

# Inquiry into Practice in School-Based Teacher Team Activities: Comparing Video Analysis, Peer Consultation and Pedagogical Planning

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**Abstract:** This study contributes to growing scholarly interest in teacher-led, on-the-job learning communities and how collaborative inquiry into practice can be supported in such contexts. We particularly focus on the relative advantages and limitations of three teacher team activity types: video analysis, peer consultation and pedagogical planning. Fifty-four transcribed teacher meeting excerpts were analyzed using the CLIP coding scheme for teacher collaborative inquiry into practice, assessing aspects of inquiry-based reasoning, collaboration and focus on pedagogy (teacher actions, student thinking and disciplinary content). Quantitative comparisons showed that, overall, collaborative inquiry into practice was lowest during peer consultations, in part because teachers were often not positioned as agents of change in such conversations. Teachers tended to inquire into each other's ideas more often during pedagogical planning. Surprisingly, teacher team video analysis activities were not characterized by higher measures of attention to student thinking, nor inquiry orientation. Practical and theoretical implications are discussed.

There is growing scholarly interest in school-based professional learning communities and on-the-job teacher interactions, with a particular focus on how these shape teacher knowledge, reasoning and practice (e.g., Fullan, 2007; Lieberman, 1995; Louis & Stoll, 2007; McLaughlin & Talbert, 2001; Little, 2006; Wei et al., 2009). Teacher professional learning communities can be particularly powerful and productive when teachers engage in the following (e.g., Lefstein et al, 2019; Ball & Cohen, 1999; Grossman et al, 2001; Kazemi & Franke, 2004; Nelson et al, 2010; Popp & Goldman, 2015; Zhang et al, 2011): They explore each other's ideas about teaching and learning, push one another to make pedagogical reasoning explicit, and bring to the surface the various ways they think about pedagogical issues and problems of practice (Horn & Kane, 2015; Popp & Goldman, 2015; Vrikki et al, 2016). We use the term *collaborative inquiry into practice*, to describe this type of engagement.

It is also well documented, however, that collaborative inquiry into practice is not easily elicited and sustained in the context of on-the-job teacher workgroup meetings (Horn et al, 2017; Little, 1990; McLaughlin & Talbert, 2004; Nelson, Deuel, Slavit & Kennedy, 2010). In the present work, we explore how collaborative inquiry into practice can be facilitated and supported in the context of in-school teacher workgroup meetings, with a particular emphasis on the affordances (and limitations) of different activity types.

Despite the current consensus regarding the affordances of collaborative inquiry into practice for teacher learning, little is known about the types of activities that facilitate it in the context of teacher workgroup meetings. Existing empirical research has focused mainly on *formal* professional development (PD) contexts, providing rich and detailed examples illustrating how activities focusing on analyzing representations of practice, such as videos, student work and written cases, support this type of teacher dialogue (e.g., Barnett, 1998; Jacobs, Borko & Koellner, 2009; Ghouseini & Sleep, 2010; Kazemi & Franke, 2004; Sherin & van Es, 2004). However, little is known about the way these activity types could be implemented, enacted and understood in more loosely structured, peer-facilitated context of teacher workgroup meetings. In fact, descriptive studies in naturalistic settings reveal that collaborative analysis of detailed representations of practice is rarely encountered in typical teacher team meetings (e.g., Horn et al, 2017; Little, 1990; Slavit & Nelson, 2010). Two activity types that are more common in these settings are, for example, sharing instructional tips and ideas and the planning of school-related activities (Horn et al, 2017; Slavit & Nelson, 2010).

Recent research and development efforts aim to alleviate this situation and support on-the-job professional learning by providing teacher teams with more structured opportunities and tools to facilitate collaborative inquiry into practice in their local workgroup meetings (e.g., Borko, Koellner & Jacobs, 2014; Conca, Schechter & Castle, 2004; Puchner & Taylor, 2006). The current study was conducted in the context of such an intervention program in two Israeli school districts (the Hashkafa initiative which literally translates as "vision" or "perspective"). This specific context created opportunities to systematically explore and compare the potential of three types of frequent group activities and how they afford or impede collaborative inquiry into practice in teacher-led workgroups.

