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## Teacher professional learning and collaboration in secondary schools

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## **Chapter 6:**

### **General Conclusions and Discussion**

School-based teacher collaboration is widely acknowledged as a promising route for teacher professional learning (TPL). In collaboration, teachers can, for example, share teaching experiences, provide peer feedback and support, critically reflect on teaching, and experiment with innovative teaching methods (Kelchtermans, 2006; Vangrieken et al., 2015). Research has shown that teacher collaboration supports not only teachers' professional development and teaching quality (e.g. Levine & Marcus, 2010; Opfer & Pedder, 2011), but also the collective change capacity of schools (Achinstein, 2002; Schaap et al., 2018) and ultimately student learning (Lomos et al., 2011). Research on school-based teacher collaboration focuses either on the learning potential of different collaborative learning activities or on how teachers collaborate, given their individual characteristics and school context. With regard to the first focus, research highlights characteristics of collaborative learning activities that are associated with TPL, including 1) a strong link to teaching practice (e.g. Meirink et al., 2010); 2) inquiry aspects such as experimenting with teaching (e.g. Slavit and Nelson, 2010), and; 3) a link to future teaching (Horn et al., 2017). With regard to the second focus, research points to the importance of teachers' feelings of autonomy and self-efficacy (e.g. Schipper et al., 2020), positive beliefs about TPL and teacher collaboration (e.g. Tam, 2015b), and an informal school culture of trust, openness, and continuous improvement among teachers and school leaders (e.g. Hargreaves & O'Connor, 2017). This dissertation combines both foci because in order to fully understand what and how teachers learn, the interplay between individual teachers, learning activities, and school context should be considered (Opfer & Pedder, 2011). The aim of the research presented in this dissertation was to understand teachers' collaborative learning activities, factors enabling or constraining collaboration, changes in collaborative practices over time, and collaboration supporting TPL across school contexts.

The four studies presented in this dissertation were situated in secondary education and included teachers with varying levels of teaching experience. In Chapter 2, a systematic literature review (study 1) is presented with respect to the personal, group, process, guidance, organizational, and structural factors that influence school-based teacher collaboration. The influence of the school context on teacher collaboration and TPL was further investigated by means of a large-scale longitudinal questionnaire study (study 2), as described in Chapter 3. This study was conducted in the context of a Dutch government initiative in which 15 secondary schools participated. In Chapter 4 and 5 (study 3 and 4), two small-scale qualitative studies are described. These studies were aimed at understanding how teachers collaboratively learn throughout a one-year intervention, in terms of learning activities and dialogues, and what learning potential this collaboration holds. In this final chapter, the main findings and conclusions per study are presented, followed by a discussion of the research limitations, recommendations for future research and implications for practice.

data; and (5) factors that impact collaboration are mentioned in the results and/or conclusion. In total, 37 studies were selected, including 34 qualitative and three mixed-method studies. Based on the collaborative learning activities that are central to the 37 studies, three categories of teacher collaboration were distinguished: 1) sharing (n=19); 2) experimenting (n=15); and 3) designing (n=3).

The results of the literature review emphasized the influence of factors relating to the Process of working and learning together in teacher groups. Especially critically analyzing teaching and student learning and having a focus were frequently reported as influencing Process factor of teacher collaboration. A coherence between factors relating to the Process of working and learning together and factors relating to the Guidance that is available to teacher groups when collaborating was notable, as these factors were reported simultaneously in several studies. The availability of tools or facilitation presumably promotes the process of collaboration of teachers and vice versa. For example, groups that have a clear focus might adopt tools or facilitation that contribute to this focus.

The analysis of the selected studies also showed how the influence of various factors on teacher collaboration differs between the three categories of teacher collaboration. Within the category Sharing, the influence of Personal factors stood out. Personal factors concern teachers' attitude, beliefs, knowledge, skills, experience, and professional identity. In the category Sharing, teachers' conversations are informed by what individual teachers of the group bring up regarding teaching experiences, student learning, and instructional strategies. Possibly, what and how teachers share is especially dependent on teachers' personal characteristics because the teachers have no shared practice to build on in their conversations, in contrast to the categories Designing and Experimenting. For example, teachers' conversations are guided by teachers' knowledge of differentiated teaching and commitment to tackle challenges in their teaching practice. When teachers design or experiment with new or adapted forms of teaching, their conversations are less dependent on personal characteristics due to shared experiences of the teacher group. Teachers' collaboration is namely informed by their shared practice of designing and experimenting with teaching, and not solely teachers' individual experiences with teaching.

