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Facilitators' practices and situative goals in conducting PD courses on language-responsive mathematics teaching

0. An introductory snapshot from a PD session

At the beginning of a professional development (PD) course on language-responsive mathematics teaching**,** the facilitator Fred briefly informs about empirical findings on connections between language proficiency and mathematics achievement. During his input, a participating teacher interrupts him with the following contribution:

"Some students in math classrooms are actually only interested in how to calculate that. They learn a procedure by heart, that was it. […] And what I actually demand from my students is that they explain why they calculate in this way. That they provide a context of justification to me. […]".

This insightful contribution is in line with the goal of the PD course to distinguish two discourse practices, "reporting procedures" and "explaining the meaning". However, according to Fred's plan, the distinction is introduced in a later activity. Fred reacts to the participants' statement:

"Great, […] the study confirms what you already do in class. To emphasize that we also have to talk about mathematics. We have to, because it fosters the understanding of mathematics."

Fred decided to acknowledge the contribution and reduce its complexity. In order to capture the background of his facilitation decisions, it is apparently not sufficient to identify the facilitation moves applied on the surface. In contrast, the underlying facilitation practices can only be characterized by a deeper reconstruction of the underlying goals, categories and orientations. The introductory episode serves for us as an example for this paper in which we lift the model of content-related *teacher* expertise (Prediger 2019 based on Bromme 1992) to a model of content-related *facilitator* expertise. The model allows to disentangle typical practices of PD facilitators for dealing with teachers' contributions.

1. Theoretical framework for conceptualizing PD facilitators' expertise and facilitation practices

PD facilitators attract an increasing research interest due to their crucial role for the success of PD courses (e. g. Borko et al., 2014). However, there are still research gaps with regard to conceptualizing facilitator expertise, especially with respect to specific PD and facilitation contents (Prediger, Rösken-Winter & Leuders, submitted).

For contributing to filling this research gap, we lift a model from teachers to facilitators: In the model of content-related *teacher* expertise, professional expertise of teachers is conceptualized starting from typical situational demands (*jobs*) and the teachers' recurrent patterns of behavior (*practices*) for coping with these demands. In turn, the recurrent patterns of behavior are constituted by the applied pedagogical tools, the underlying categories and content-related orientations. We explain these components while transferring them to the expertise of *facilitators*:

- Jobs are defined as typical, often complex situational demands during the PD course, which the facilitators have to cope with in order to be able to achieve the overarching aims of the PD course.

- Practices are defined as recurrent patterns of facilitation behavior for coping with certain jobs during PD courses.

- Pedagogical tools are concretely applicable tools to cope with the jobs in PD courses (e.g. didactical artifacts, facilitation moves or task formats).

- Categories filter and focus the categorial perception and the thinking of the facilitators, they usually stem from content knowledge on the PD content, pedagogical content knowledge on the PD level (e. g. knowledge about typical professionalization processes on the specific PD content) as well as from the generic pedagogical knowledge.

- Orientations refer to content-related and more general beliefs that implicitly or explicitly guide the facilitators' perception and prioritization of jobs (e. g. beliefs about the PD content or teachers' learning processes).

- In this article, we add to the model the situative goals from Schoenfeld's framework (2010). These goals can be of atmospheric nature (in brief, atmospheric goals), can address process qualities (e.g. cognitive activation, in brief, process goals) and directly refer to PD content learning goals (in brief, PD learning goals).

As the empirical part will illustrate, different practices can rely on the same pedagogical tools, but differ in the underlying orientations and categories when being based on different *situative goals* the facilitators aim at in the respective situation.

2. Methodological Framework

Data corpus. The presented episode belongs to a video data corpus from PD courses on language-responsive math teaching. The videotaped PD courses usually take four hours and are each conducted by two facilitators.

Qualitative data analysis. The data analysis is conducted by qualitative reconstruction along the described model of content-related expertise. The introductory episode is analyzed with respect to the following question: How can typical practices of facilitators be characterized when coping with the job "adequately dealing with participants' contributions", which underlying categories, orientations and situative goals can be identified?

3. First results of the analysis

In the presented episode, the facilitator Fred is confronted with the job of adequately dealing with a teacher's contribution who already addresses a key PD course content (explaining meanings versus reporting procedures as distinct discourse practices) in the first minutes of the PD course, which is foreseen much later in the afternoon.

At the surface level, Fred's answer can be analyzed with respect to the concretely applied *pedagogical tools,* here three facilitation moves (from González, Deal, & Skultety, 2016): (1) Fred confirms the statement of the teacher ("great": move of validating participant ideas), (2) he links the participants' individual experience to the empirical findings ("the study confirms what you already do in class": move of connecting ideas) and (3) reduces the core of the statement (the distinction of discourse practices) to the relevance of talking about mathematics in general ("we must also talk about mathematics": can be classified as move of redirecting).

Beyond this, Fred's facilitation practice is based on non-explicit categories (e.g. "explaining meanings vs. reporting ways of calculation") and orientations at the classroom level (e.g. "pushing instead of reducing language") and at the teacher PD level (e.g. "always including participants' statements in an appreciating way"). In order to grasp the background of why he reduced the core of the statement and tried to redirect the conversation back to the planned topic (empirical studies on the relationship of language competences and mathematics performance), it is also analytically necessary to consider goals which are probably relevant for him within the situation. The episode permits two interpretations of the situation which are linked to different *situative goals* and thus constitute two *practices*:

- *Missing the point of uptaking a participant's content-related key idea* due to the facilitators' focus on the process-oriented situative goal of sticking to the plan of the PD course and continuing the input on connections between language proficiency and mathematics achievement.

- *Deliberate holding back of participant's content-related key idea* due to the facilitators' learning goal-oriented situative goal, namely avoiding an

anticipation of central learning goals and thus a possible overload of other teachers.

4. Conclusion and outlook

The brief insight into the qualitative analysis of facilitators' practices illustrates that the use of certain pedagogical tools alone is probably not decisive for the success of a PD course. In contrast, reconstructed facilitation practices seem to be more complex due to underlying orientations, categories and in particular situative goals. The fact that both interpretations of the background of the facilitators' decisions are equally plausible indicates that the videotaped PD session alone might not be sufficient for understanding the facilitators' practices. Although the concrete situation could be uniquely interpreted when taking into account additionally videotaped post-PD reflection sessions, this article only presents the two alternative interpretations as both practices occur in other parts of the data and are relevant to discuss with facilitators in facilitator preparation program.

In the future research, further typical facilitation practices and interpretations for various jobs of facilitators must be identified in order to contribute to sharpening the model of content-related expertise for facilitators. The situative goals will be included in the model of expertise as a permanent component.

References

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