## The context of the study: The Hashkafa initiative

The study was conducted in the context of a large-scale reform aiming to support collaborative inquiry into problems of practice in teacher professional communities in Israeli schools. The main PD effort was focused on the leading teachers (LTs), who coordinated, planned and facilitated the meetings. LTs met bi-weekly in 3hr long, multi-disciplinary, off-campus PD meetings, in which they were encouraged to (a) focus their workgroup meetings on problems of practice that interest team members; (b) use detailed representations of practice, such as video recordings or detailed case descriptions, to make practice available for collaborative inquiry; and (c) use conversational protocols (a series of pre-defined reflective stages and associated questions (; McDonald, 2003; Segal, Lefstein & Vedder Weiss, 2018) to structure inquiry and cultivate productive discursive norms. During the PD meetings, LTs were introduced to these ideas, principles and tools, experienced them together, and reflected together on their experiences in the workgroup meetings they led.

One of the central tenets of the program was to respect schools' and leading teachers' autonomy to choose what the teams would work on and how. Thus, the LTs were not required to use certain tools, tasks or activities with their teams, but rather were encouraged to adapt and choose the tools and activities in a way that meets the needs of the team's ongoing work. In practice, LTs used the protocols in only one third of the meetings we documented, and incorporated into their workgroup meetings types of activities that were not introduced by the intervention, but which they found useful for supporting their ongoing work. Moreover, schools were free to organize the in-school teams according to their needs, which produced high variability in types of teams in the program. These include disciplinary-focused teams (mathematics, language arts, science and so on), grade band teams, as well as teams organized around a specific topic (e.g., assessment, improving school climate). The large number of teams that participated in the Hashkafa initiative (over 150 workgroups in 2015-2017) together with the program's support of teacher workgroup autonomy regarding content and organization produced unique research opportunities. In particular, it enabled us to conduct a quantitative, comparative study on a relatively large and heterogeneous sample.

## Activity types and collaborative inquiry into practice

The theoretical definition of an activity type used in the current study builds on the sociolinguistic literature, which defines an activity by the goal (or the function) of the interaction, as it is understood by the participants (Levinson, 1979). In other words, the type of activity is defined (and bounded) by the participant's implicit answers to such questions as: what are we doing now? What is the main function of the interaction we are involved in? Since activity types shape participants' expectations about interactional norms, topics, roles and forms of talk, they influence participants' own actions and their interpretations of others' actions (Levinson, 1979). For that reason, we expect the type of activity in which teacher workgroups engage to be consequential for the quality of their collaborative inquiry into practice.

Within the data set of audio-recorded teacher team meetings that were collected in the context of the Hashkafa initiative, we identified three frequent, distinctively different activity types, each aimed at stimulating collective conversations about practice: (1) analyzing a video-recording of a classroom event; (2) planning a pedagogical activity; and (3) peer consultation, an activity in which a member of the group prepares a detailed case he/she is concerned about and presents it to the group, and the team members are then asked to query, comment on and discuss the case. In the following, we briefly review the available literature and research on each of the three teacher team activities that are the focus of the current investigation.

Collaborative *analysis of video* recordings of classroom practice is considered a particularly productive activity for teacher learning and is frequently recommended for teacher professional development (e.g., Borko et al., 2008; van Es & Sherin, 2010; Gaudin & Chalies, 2015). Classroom recordings make the specific details of the teacher-student interactions accessible for analysis and reflection (Ball & Cohen, 1999; Little, 2003). However, the benefits and specifics of activities involving collaborative analysis of classroom video recordings have been studied mostly in the context of formal PD workshops and programs (e.g., Borko et al., 2008; van Es & Sherin, 2010). Therefore, despite the general recommendation to use video to support collaborative inquiry into practice, this type of productive engagement may not be as easily achieved in teacher-led, on-the-job learning communities. First, since the full disclosure of practice that is involved in such activities may entail high levels of face threat for the video-recorded teacher (e.g., Arya, Christ & Chiu, 2013; van Es, Tunney, Goldsmith & Seago, 2014; Zhang et al, 2011) which in turn may lead the participants to avoid critique and exploration of alternatives (Chieu, Kosko & Herbst, 2014; van Es et al, 2014), as well as to increase in individual justifications of actions (Authors, 2019). Moreover, the facilitator's lack of expertise in leading video-based conversations may be pivotal to produce a productive conversation (Borko, Koellner & Jacobs, 2014; van Es, 2010; Ghousseini & Sleep, 2011; Zhang et al, 2011).