## 6.1 Findings and Conclusions per Chapter

### 6.1.1 Factors that Influence Teacher Collaboration

In *Chapter 2*, a systematic literature review is reported that investigated the influence of Personal (e.g. teacher beliefs), Group (e.g. group atmosphere), Process (e.g. inquiry-based working), Guidance (e.g. external facilitation), Organizational (e.g. school leadership), and Structural (e.g. time and space to meet) factors on teacher collaboration. Two databases (Web of Science and EBSCO Host) were examined to identify relevant peer-reviewed empirical research, using a search query referring to 'teacher', 'collaboration', 'learning', 'meeting', and 'secondary education'. Empirical studies were selected on the basis of the following inclusion criteria: (1) a minimum of three (student) teachers participated; (2) the collaboration should be aimed at TPL or professional development; (3) the collaboration between teachers should be (part of) the primary focus of the study; (4) the methods of the study include observation

The literature review also showed how similar factors could have a different impact on teacher collaboration. In most cases, the presence or absence of factors enabled or frustrated teacher collaboration, respectively. For example, supportive school leadership enabled teacher collaboration, and the absence of supportive school leadership frustrated teacher collaboration. However, this presence-absence interpretation could not be generalized to all factors. Namely, the empirical studies included in the review pointed to neutral factors, i.e. factors without a clear description of how it facilitated or hindered teacher collaboration. For example, the review pointed to the influence of teachers' beliefs on teachers' conversations, but insights into the way beliefs have an impact remained unknown. Other factors that may facilitate and hinder teacher collaboration are heterogeneity and having a focus in a group. Regarding heterogeneity, Vangrieken et al. (2015) report similar findings and explain how some heterogeneity in a group can be beneficial and how too much heterogeneity can impede collaboration. The literature review also made clear that factors work out differently due to the context-dependent nature of teacher collaboration and it can be assumed that teacher collaboration is influenced by the interaction between factors at the level of individual teachers, the teacher group, and the school. In one context, differences in, for example, teachers' expertise promoted teacher collaboration because teachers were enabled to move toward more thorough explanations of student learning (Kumar & Subramaniam, 2015). In another context, heterogeneity in teachers' expertise impeded teachers' engagement (Chandler-Olcott & Hinchman, 2015), which was possibly related to teachers' frequent absence and their unsupportive school culture.

### 6.1.2 Teachers' Perceptions of Their Schools Changing towards Professional Learning Communities

In the questionnaire study described in *Chapter 3*, the change in teacher perceptions of their school as PLC, and how PLC conditions (i.e. contextual indicators that are expected to enhance TPL and collaboration in school) predict PLC elements (i.e. indicators of TPL and collaboration) was investigated. A total of 2.111 teachers from 15 Dutch schools completed a questionnaire on

PLC elements and PLC conditions for three years. The 15 secondary schools that participated in this study were involved in a government initiative to support schools in their development as PLC. To this end, each school planned and implemented interventions during three school years, tailored to the needs of each school.

The analysis of the questionnaire data showed that teachers' perceptions of all PLC elements and PLC conditions significantly improved after year 1 but declined after year 2. Nevertheless, over the whole three-year period, teachers' perceptions of the PLC elements and the PLC conditions significantly improved. These findings imply that the schools succeeded in implementing initiatives aimed at teacher collaboration and learning to some extent. The results are in line with previous studies that conclude that schools' development towards a PLC is a slow process characterized by steps back and forth (Hargreaves & O'Connor, 2017; Hipp et al., 2008).

The results of the cross-sectional analyses showed that the PLC conditions relating to Shared support, Human resource management (HRM), and Communication significantly predicted PLC elements. These findings imply that besides innovative structures in school, the 'human experience' or interpersonal caring in terms of taking shared responsibility as reflected in Shared support, and appreciation of teachers' work as reflected in HRM are important affordances for schools as PLCs (Giles & Hargreaves, 2006; Mitchell & Sackney, 2006; Stoll & Kools, 2017). Formal forms of Leadership also significantly contributed to the prediction of various PLC elements, although to a more limited extent. The findings indicate that school leaders can have a direct impact on teachers' collaborative work and learning by, for example, showing enthusiasm for new ideas and projects and offering teachers time and space to put them into practice. However, adequate leadership support is not self-evident. Previous research showed how, in some contexts, collaboration is complicated due to teachers' mistrust of (top-down imposed) projects because of the hierarchical relationships between school management and teachers (Brodie, 2019; Hargreaves & O'Connor, 2017; Hipp et al., 2008). Surprisingly, the PLC conditions relating to Professional autonomy and Collegial support

