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How systematic video reflection in teacher professional development regarding classroom discourse contributes to teacher and student self-efficacy

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ABSTRACT

Recent professional development programs have enhanced teachers' ability to change their classroom discourse behaviour to a more dialogic style. Only a few programs investigate the role of video-based reflections in supporting teachers to change their practice. This study focuses on effects of the 'Dialogic Video Cycle' (DVC) on teacher self-efficacy as a prominent factor in teaching behavior. Additionally, changes in teachers' practice and the impact of the DVC on student self-efficacy were examined. Compared with a non-video reflection group, the video reflection group showed a positive trend in teacher self-efficacy and significant effects on practice changes. In the video reflection group, student self-efficacy also showed a positive trend. Video transcripts from the DVC workshops underline the role of teachers' self-beliefs.

1. Introduction

Purposeful classroom discourse is a relevant characteristic of successful teaching and learning in the 21st century (Gallimore, Hiebert, & Ermeling, 2014). Verbal teacher–student interactions, especially whole-group discussions, however, are often characterized by tight communication structures expressed through narrowly focused teacher questions and short keyword student answers (Gillies, 2014; Jurik, Gröschner, & Seidel, 2013; Osborne, Simon, Christodoulou, Howell-Richardson, & Richardson, 2013). In previous studies, negative effects from this so-called Initiation–Response–Evaluation (IRE) pattern (Mehan, 1979) have been found on student learning, particularly in whole-class discussion (Lipowsky et al., 2009; Seidel & Prenzel, 2006). For that reason, in the last decade teacher professional development (TPD) programs have been designed to provide teachers with innovative teaching strategies to change their classroom practice toward a more dialogic teaching style (Alexander, 2005; Howe & Abedin, 2013) and have been shown to positively affect student learning (Kiemer, Gröschner, Pehmer, & Seidel, 2015; Resnick et al., 2015). Based on Burbules (1993), 'dialogic' means a continuous communication exchange between a teacher and students that aims, among other things, to optimize the IRE pattern toward mutual understanding and greater student contribution. TPD programs such as 'Accountable Talk' (Michaels, O'Connor, & Resnick, 2008; O'Connor, Michaels, Chapin, & Harbaugh, 2017); 'CamTalk' (Higham, Brindley, & van de Pol, 2014) and the 'Dialogic Video Cycle' (Gröschner, Seidel, Kiemer, & Pehmer, 2015) focus on classroom-related interventions and facilitate teachers by offering pedagogical content ('talk formats' and 'talk moves'; Michaels & O'Connor, 2012) that has the potential

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to change everyday teaching (see also Wilkinson, Reznitskaya, Bourdage, & Nelson, 2017). This change in pedagogical talk appears to be especially challenging for ‘classroom discourse’; as verbal teacher–student interactions are very much routinized by instructional patterns and ‘choreographies of teaching’ (Oser & Baeriswyl, 2001). Furthermore, research has shown that teachers’ instructional beliefs influence teacher–student interactions (Mameli & Molinari, 2017). For this reason, it has been requested that TPD programs on classroom discourse address teachers’ beliefs and instructional behaviour in practice (Desimone, 2009; Kissling, 2014).

In previous studies—surprisingly not in the field of classroom discourse—the role of teacher self-efficacy has been investigated to measure teachers’ beliefs about instructional practice (Kleinsasser, 2014; Zee & Koomen, 2016). Self-efficacy is acknowledged as an important factor in explaining intentional and purposive human behavior (Bandura, 1977; van Dinther, Dochy, & Segers, 2011). In the context of the present study, teacher self-efficacy is regarded as a judgement of teachers’ ‘capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated’ (Tschannen-Moran and Woolfolk Hoy, 2001, p. 783).

A large body of teacher research has shown that successful TPD programs rely on several key features, such as active learning, collective participation, duration, coherence and content focus (Desimone, 2009; Wilson, 2013). Recent studies have especially emphasized video-based reflection as a tool to actively exchange information on teaching and change classroom practice (Borko, Jacobs, Eiteljorg, & Pittman, 2008; Gaudin & Chaliès, 2015; van Es, Tunney, Seago, & Goldsmith, 2015). To date, however, TPD programs have rarely addressed how systematic video reflection as an element of TPD contributes to teacher self-efficacy.