Structured *peer consultation activities* are used quite frequently in continuous professional learning in the counseling professions, such as school psychology, social work and school counseling (Benshoff & Paisley, 1996; Greenburg, Lewis & Johnson, 1985; Zins & Murphy, 1996). In the *Hashkafa* initiative, LTs were introduced to a structured protocol to support peer consultation activities, expecting that it would support collaborative inquiry into practice in the context of teacher workgroup meetings. First, because they focus on authentic problems of practice that participating teachers are concerned about (Gibbons & Cobb, 2017; Horn & Little, 2010) which is expected to motivate participants to inquire deeply into them. Second, the detailed description of the problem (the case) the consulting teacher is asked to prepare for the meeting is expected to provide the team with access to the details of practice, which are frequently missing in more spontaneous peer consultations (Little, 2003; Levine & Marcus, 2014).

In contrast with video analysis and peer consultations, was not part of the Hashkafa intervention program, but is more typical of regular teacher workgroup meetings (Horn et al, 2017). Findings from two studies on planning activities present a somewhat mixed picture. On the one hand, a case study by Koellner and colleagues (2007) conducted in the context of a formal PD workshop in which teachers were involved in Problem Solving Cycles 'showed that the planning discussions tended to be rich, as teachers focused on the connections between the specific lesson learning goals, expectations about student reasoning and appropriate ways to help students achieve these goals. In contrast, Horn and colleagues (2017) found that collaborative planning activities in school-based workgroup meetings often focus on logistics, rather than on instructional content or teaching practices.

## The present study

Theory and accumulating evidence show the potential of the three types of teacher workgroup activities (video-analysis, peer consultation and pedagogical planning) to support collaborative inquiry into practice among teachers. However, existing research was primarily conducted in formal PD settings. The affordances of these activity types within the less structured, peer-facilitated context of teacher workgroup meetings has thus far received little scholarly attention. In this study, we explore this issue by systematically comparing these three potentially productive teacher team activities and the extent to which teachers actually engage in collaborative inquiry into practice during these activities. Thus, the present study sheds light on the *relative* advantages of each activity type in workgroup meetings, in comparison to the others.

We use a quantitative, comparative approach, using a validated and reliable coding scheme, the CLIP scheme (Babichenko & Asterhan, 2018), which has been developed specifically for assessing teacher collaborative inquiry into practice in on-the-job teacher team settings. The coding scheme is based on common theoretical distinctions between productive and unproductive teacher conversations for learning (e.g., Borko et al., 2008; Bryk et al, 1999; Cochran- Smith & Lytle, 1999; Horn & Kane, 2015; Nelson, Slavit & Deuel, 2010), while taking into account the specifics and the methodological constraints of analyzing discourse and interaction in teacher-led, in-school workgroup contexts (i.e., high diversity in discourse aims and content in relatively loosely structured conversations). CLIP enables the quantification of distinct features of peer-led collaborative inquiry into practice in workgroup settings, organized according to three main dimensions: participatory, epistemic and content-related.

With regard to participation patterns, productive conversations are described as *collaborative*, i.e., involving multiple team members who contribute substantively to the dialogue (Crespo, 2006; Popp & Goldman, 2016). From an epistemic perspective, productive conversations are described as *inquiry-oriented*, i.e., participants elaborate and explain their ideas, provide reasoning, question and challenge ideas (Borko et al., 2008; Cochran- Smith & Lytle, 1999; Hiebert et al., 2007; Nelson, Slavit & Deuel, 2010). With regard to discourse content, productive conversations explore the inter-relationships among the three components of the instructional triangle: teachers, students and disciplinary content (Borko et al., 2008; Bryk et al, 1999; Cohen et al, 2003; Horn & Kane, 2015; Little, 2006).

## Method

### General recruitment and data collection procedure

A total of 150 teams participated in the *Hashkafa* initiative in 2015-2017, across two major Israeli school districts (one in the center and one peripheral). After taking into consideration logistic constraints (scheduling and travel) as well as language constraints (only the 110 Hebrew-speaking teams were considered for this study), an invitation to participate in the study was issued to 78 teams. Sixty teams from 34 different (mostly elementary) schools voluntarily agreed to a researcher attending and recording a subset of their meetings. The teams were assembled by discipline, grade level or other principle, according to local decisions. A total of 215 meetings (60-90 min each)

were recorded from these 60 teams. The 215 audio-recorded team meetings are the main data set for analysis, from which the selected data set for the current study on activity type was constructed.