in school did not, or both positively and negatively, predict the PLC elements. Similar to the univocal research findings on the impact of formal leadership in school, research evidence of the impact of teachers' sense of autonomy and collegial relationships on teacher TPL and collaboration is ambiguous. With respect to the latter, Kelchtermans (2006) illustrates how communities that are characterized by close collegial relationships might reflect a pleasant and informal culture, but also challenge or even hinder attempts to change by adhering to the state of affairs. Regarding teacher autonomy, Vangrieken et al. (2015) warn that high feelings of autonomy might lead to disengagement and isolation in school and thus limit teachers' engagement in (professional) collaboration. Yet, a sense of autonomy does not necessarily exclude a desire to collaborate. To this end, Vangrieken et al. (2017a) describe 'reflective autonomy' (Koestner & Losier, 1996), that represents teacher autonomy paired with a collaborative attitude.

To get more insight into the predictive value of the (time-varying) PLC conditions, longitudinal multilevel analyses were conducted, that indicated the importance of HRM in school. HRM had a significant direct and longitudinal effect on teachers' Co-design in schools throughout three years. Thus, HRM seems to hold the potential of enhancing teacher professional collaboration and learning in school. Not only can HRM provide teachers with organizational structures such as the required time and facilities to collaborate, inquire and learn (Admiraal et al., 2016; 2019). The study also stressed the importance of HRM in terms of reflection on teachers' work, by showing appreciation and addressing PLC elements in teacher portfolios and performance appraisals. However, the longitudinal direct effect of HRM on teachers' Co-design only related to teachers who initially reported (relatively) high levels of HRM. In other words, school improvement in terms of developing towards a PLC had no or little impact on teachers who, initially, perceived HRM as slightly or moderately present in their school. In line with the conclusions from Hargreaves and O'Connor (2017), the findings suggest that the success of short-term collaborative interventions depends on the existence of a collaborative culture in the school.

### 6.1.3 Different Learning Opportunities in School-based Teacher Collaboration

In *Chapter 4*, a multiple case study is described that investigated how teacher collaboration, as part of a short-term collaboration initiative on improving differentiated teaching, is related to the teacher characteristics and school context of the groups. In total, 20 teachers from five teacher groups (three schools) participated in the study. Six school-based group meetings were scheduled roughly once per month by the schools. Throughout the initiative, the teachers decided on their learning goals and way of working. The groups were given access to an online database and received expert input upon request. Before the start of the initiative, teachers completed questionnaires on their current and preferred differentiated teaching, previous experiences with TPL, and motivation to participate. After the meetings, the teachers completed a questionnaire on their participation in the group meetings. Furthermore, individual interviews were conducted after the meetings to investigate the group and school context of the teachers, how the teachers collaborated throughout the initiative, and what they learned from the collaborative meetings.

The analysis of the questionnaire and interview data indicated that teacher collaboration and learning worked out differently for teacher groups, even for teacher groups from the same school. Overall, it could be concluded that different forms of collaboration can have learning potential for teachers, depending on participating teachers' needs and school context. According to Horn et al. (2017), deeper level conversations into the *why* of teaching support learning opportunities for teachers, which is not necessarily the case for *what* and *how* conversations that dominate teachers' typical discourse in schools. The study showed that intensive forms of collaboration or deeper level conversations were not always accessible to teachers or do not always meet teachers' learning needs. Some groups benefited from thinking about various options for differentiated teaching, in relation to what they and others are already doing.

The variety in the groups' intensity of collaboration could be attributed to the prior collaborative experiences and teaching background of the groups, and to schools' vision and norms on teaching. At one school, differentiated teaching was



incorporated in the school's vision, teachers had joint teaching responsibilities, and norms of interaction were reflected by professional collaboration. Hence, the teachers had full insight into the subject matter of colleagues and experienced autonomy, in the sense that change is within their power. Furthermore, the groups from this school were used to collaborate on a regular basis and shared a need to develop teaching materials before the meetings. Altogether, this might explain why some groups engaged in intensive forms of collaboration (e.g. designing teaching) and 'why conversations' throughout the meetings, and follow-up was rather self-evident. At the two other schools, the groups engaged in less intensive forms of collaboration (e.g. sharing experiences) throughout the meetings. Teachers from the 'less intensive groups' questioned the feasibility of differentiation because they experienced a mismatch between the overall goal of the meetings and the teacher-centered education in their school. Furthermore, these groups were less familiar with collective lesson design before the meetings and did not teach the same school subjects which limited their shared focus. Thus, the study implied that teachers' school context, in terms of vision on teaching, teaching responsibilities, and culture of collaboration, has consequences for the type of collaborative activities that teachers engage in. In line with the findings from Chapter 3, the results showed how the course of newly implemented collaboration initiatives depended on existing school structures and cultures of collaboration (Hargreaves & O'Connor, 2017).