In the present study, we investigated how a video-based TPD program, the ‘Dialogic Video Cycle’ (DVC; Gröschner et al., 2015), might affect teacher self-efficacy. From a sociocultural perspective, the aim of the DVC is to engage teachers actively in a ‘community of learners’ (van Es, 2012) to facilitate successful teacher learning about the importance of student engagement and teachers’ role in purposeful classroom discourse. We assumed that, if teachers perceived themselves to be successful learners regarding classroom discourse within the TPD, this experience would also affect their self-efficacy and the ‘classroom environment’ (Zee and Koomen, 2016, p. 985) represented in the teaching practice of classroom discourse. Following Schunk and Pajares (2002), who stated that ‘supportive learning environments’ (p. 50) should have positive effects on teacher *and* student self-efficacy, the study expands the ‘efficacy chain’ of TPD (Desimone, 2009) by investigating changes in teaching practice related to the TPD focus on classroom discourse and student self-efficacy. Previous studies on the effectiveness of the DVC over one school year provide support that the DVC positively affects student motivation (Kiemer et al., 2015) and higher-order learning (Pehmer, Gröschner, & Seidel, 2015), as well as teacher satisfaction (Gröschner et al., 2015). To date, effects of the DVC on teacher and student self-efficacy have not been investigated.

To examine possible effects of the DVC on teaching practice, including teacher and student self-efficacy, in this study we compared the DVC video reflection group with a non-DVC comparison group (non-video group). To illustrate the quantitative and qualitative findings from video observations, teacher exchanges on purposeful classroom discourse in the DVC were transcribed and qualitative excerpts from the video reflection TPD workshops are reported. The framework of the study as well as the research questions are listed in Section 1.4.

1.1. Research on teacher and student self-efficacy

‘Self-efficacy’ is conceptualized as a belief in one’s capabilities to organize and execute the courses of action required to achieve certain performance outcomes (Bandura, 1977, 1997; Pietsch, Walker, & Chapman, 2003). Zee and Koomen (2016) have emphasized that many studies ‘imply that teachers with an assured sense of self-efficacy set the tone for a high-quality classroom environment’ (p. 981). In their review, they detailed how, from the beginning, research on ‘locus control’ in the 1960s (Rotter, 1966) and ‘social cognitive theory’ in the 1970s (Bandura, 1977) has been interested in investigating the effects of ‘person–environment transactions’ (Zee & Koomen, 2016) and how individuals interpret them. This means that self-efficacy beliefs ‘help persons decide which courses of action they ought to pursue and whether to persist in the face of environmental adversities’. Moreover, ‘they determine how persons interpret their thoughts, actions, and emotions in given situations’ (p. 984). Thus, teachers’ self-efficacy beliefs influence their instructional behavior (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Holzberger, Philipp, & Kunter (2013) found not only that teacher self-efficacy is related to instructional behavior but also—conversely—that instructional quality affects teacher self-efficacy. This relationship is described by the ‘triadic reciprocal causality’ (Bandura, 1986) of the classroom environment, a teacher’s behavior and his or her cognitions. In general, sources of self-efficacy are verbal persuasion (others input), vicarious experience (observing another person perform successfully) and personal mastery experiences (Tschannen-Moran & McMaster, 2009). With regard to the intervention in the present study, we assumed that all these aspects would be particularly addressed in the DVC (see also Section 2.2). In an experimental study, Tschannen-Moran and McMaster (2009) found a general increase in teacher self-efficacy regardless of which treatment group teachers were in (treatment 1: information; treatment 2: information + modeling; treatment 3: information + modeling + practice; treatment 4: information + modeling + practice + coaching). A limitation of the study was that the treatment assumed to have the largest effect (treatment 4), was very short (5 h. 45 min). As a consequence, teachers’ active engagement and change in self-efficacy were limited. In the current study, we expand the research field by investigating how teacher discussion and systematic video reflection in a long-term TPD program (described in the next section) translate into a change in teaching practice that might have an effect on self-efficacy.

1.2. Video reflection and key components of teacher professional development

Research on teacher professional development has identified several key features that promote teacher learning (Desimone,

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