## Constructing and preparing the data set for fine-grained analyses

In order to build the final data set of cases for fine-grained analysis (54 cases), the following steps were taken:

### Dividing into activities and defining the type of activity

The entire data set of 215 complete team meetings was divided into activities. The operational definition for the boundaries of an activity were as follows: Activity X starts when the LT explicitly describes what the team will be doing next, that is: with an explicit introduction of the next activity, and concludes when the LT initiates the next activity or adjourns the meeting.

To code for the type of activity, we analyzed the LT's description about what the team is about to do, with a focus on: (a) the activity function or goal that was emphasized (i.e. what were the participants invited to do?); (b) the artifacts (representations of practice) that the participants were invited to look at; and (c) the conversational protocols introduced (if employed)..

The activity was coded as *analyzing peer classroom video* when the team was invited to watch and discuss a video recording taken in one of the team members' classrooms. The activity was coded as *consulting a peer* when one of the team members was invited to introduce his/her issue, case, problem or dilemma (e.g. "Anat will introduce a problem or dilemma that bothers her and we will help her to find ways to deal with it, to think about it, to find solutions"). The activity was coded as *planning a pedagogical activity*, when the team was invited to plan together a lesson, an event (e.g. "The science lab day") or a pedagogical tool (e.g., a test). The verb "planning" did not have to be explicitly used by the LTs. An activity was coded as planning when the event (or the tool) introduced as the focus of conversation was supposed to take place (or be used) in the future (e.g., "Today we will talk about the math marathon, which is scheduled for May 4<sup>th</sup>"). In the current study, we aimed to focus on those planning activities that were introduced or understood by the participants as planning the *pedagogical*, and not solely the *logistic*, aspects of the events or tools. Therefore, cases where included only if the LT explicitly introduced planning of the pedagogical aspects as a central goal of the activity (e.g., "We will plan the *content* of the math day). A total of 30 cases of pedagogical planning were identified in the data set.

### Selection of cases for fine-grained coding

For the final selection of cases to be included in the data set, the following inclusion criteria were applied: (a) The conversation is longer than 5 *min*; (b) the conversation takes place in the whole-group format (and not in several small groups simultaneously); and (c) the entire activity was audio-recorded, without interruptions. If, following this procedure, a particular teacher workgroup was represented more than once in an activity category, one case per workgroup was randomly selected for analysis. This procedure resulted in 20 cases of peer consultation, 20 cases of video analysis and 14 cases of pedagogical planning. The final subset of cases represents 42 different workgroups, from 23 schools.

## Coding teacher dialogue

The 54 selected cases were transcribed and segmented into units. The segmentation strategy used in the current study combined time-based and topical boundaries. That is, the boundaries were identified by (even a slight) topical change that took place in a range between 30 and 120 *sec*. This segmentation strategy resulted in units that were relatively homogenous in their length (around 1 *min* long), but also self-contained and topically coherent. The average number of units per conversation across the 54 cases was 25.73.

To code the teacher conversations, we developed a coding scheme, the Collaborative Inquiry into Practice (CLIP) tool (Babichenko & Asterhan, 2018), that captures key characteristics of what is considered productive teacher-teacher dialogue, adapted to the particular setting of peer-led workgroup meetings. Each unit was coded for 8 distinct features, that together represent the collaborative, inquiry and content-related dimensions of teacher team dialogue.

To measure the extent to which the participants inquire into each other's ideas (inquiry dimension), each unit was coded for the appearance of four discursive moves that are employed in dialogue to push others to elaborate, provide reasoning and explain their ideas (Hennesey et al, 2016; Popp & Goldman, 2016). These include: (a) *asking for details*; (b) *asking for reasoning*; (c) *Disagreeing*; and (d) *Connecting to previous ideas*. In addition, an *Overall Inquiry* index was derived by averaging the four inquiry variables scores per unit.