All in all, the different forms of collaboration supported teachers' reflection on teaching practice in all groups, which is important to promote innovation in schools (Lomos et al., 2011; Vangrieken et al., 2015; Ioannidou-Koutselini & Patsalidou, 2015). Interestingly, the three 'less intensive groups' differed in terms of teachers' perceptions of the learning potential of the meetings and their aspirations for follow-up. Whereas two groups were positive about the initiative and considered follow-up, one group was overall negative and did not aspire follow-up. In the interviews, the negative-orientated teachers pointed to the top-down implementation of the project by their school leader, which created some sense of reluctance. This reluctance was, however, not signaled in another group from the same school. The high level of external regulation

of the negatively oriented teachers, as measured prior to the meetings, presumably caused the group's false start. In sum, it can be concluded that TPL is hampered when teachers perceive teacher collaboration as a top-down implemented initiative and at the same time experience too much autonomy in terms of how to collaborate, which might also limit teachers' openness to future professionalization. Furthermore, when little (external) support is available, teachers rely heavily on the ability of the teacher group, because they have to innovate their practices from within the group. Consequently, in groups with teachers that are inexperienced collaborators and lack a supportive school environment, collaborative interventions have little chance to succeed.

#### 6.1.4 Connecting Teacher Dialogue to Teacher Learning

In the longitudinal, qualitative study discussed in Chapter 5, teachers' (self-perceived) learning outcomes and associated dialogues were investigated. In total, 21 teachers from four teacher groups (from three schools) participated in the study. Similar to the study reported in Chapter 4, teacher groups were included that participated in a year-long school-based collaboration initiative aimed at improving differentiated teaching. The teacher groups were supported by an external facilitator in designing, implementing, and observing differentiated teaching. After each meeting, the teachers reported on their learning outcomes in a log. The meetings were videotaped to analyze teachers' dialogic moves.

The analysis of the logs indicated that TPL was enhanced in all groups. Differences between the groups were noticeable in learning outcomes in terms of amount (i.e. the number of teachers that reported learning outcomes), consistency (i.e. relatedness to the group's focus), and stability (i.e. differences in amount and consistency between meetings). The smaller the amount of learning outcomes that the groups reported, the less consistency and stability the learning outcomes reflected. The dialogic moves were analyzed using video observations of fragments that were associated with the teachers' self-perceived learning outcomes. Overall, the composition of dialogic moves was similar between all groups. All groups engaged in Building, Supporting, Reasoning, Requesting, and Challenging, going from most to least often

occurring type of dialogic move. The groups differed in terms of frequency of dialogic moves between the teachers and how dialogic moves changed over time. Three 'interactive groups' with relatively many dialogic moves, and one group that showed a few dialogic moves, were identified. Regarding the type of dialogic move, the dialogues of the interactive groups intensified in terms of Challenging. The findings partly confirmed the assumption that Challenging in teacher groups directly affects the course of dialogue and moves teachers toward TPL. In only one interactive group, Challenging stimulated deep conversations between teachers. Furthermore, in the least interactive group, Challenging did not frequently occur, although they reported relatively many learning outcomes compared to the other teacher groups. The dialogues of this group intensified in the reflection phase in terms of more Supporting and Reasoning.

