

## **Paper 4: Exploring the External Domain: Describing the Role of Collaboration on Teacher Learning**

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### **Abstract**

Researchers of teacher education have long advocated that one of the most essential supports to teacher learning of novel instruction practices comes from collaboration. Much of the collaboration literature focuses on the outcomes of teacher collaboration without providing insight into the nature of collaborations. In this work, we seek to understand the collaboration that occurred between five school biology teachers as they designed, enacted, and reflected on a lesson emerging from professional development focused on productive talk. The questions guiding this work include: What was the focus of the LCD teacher group's collaboration?, What was the nature of the LCD teacher group's collaboration? and, What role did the group's collaboration serve in supporting each teacher's practice? We found that the collaborative space opened-up opportunities for teachers to discuss their practice for the lesson and outside of the lesson itself. Salient to the collaborative space was a sense of support between the teachers as teachers intensively listened to one another, normalized a problematic issue as well as the emotions that they were experiencing by relating to each other, providing advice and words of encouragement. Teachers' collaboration eased the work of designing and enacting a conceptually challenging lesson.

### **Introduction and Research Questions**

Researchers of teacher education have long advocated that one of the most essential supports to teacher learning of novel instruction practices comes from *collaboration* (Briscoe & Peters, 1997). Teacher collaboration can influence school performance and student achievement (Goddard et al., 2007; Vangrieken et al., 2015), facilitate change in individual teachers' practices and beliefs (Briscoe & Peters, 1997), and support change in teachers' curricular implementation (Voogt et al., 2016). Designers and facilitators of teacher professional development (PD) have intentionally built spaces for teachers to engage with one another (e.g., Nelson et al, 2008; Triantafillou et al., 2021). While research on teacher collaboration abounds, much of this literature focuses on the outcomes of teacher collaboration without providing insight into the nature of collaboration (Horn & Little, 2010; Vangrieken et al., 2015). In light of this, in this work we seek to understand the collaboration that occurred between LCD teachers as they designed, enacted, and reflected on a lesson. The questions guiding this work are:

1. What was the focus of the LCD teacher group's collaboration?
2. What was the nature of the LCD teacher group's collaboration?
3. What role did the group's collaboration serve in supporting each teacher's practice?

### **Methods**

This proposal centers the collaborative efforts of one group of five teachers. Each teachers, named using the pseudonym of Allison, Naomi, Heather, Stone, and Claire, work in the same large school district in the Southeastern US. Four teachers, Heather and Stone and Allison and Naomi work at the same school. Naomi, is the department lead for science at her Title 1 school.

Data collection focused on teachers' collaborations around the *Fruit Fly Genetics* laboratory.

Data included recordings of design sessions, lesson artifacts from shared workspace, post-enactment reflective interviews, collaboration surveys, and exit tickets. Data analysis centered on meso-level participation routines (Horn & Little, 2010), the focus and nature of the conversations, and the participants' views of collaboration.

## **Findings**

Question 1: In the *Genetics* lesson, the collaborative space opened up opportunities for teachers to discuss their practice outside of the lesson itself. Conversations in the collaboration meetings with PD facilitators typically began with teachers sharing issues they were facing in their classrooms and in their schools (i.e., student absences due to Covid, lack of consideration of viral spread by administration). Heather talked of her worries about overloading her students while also wanting to make sure that the students did not miss out on any learning opportunities. The group's concerns ranged from feeling overworked and having to "cover" additional classes to frustrations with the timing of district/state-wide testing. Discussions of the lesson itself (both in design and analyze sessions) included conversation around specific practices, such as structuring student groups and asking productive questions. Teachers reflected on their own experiences as learners of the lesson during the summer PD as they were trying to decide what supports to provide their student. After teaching, they reflected on their experiences teaching the lesson during the analyze session; aired grievances about software issues central to the Genetics simulation part of the lab, and discussed how they would make changes for the future.

Question 2: Salient to the collaborative space was a sense of support between the teachers. As they engaged in conversation with one another about problems of practice that each of them faced, the teachers intensively listened to one another, normalized the issue itself and the emotions that they were experiencing by relating to each other, and provided advice and words of encouragement to one another. For example, when Naomi shared her worries about the lesson and preparing her students for and aligning with the timing of a district-mandated biology assessment, other teachers nodding emphatically. Stone prefaced his advice to her by saying "I agree, it's ugly and it sucks," and Allison followed by sharing how she planned to administer the assessment. The teachers also took the sessions as an opportunity to ask for feedback specific to their own enactment. Stone, for example, shared that "a lot of times I feel like I ask questions that aren't supposed to be answered," and asked for advice about how to craft more meaningful questions. When reflecting on Heather's teaching in the analyze session, teachers offered praise of the ways with how she framed the lesson and engaged with her students' ideas. They drew comparisons and contrasts between Heather's enactment and their own, without providing any level of criticism of her moves.

Question 3: Teachers' collaboration served to ease the work of designing and enacting a demanding and conceptually challenging lesson. Naomi taught the lesson first and experienced a great deal of difficulty. While she did not feel that the collaboration helped her in designing and enacting the lesson, she did feel that her "failures could help other people." Thus, she texted other the teachers to share her struggles and offer advice. Naomi's input was consequential for the other teachers' enactments; for example, Heather explained that hearing from both Naomi contributed to the success of the lesson for her students: "When Nicole said how bad hers went, I was really worried... If her students didn't get it, my students are not getting it. And so that motivated me to put the work into [developing additional classrooms supports]."

## Conclusions

If we want teachers to engage students in equitable reform aligned instruction, we must attend to the work that they do in these settings and how to support them to make progress in this work.

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