To measure aspects of what teacher talked about (the content-related dimension), we coded whether each of the three elements of the instructional triangle (Borko et al., 2008; Bryk et al, 1999; Cohen et al, 2003; Horn & Kane, 2015; Little, 2006) was referred to in the unit. These include the following:

- a) *Teacher Actions (TA)*. This variable indicates whether teacher professional actions are at the focus of the conversation in the unit. It has to be noted here that teacher actions are not necessarily instructional actions in the classroom context only, but rather any reference to what a teacher did or does, or what teachers should do in the immediate context of their work (e.g., “I talked to her parents”). Therefore, it reflects whether the teachers are positioned in the dialogue as agents with the competency and the authority to solve the problems at hand (Segal, 2019). In conversations with low rates of reference to teacher actions, other agents (parents, administration, and the students) are positioned as responsible for addressing the issue at hand.
- b) *Student Perspective (SP)*. This variable assesses whether participants explicitly refer to students beyond their observed behavior or external features. In particular, it assessed whether the participating teachers refer to students’ feelings, preferences, goals, needs, interests or difficulties, to the way situations are experienced by students, or whether they try to explain the reasons behind particular student behaviors.
- c) *Disciplinary Content (DC)* indicates whether reference to teaching or learning of specific aspects of subject matter appeared in the dialogue unit. Since not all participating workgroups in the current study were organized around instructional disciplines, we coded for disciplinary content only in disciplinary teams (i.e, math, language, English, and science teams, accounting for 67% of the activities in the data set).

A measure of *Non-pedagogical dialogue* was derived from the abovementioned content-related variables, by identifying units in which teachers did not refer to any of the three pedagogical triangle elements. The dialogue in these units was devoted to discussing the meeting itself (e.g., introducing the directions for the following steps), discussing the students’ parents or family, coordinating logistics, discussing administrative issues, school personnel, and personal issues.

To measure the Collaborative aspect, we coded how many participants were actively contributing to the conversation in the unit. Inter-rater reliability of the 10 coded variables was good, ranging between  $ICC = .737$  to  $ICC = .947$ .

For each case, we calculated the average score for each of the coded features. All variables, except for the participation dimension, were coded as 0 (the coded category did not occur in the dialogue unit) or as 1 (the coded category occurred in the unit). Therefore, the average scores represent in fact the relative frequency of a particular feature in an activity type. For example, a score of .59 on the disagreement index indicates that in 59% of the dialogue units in that activity a disagreement was detected.

## Results

To compare the extent to which teacher teams engage in collaborative inquiry into practice, one-way ANOVAs were used to compare the various CLIP-based variables between the three activity types. Tukey post hoc comparisons were conducted when a statistically significant main effect was found ( $p < .05$ ).

### The inquiry dimension

A statistically significant difference between activity types was found for the overall inquiry score,  $F(2, 51) = 5.09, p = .010, \eta_p^2 = .17$ . A Tukey post hoc comparison showed that when teachers are involved in pedagogical planning ( $M = .38, SD = .08$ ) they tend to inquire into each other’s ideas more frequently than when they take part in video-analysis ( $M = .29, SD = .07, p = .010$ ). There was no statistically significant difference between peer consultation and the other two activity types. Separate one-way ANOVA tests indicated that the tendency to inquire more into each other’s ideas during planning activities can mostly be attributed to significant differences on the tendency to ask for details,  $F(2,51) = 5.31, p = .008, \eta_p^2 = .17$ , and the tendency to disagree,  $F(2,51) = 4.49, p = .016, \eta_p^2 = .15$ . Post hoc comparisons indicated that teachers tended to ask for details more often during planning activities ( $M = .50, SD = .19$ ) than when they analyze a video ( $M = .33, SD = .13, p = .006$ ). No statistically significant differences were found between peer consultations and other activities. Teacher dialogue included more explicit disagreements when planning together ( $M = .52, SD = .25$ ) compared to during video analyses ( $M = .35, SD = .14, p = .030$ ) or peer consultations ( $M = .35, SD = .14, p = .025$ ). There were no statistically significant differences between activity types on the remaining two variables.

### The content dimension

A statistically significant difference between activity types was found for Non-Pedagogical Discourse,  $F(2, 51) = 3.28, p = .046, \eta_p^2 = .11$ . A Tukey post-hoc comparison showed that, on average, in 33% ( $SD = .18$ ) of the dialogue units teacher teams did not attend to any aspect of the instructional triangle during peer consultation activities, which was significantly more than during video analysis ( $M = .20, SD = .15$ ). No statistically significant

differences were found for pedagogical planning. Separate one-way ANOVAs for the variables measuring the three elements of the instructional triangle revealed significant differences between activity types in focus on teacher actions,  $F(2, 51) = 4.60, p = .015, \eta^2_p = .15$ , and a near significant difference in attention to disciplinary content,  $F(2, 34) = 2.79, p = .076, \eta^2_p = .14$ . No significant differences between activity types were found for attention to the student perspective. Tukey post hoc comparisons showed that during peer consultation, conversations tended to focus significantly less on teacher actions ( $M = .47, SD = .20$ ) than during pedagogical planning activities ( $M = .66, SD = .19$ ). There was no statistically significant difference between video analysis and the other two activity types. The percentage of units addressing disciplinary content was almost twice more during video analysis (51%) compared to peer consultation activities (26%). It indicates that the conversations during video analysis activities tended to be more focused on specific disciplinary content. It has to be noted that the statistical tests on this variable were conducted on a relatively small sample ( $N = 37$ ), as they were conducted on conversations from disciplinary-specific teams only.