Based on the observations in the groups, two (interrelated) explanations for the group differences in terms of learning outcomes and associated dialogic moves were formulated. The first explanation related to teachers' collective participation in the collaboration. The findings suggested that without continuity in collaboration (e.g. teachers' absence or disengagement from learning activities), critical dialogue in the group about teaching and student learning has less impact on TPL. Based on findings from Levine and Marcus (2010), it is clear that inconsistent teacher participation limits the feedback loop in TPL. This study showed how interruptions in the feedback loop led to limited and fragmented TPL. The findings imply that even though a group is interactive, and teachers challenge each other in meetings, a lack of continuity and collectiveness throughout the overall process limits TPL. The second explanation related to the facilitation in the groups. The groups differed in their dependence on the external facilitator's support in organizing the meetings and stimulating teacher dialogue because in some groups, (informal) internal support was provided by teachers. In the least interactive group, the external facilitator had an active role in initiating conversations by asking open questions and engaging teachers in colleagues' discussions because the teachers were not eager to talk. Yet, the least interactive group reported relatively many learning outcomes, compared to the other groups. As described above, this could be

attributed to the collective participation of this group. It could be concluded that an important affordance of collective participation is the internal support provided by teachers themselves. For example, in the least interactive group one teacher took the responsibility of planning the meetings, sending reminders, and supporting colleagues in recording their lessons. Overall, it could be concluded that lesson experimentation and collegial observation benefits from, or even requires, facilitation (Goodyear & Casey, 2015; Sjoer & Meirink, 2016). Internal support provided by participating teachers can add to external facilitation and strengthens collective TPL in groups.

## 6.2 Limitations and Recommendations for Future Research

Certain limitations must be considered when interpreting the findings of this dissertation. These limitations particularly relate to the generalizability and validity of the research findings of the empirical studies in this dissertation (i.e. Chapters 3, 4, and 5).

The sample consisted of teachers who were involved in new collaborative initiatives in school with active involvement from external partners (Chapters 3 and 5), which limits the generalizability of the results. Although external support is assumed to facilitate TPL and collaboration, the findings of the studies that incorporated such forms of support might not be directly applicable to collaborative contexts that lack the availability of external support. The observation study (Chapter 5), however, pointed to the potential of internal facilitators of teacher collaboration to promote TPL. A future area of research, informative to the design of professional development for in-service and pre-service teachers, can be to further investigate teachers (informally) taking the lead in supporting teacher collaboration. It would be worthwhile to study how teacher leadership is enacted in teacher collaboration and how teachers' leadership potential can be strengthened. Social network analysis can be useful to typify teacher leaders in school, by having staff identify colleagues by whom they are supported and inspired. Other recommendations for future research on



teacher leadership relate to the ways in which teacher and school characteristics shape the enactment of teacher leadership. Some teachers might be better equipped to inform colleagues about innovative pedagogical approaches in collaboration than others, depending on their interests and teaching experiences. In terms of school context, interviews with school leaders can provide insight into their partnerships with informal leaders and how they make use of their qualities in relation to collaborative TPL in school.

The generalizability of the research findings across national borders is limited because teachers' access to individual and collective professional development and the division of responsibilities between management levels differs between countries (OECD, 2020; Stoll & Kools, 2017). In the Netherlands, schools are highly decentralized and autonomous on matters related to resource allocation, curriculum, and assessment (OECD, 2014). In terms of collaboration and TPL, lower secondary education teachers in the Netherlands, for example, are less likely to engage in team teaching and to observe colleagues and provide feedback than their international peers (OECD, 2020).

In terms of validity, it would be worthwhile to investigate school-level conditions by means of data triangulation. In the study reported in Chapter 4, for example, teachers mentioned the school leader's vision and the lack of facilities as hindering factors in their TPL. It is undebated that features of the school organization in terms of culture (e.g. leadership and collegiality) and structure (e.g. available time for professional development) matter for how teachers collaborate and learn in school (Giles & Hargreaves, 2006; Opfer & Pedder, 2011; Stoll & Kools, 2017). To have a more comprehensive understanding of how and under what conditions teacher collaboration stimulates TPL across school contexts, it is critical to consider the perspective of employers, employees, and even students that are not directly involved in the collaborative initiative themselves. In-depth longitudinal case studies into teacher collaboration (study 3 and 4) could be complemented with school-wide questionnaires (study 2) and school documents on schools' vision and mission on teaching and teacher professional development. A less intensive research approach is to interview newcomers in schools because they might provide a new perspective on the

school culture in terms of TPL and collaboration. Subsequently, colleagues could be invited for focus group interviews in which they reflect on the newcomers' perspectives. Another way to gain more insight into a school culture and structure is to conduct observations. Research on short-term collaborative interventions in school could be preceded by observations in schools, by researchers taking the role of 'passive participant' in teacher meetings throughout one semester or school year prior to the intervention.

