Promoting teacher candidates’ awareness for teaching dilemmas: A field experiment

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Abstract: Teachers need to learn that not all aspects of good teaching can be maximized at once. 32 teacher candidates planned and reflected on a lesson in regard to four dilemmatic aspects of teaching. Either they received dilemmatic aspects related to each other by a coordinate system or isolated without relation. Relational planning and reflection reduced simplistic conceptions about demands in teaching and increased awareness for dilemmatic demands, suggesting ways to foster awareness for teaching dilemmas.

Dilemmas in teaching
Can teachers “force” students to be motivated? Can they teach abstract principles by concrete examples? Can they adapt instruction to students’ individual needs and treat them equally at the same time? A number of researchers have pointed out that there are several aspects in teaching that are at conflict with each other (e.g. Lampert, 1985; Berlak & Berlak, 1981; Windschitl, 2002), and that teachers need to continuously decide between equally desirable goals, even though deciding for one goal reduces the possibility of reaching another goal. For example, it is impossible to allow for a maximum of self-regulated learning in a learning environment that is at the same time maximally structured.

Teacher candidates have been shown to have difficulties to recognize the dilemmatic nature of demands in teaching and to deal with them appropriately (e.g. Schoen, 2005; Levin, 2002; Harrington, 1995). In order to support teacher candidates in handling dilemmatic demands, we developed a planning and reflection tool, in which goals have to be specified within a coordinate system displaying two poles of a dilemma and thus highlighting the interrelation between two dilemmatic aspects. We expected teacher candidates who used the two-dimensional coordinate system a) to plan more realistically (i.e. not trying to maximize both aspects at the same time) and b) to become more sensitive towards the dilemmatic nature of teaching, as compared to a control group of teacher candidates who planned and reflected on the same dimensions separately.

Methods
A total of 32 teacher candidates in their first year were asked to plan and reflect on a lesson in regard to four dilemmas of teaching. Participants of the relational condition (N=16) received a planning and reflection guideline in which the conflicting dimensions were displayed in coordinate fields. Participants of the isolated condition (N=16) received the same dimensions without references to the interdependence of the dimensions. The following aspects were addressed in the guideline:
1. Dilemma of self-regulation: ‘fostering self-regulation’ vs. ‘structuring the learning process’
2. Heterogeneity dilemma: ‘individualized teaching’ vs. ‘reaching common goals’
3. Dilemma of professional relationship: ‘authority’ vs. ‘proximity to students’
4. Dilemma of didactic structure: ‘problem-centred approach’ vs. ‘systematic approach’

After conducting the lesson, participants were asked to indicate how they judged their lesson in regard to these dimensions. Both groups were then given prompts to reflect on what consequences they would draw from the lesson and to reflect on supporting and hindering factors. After this reflection we assessed a) sensitivity to the dilemmatic nature of teaching (measured by a rating of the perceived difficulties of several aspects of teaching), b) conceptions of demands in teaching (measured by a questionnaire consisting of the scales ‘simple demands’, ‘subjective demands’, ‘complex demands’, and ‘contradicting demands’), c) subjective learning outcomes (measured by a questionnaire).

Results
We found evidence indicating a raised awareness for the dependence of dilemmatic dimensions in the relational condition: Participants in the relational condition were less likely to plan both aspects of the dilemmas at a maximum. They only planned on average in 0.50 (SD=0.65), while participants in the isolated condition planned on average in 1.44 (SD=1.09) out of four dilemmas both aspects at a maximum. After conducting the lesson, participants in the relational condition indicated in 0.50 (SD=0.76) and in the isolated condition in 1.31 (SD=1.40) of the dilemmas that they had fulfilled both aspects at a maximum. A mixed repeated measures analysis of variance with the number of not dilemma-sensitive plannings vs. number of not dilemma-sensitive judgment as a within-factor and experimental condition as a between-factor (F(1,28) = 6.34, p = .018, η²=0.185) showed a significant main effect of the experimental condition. Also, we correlated scores of contradicting
dimensions of each dilemma. Correlations between the dimensions were negative, and the correlations were significantly higher in the relational condition than in the isolated condition, indicating that participants in the relational condition were prompted to think about contradicting dimensions in relation to each other.

Also, we found evidence for a raised awareness for the dilemmatic nature of teaching in general: Participants in the relational condition rated dilemma-related difficulties as more challenging than technical difficulties, whereas the participants in the isolated condition rated technical difficulties higher than dilemma-related difficulties (see Fig. 1). A mixed repeated measures analysis of variance with the ratings on technical difficulties vs. dilemma related difficulties as a within-factor and experimental condition as a between-factor showed a significant interaction effect ($F(1, 30) = 12,11; p = .002; \eta^2 = .288$).

There were no significant differences between the conditions in regard to the questionnaire on conceptions of the demands in teaching, as well as in regard to perceived learning outcomes. However, a hierarchical regression analysis showed that those in the relational planning condition, who perceived a large learning outcome, stated to a lesser extent that demands in teaching were simple and clear (see Fig. 2). No effects were found in regard to the other scales (subjective demands, complex demands and contradicting demands).

**Conclusion and Discussion**

We found evidence that planning and reflection of dilemmatic aspects in a coordinate system raised awareness a) for the problem that the two sides of a teaching dilemma cannot be maximized at the same time and b) for difficulties stemming from dilemmatic demands. The effect of this kind of relational planning and reflection was mainly found in regard to measures indicating ideas of simplicity in teaching, suggesting that relational planning and reflection helps to reduce overly simplified ideas of teaching. The reduction of simplistic ideas on demands in teaching is one major prerequisite to deal reflectively with contradicting demands. Therefore, we propose that planning and reflection guidelines for teacher candidates should include prompts that help teacher candidates to think actively about contradicting aspects of teaching in relation to each other. This might be a small, but helpful intervention.

**References**