### The collaborative dimension

No statistically significant differences were found between activity types with regard to participation patterns,  $F(2, 48) = 2.49, p = .094$ .

## Discussion

In light of the increasing interest in on-the-job, teacher-led professional learning communities, scholars have begun to unpack what characterizes productive professional learning communities in such settings and how they may be supported (e.g. Lefstein et al, 2019; Bryk, Camburn & Louis, 1999; Grossman et al, 2001; Horn et al, 2017; McLaughlin & Talbert, 2012; Little, 2002). The present study contributes to this fast-growing field of inquiry by specifically focusing on the role of activity type. Even though empirical evidence is accumulating about the type of activities that support teacher engagement in *formal* PD interventions (Barnett, 1998; Jacobs, Borko & Koellner, 2009; Ghouseini & Sleep, 2010; Kazemi & Franke, 2004; Sherin & van Es, 2004), little is known about the types of activities that elicit teacher collaborative inquiry into practice in the context of on-the-job, teacher-led teacher team meetings. We addressed this gap by comparing features of teacher interactions while they were engaged in one of three pedagogical activities in team meetings: video analysis of classroom practice, peer consultation and pedagogical planning. The features of teacher interaction we focused on specifically were informed by the extensive literature on teacher collaborative inquiry into practice. We focused on participation patterns, inquiry orientation and the content of teacher team discourse. In the following sections, we discuss the affordances and limitations of each activity type, based on the findings presented here.

### Pedagogical planning

Our findings indicate that pedagogical planning activities are characterized by relatively high levels of inquiry into each other's ideas, in particular substantively more disagreements and requests for factual details. Thus, in the context of planning activities teachers feel more comfortable, or more obligated, to explicitly challenge each other's ideas, which in turn has the potential to create further opportunities to explore these differences through the exchange of pedagogical ideas (Astrhan 2015; 2016). This tendency to disagree and to challenge other's ideas more often could potentially be explained by the fact that in many of these conversations most or all of the participating teachers are eventually expected to implement the unit, activity or tool that they have planned together. In other words, the participants have a practical stake in the outcomes of planning activities. Moreover, teachers may view this activity type as a better fit for in-school workgroup meetings, in comparison with the reflective nature of video analysis and peer consultation activities, and better aligned with expectations concerning practical, tangible outcomes of such meetings that could be readily applied. To conclude, the findings of the current study provide first indications for the potential of pedagogical planning activities to elicit collaborative inquiry into practice in the context of teacher workgroup meetings,

### Peer consultation

Despite the fact that peer consultation activities to initiate conversations about practice were chosen most frequently by leading teachers in our sample, and despite its potential described in the literature (Benshoff & Paisley, 1996; Greenburg, Lewis & Johnson, 1985; Zins & Murphy, 2010), the findings presented here indicate that peer consultation was less effective in supporting collaborative inquiry into practice. Significant stretches of these conversations were devoted to the discussion of non-pedagogical topics. In particular, teacher peer consultations rarely explored teacher actions, indicating that teachers were less frequently positioned as active agents in these activities.. Second, participants referred less frequently to issues concerning the teaching and/or learning of disciplinary content during these activities. In addition, when compared to the other two activity types,

peer consultation yielded relatively low indices of inquiry into each other's ideas. In particular, we note participating teachers' tendency to avoid disagreements.

These tendencies to steer the conversations away from a focus on teacher actions and to avoid critique (and disagreement) could potentially be explained by socio-emotional group processes, in which other teachers actively protect the consulting teacher from potential threats to his/her professional face (Vedder-Weiss, Segal & Lefstein, 2019). This can be achieved, among others, by attributing the cause of problems of practice to circumstances that are beyond the teacher's control or by avoiding inquiry into her actions to address the problem.