To deepen our understanding of how teachers' conversations promote TPL, an investigation into the content of teacher dialogues is also recommended. In this dissertation, the focus was on how teachers collaborate in terms of learning activities and dialogues. To this end, different forms of learning activities (e.g. sharing experiences and designing teaching) and types of dialogues between teachers (e.g. requesting information or providing evidence) were distinguished. Additional research into the content of activities and dialogues (i.e. what is done or what is discussed) can help to further refine our findings on how teacher collaboration promotes TPL. According to Cook and Faulkner (2010), a focus on student learning in conversations is especially important for TPL. However, Slavit and Nelson (2010) show that teachers mostly engage in critical dialogue about their teaching, but much less in critical dialogue about their interpretations of students' thinking. Future research could investigate the relation between foci in conversations and associated TPL and how teachers can be supported in focusing on student learning.

### 6.3 Implications for Practice

The studies in this dissertation provide several recommendations for how to organize school-based teacher collaboration as a fruitful learning environment for teachers. The main implications for practice concern designing (sustainable) collaboration, paying attention to teacher characteristics (e.g. motivation and teaching experience) and school characteristics (e.g. collaborative structure and culture), and adapting the collaborative process to teachers' context through adequate facilitation.

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In terms of collaborative learning activities, this dissertation confirms previous findings on the learning potential that intensive forms of collaboration hold for teachers. Collective design, implementation, and observation of teaching provide teachers with the opportunity to critically reflect on teaching and make adaptations in their teaching practice to better support student learning. Moreover, by doing this together with colleagues, it can have an impact on schools' capacity to change and innovate teaching. However, teachers' participation in intensive learning activities should not become a goal in itself. In order to use collective design, implementation, and observation of teaching as a tool for TPL, teachers should be enabled to reflect on their teaching experiences by collectively exploring and analyzing vital aspects of teaching and student learning, possibly under the guidance of a facilitator. For teacher groups that are relatively new to professional collaboration, it is important to take small steps. Teachers may need (hands-on) support from an (external) facilitator to explore the meaning of teaching concepts that teachers perceive as difficult to implement in their daily practice and to get insight into their current teaching practices and subsequently possibilities for improvement. A possible route to TPL can include collective reflection on the teaching practice of others before teachers share observations of their own teaching practice (e.g. Borko et al., 2008). Regarding the conditions relevant to support teacher collaboration and TPL, the studies in this dissertation showed that the continuous commitment of teachers is essential. Teachers' presence in meetings and full engagement in learning activities were namely conditional to the continuity and collectiveness of their group's TPL. One way to achieve this is by paying attention to the motivation of teachers. Recognizing the diversity of teachers' learning goals by facilitators and school leaders supports teachers to continuously develop their teaching practice (Louws et al., 2018). Another way to foster teachers' interest is to focus on the collective exploration of didactical or pedagogical concepts, without imposing any demands on teachers to change immediately.

The research presented in this dissertation furthermore stresses the importance of prioritization by school management (e.g. providing time and space). To realize teacher collaboration, teachers are highly dependent on

organizational support in schools, such as flexible scheduling or co-teaching. School leaders can exert (indirect) influence through HRM policies in terms of flexible work scheduling, arranging rooms, and facilitating co-teaching. Besides organizational aspects, this dissertation also points to HRM in terms of interpersonal aspects. To support the sustainability of teacher collaboration in the long run, value appraisals are needed. Teacher collaboration can be made more relevant to teachers' daily work by expressing pride towards the collaborative work of teachers and addressing teachers' engagement in practices of professional collaboration in performance appraisals and teacher portfolios. The sustainability of collaborative initiatives can be supported by embedding collaborative and professionalization initiatives in organizational and interpersonal aspects of HRM early in the collaborative process.

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Although teacher and school factors such as motivation and HRM are vital to the creation of a relevant collaborative learning environment for teachers, the presence of such conditions is not self-evident. The educational practice is unruly and subject to numerous complex circumstances and (policy) measures relating to individual teachers and their work context. Depending on the context of the group, facilitators can provide more or less support regarding the organization of teacher meetings, the facilitation of participation in learning activities, and the guidance of teachers' discussions. This dissertation illustrated how facilitation is not only a responsibility of formal (external) facilitators but also of (informal) teacher leaders. Acknowledging group members' opportunities and challenges by the (external) facilitator, in terms of shared leadership and responsibilities, might impact not only the learning potential of the collaborative process itself but also the groups' independence and sustainability afterwards. Finally, professional development programs for (pre-service and in-service) teachers can pay attention to the support of teachers' leadership competencies because this dissertation points to the supportive role teachers can have in promoting their colleagues' TPL.