers and researchers then watch video excerpts from the lesson to stimulate the teachers' reflections about what is happening during group work, and how the tasks might be adapted to further stimulate students' learning. This process was repeated three times, with teachers refining the lesson plan in between each round of teaching.

The study used a qualitative approach with audio recordings from teachers' talk while watching the videos, reflections and discussions about possible changes in the module as data. Data were analysed using thematic analysis which allows for flexibility and can "provide a rich and detailed, yet complex, account of data" (Braun & Clarke, Citation2006, p. 78). Through the analysis we moved back and forth in an analysis process giving names to codes and themes. The findings are structured according to the themes that emerged during the process. It is important to note that the final themes presented here are not final and the analysis is still ongoing at this time. Therefore, the findings are preliminary findings and not to be considered as final results.

Preliminary Findings indicate that when shown video excerpts from the teaching the teachers reflected on several things, including:

- Learning materials: The teachers decide making less use of learning materials due to observations that suggest learning materials seem to reduce discussion between students.
- Role as teacher: the teachers focus on their role to assist the students' learning process. While the teachers prior to watching the videos had a notion of doing a good job of assisting the students' learning, they changed their minds during watching the excerpts. They could observe that the students misinterpreted the teachers' instructions, and in some cases there was so much teacher assistance that students were unable to work independently of teachers' guidance.
- Collaboration: Teachers reflected about how group size affected collaboration, and also about whether students actually had the skills needed to cooperate.
- Verbal communication: The teachers noticed that the students did not use the Mathematical words and concepts they expected them to use.
- Design of tasks: Teachers reflected whether the group tasks actually. Required students to collaborate or if they could solve the tasks through division of labour.

Through the lesson study approach the teachers went through a process of different stages. When first presented with the video observations the teachers were surprised. Their notions of what went on in the lesson did not align with the video recordings. This led to a stage of frustration and lack of motivation. External factors were focused as explanations to why the lesson did not work out as intended. Then came a reconciliation phase, or a turning point, when the teachers became more curious about what they could observe in the videos, and eventually found the process of lesson study to be useful for their professional learning.

Our research have implications for teachers' professional development by advocating for continuous learning in authentic settings. By shifting focus from traditional professional development to teachers' learning our study aligns with Webster-Wright (2009) who highlights the importance of contextually relevant learning. Use of video recordings in

collaborative environments can foster reflective practices and facilitate refinement of pedagogical practices. Essential considerations such as effective teaching roles, collaboration dynamics, verbal communication, and task design emerge as crucial for further enhancing student learning. The lesson study approach employed guides teachers through a transformative process, transitioning from initial surprise and frustration to curiosity and appreciation for video-based reflections. By acknowledging the significance of authentic learning environments and innovative methodologies like video-based reflections and lesson study, the study offers interesting insights for educators, policymakers, and researchers seeking to enhance teaching and learning practices in today's ever-evolving educational landscape.

Literature

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