## Video analysis

Both video case analysis and peer consultation activities involve, by definition, the disclosure of practice by one of the team members. This disclosure is considered one of the key features of productive pedagogical discourse, as it anchors conversations around classroom interactions, teacher actions and student thinking (e.g., Babichenko & Asterhan, 2018; Horn & Little, 2010; Sherin, Linsenmeier & van Es, 2009). Whereas this was not apparent in the peer consultation activities documented here, teacher dialogue during video analysis activities were indeed characterized by an overall focus on pedagogical issues in general, and on issues of instruction of specific content in particular. This advantage of the video analysis activities with regard to the content of conversations, especially in comparison to the peer consultation activity, could perhaps be attributed to the extent to which the video makes details of practice publicly visible for analysis and inquiry (Little, 2002; Levine & Marcus, 2010). Access to the details of a specific instructional event through video is likely to enable a more focused conversation on the possible ways a particular piece of disciplinary content could be taught.

However, notwithstanding its *potential* for noticing and discussing student thinking and understanding during instructional events, the video analysis conversations in our data set were not characterized by increased attention to student perspectives compared to the other two activity types. This finding is surprising since it runs counter to the common use of video case analyses specifically to facilitate teacher noticing of student thinking (Gamoran, Sherin & van Es, 2009; Gaudin & Chalies, 2015). On the other hand, Sherin and Han (2004) also reported that the capability to notice student thinking from video cases develops gradually and requires an expert facilitator. The team meetings in the current data set were not led by an experienced, expert facilitator. Moreover, the data was collected from the teacher teams' first forays into collaborative video case analysis activities. More research is needed to explore the reasons behind this unexpected finding. For now, we can cautiously conclude that noticing of student perspectives is not inherent to the video analysis *activity* itself, but rather that teacher teams have to be explicitly oriented toward it, perhaps by an expert facilitator.

As for the inquiry-related aspects of teacher dialogue, teachers tended to inquire into each other's' ideas and disagree significantly less frequently during video analysis than during planning activities. Although we did not specify detailed, a priori hypotheses, this finding is nevertheless surprising as well, especially given the existing literature on the affordances of video analysis (Gaudin & Chalies, 2015). This relatively tendency to avoid inquiry into others' ideas may reflect the team members' attempt to avoid criticizing the videotaped teacher and protect her from face threats. It could also be the result of other processes, such as lack of motivation. In contrary with planning, video analysis is a reflective exercise without a tangible, immediately useful outcome, which may negatively affect teachers' motivation to participate.

The findings of the current study indicate that the potential of classroom video cases as a rich representation of practice to elicit pedagogical discourse is not fully exploited in the school-based, teacher-led workgroups, even when a rather extensive support system to regulate pedagogical discourse around video cases is in place (e.g., team conversation protocols, help with editing and choosing video excerpts, PD exercises with video analyses).

## Contribution of the study

In this study, we join first steps made by other researchers to explore the migration of formal PD activities into the context of peer-facilitated, on-the-job interactions (e.g., ; Brantlinger, Sherin & Linsenmeier, 2011; Segal, Lefstein & Vedder-Weiss, 2018). Specifically, we investigated how team activities shape teacher discourse, a topic that has not been commonly considered. The relative effectiveness of three activity types that have each been described as effective in the context of formal PD interventions was explored in the context of teacher workgroup meetings. Our focus on the relative affordances of activity types, instead of particular PD programs, corresponds with increasing scholarly interest in identifying and comparing different design features for productive professional learning by directly comparing them (e.g., Hill, Beisiegel, & Jacob, 2013).

The findings of the study have practical implications for facilitators of teacher workgroup meetings, first and foremost by informing their consideration of activities for collaborative inquiry into practice. Moreover, the findings of the study identify potentially unproductive processes that are associated with each type of activity.

Awareness to such processes in the context of a specific activity can be helpful for facilitators and prepare them to intervene more productively when needed.

A major strength of our study lies in the methods employed. First, our study draws on a large, heterogeneous sample of different teacher workgroups, which varied highly in their focus, composition, and the issues addressed. The size and heterogeneity of this database improves the generalizability of the findings across types of teams and across topics or issues discussed. Moreover, in contrast with the majority of existing research on teacher professional learning communities and teacher professional discourse, a quantitative, comparative method was adopted using inferential statistical methods, which adds further power to the findings reported and complements qualitative work on teacher on the job learning processes.

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